

**Addendum 01 to the
Transportation Technical Report
Honolulu High-Capacity Transit Corridor Project**

July 1, 2009

Prepared for:
City and County of Honolulu

Summary

This Addendum supplements materials in the *Honolulu High-Capacity Transit Corridor Project Transportation Technical Report* dated August 15, 2008. Unless stated otherwise in this Addendum, the background, methodology, and affected environment descriptions in the Transportation Technical Report also apply to this Addendum. In any case where this Addendum differs from the technical report, the information in this Addendum supersedes that of the technical report.

This Addendum reflects changes to the Transportation Technical Report as a result of new analysis conducted in February 2009, which adjusted pedestrian phasing at many of the study intersections. Despite these changes, there are no new impacts at any of the study intersections, and the results presented in the Draft EIS remained the same. The new analysis is discussed further in Section 2, Methodology.

1

Background

No change

2

Methodology

Add	The following supplements and is added to the end of Section 2.3.4 Localized Traffic Analysis at and near Stations
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New Pedestrian Phasing and Volume Forecasts, February 2009

New analysis conducted in February 2009 adjusted many of the study intersections to include more appropriate pedestrian phasing and volume forecasts. Information in Table 5-7 of the Transportation Technical Report was used to estimate pedestrian volumes around the stations.

At most intersections, these changes resulted in a small increase in estimated delay. At some intersections, the delay increase was high enough to cause the level of service (LOS) to change. Despite these changes, there are no new impacts at any of the study intersections, and the results presented in the Draft EIS remained the same.

At some locations, the delay will decrease slightly due to modifications to pedestrian timings (modifying the pedestrian phase will, in some cases, add time to the critical vehicle movement). Also important to note is that locations with very high delays (LOS F) tend to be less stable and more sensitive to changes in volume and/or signal timings. This generally results in larger delay changes at these intersections. Results of this updated analysis are presented in Sections 3 and 5 of this Addendum.

3

Existing Conditions and Performance

Change The following is a modification to and replaces
Section 3.3.6 Existing Traffic Conditions at Intersections

3.3.6 Existing Traffic Conditions at Intersections

To better understand existing traffic conditions at intersections potentially affected by the proposed fixed guideway, the study corridor was divided into sections: Kapolei (including the planned extension to West Kapolei), West Loch to Aloha Stadium, Aloha Stadium to Middle Street, Middle Street to Iwilei, Iwilei to Ala Moana Center, the University of Hawai'i Mānoa planned extension, and the Waikīkī planned extension.

Kapolei

This section of the proposed alignment focuses on the Kapolei area of O'ahu and includes the planned fixed guideway stations identified in Table 3-25.

The "Second City" of Kapolei is home to City and County of Honolulu and State of Hawai'i offices, as well as UH West O'ahu. Although new residential development is being built in the area, employment destinations are still dominated by Downtown Honolulu and nearby commercial areas. As a result, traffic flow is dominated by traffic going out of this area toward Downtown Honolulu in the a.m. peak period and back from Honolulu in the p.m. peak period.

Table 3-25: Kapolei Planned Fixed Guideway Stations

Planned Fixed Guideway Stations	Cross Streets
West Kapolei (planned extension)	Kapolei Parkway and Hanua Street
Kapolei Transit Center (planned extension)	Kapolei Parkway and Wākea Street
Kalaeloa (planned extension)	Saratoga Avenue and Wākea Street
Fort Barrette Road (planned extension)	Saratoga Avenue and Fort Barrette Road/Enterprise Street
Kapolei Parkway (planned extension)	North-South Road makai of Kapolei Parkway
East Kapolei	North-South Road makai of future UH West O'ahu campus
UH West O'ahu	North-South Road mauka of future UH West O'ahu campus
Ho'opili	Farrington at Ho'opili (near future Horton Development)

The Kapolei section contains 29 of the 215 intersections selected for analysis. The LOS analysis results are discussed below for both the fixed guideway and the planned extension towards West Kapolei. As shown in Table 3-26, the following two intersections along the proposed alignment are currently operating at LOS E during the a.m. peak hour:

- Saratoga Avenue and Enterprise Avenue (adjacent to Fort Barrette Road Station) (Intersection #4)
- Farrington Highway and Old Fort Weaver Road (Koko Head of Ho'opili Station) (Intersection #6)

Situated just off the alignment, 12 intersections are currently operating at poor levels of service (LOS E or F) during one or both peak hours. The most congested areas occur at:

- Kalaeloa Boulevard between the H-1 Freeway on/off ramps and Kapolei Parkway (Intersections #10 and 11)
- The stop-controlled side streets of Kamokila Boulevard (e.g., Uluohia Street and Manawai Street) (Intersections #12 and 13)
- Roosevelt Avenue between Fort Barrette Road and Coral Sea Street (Intersections #16 and #17)
- Roosevelt Avenue at Philippine Sea (Intersection #19)
- Fort Weaver Road between Renton Road and Geiger Road and Fort Weaver Road at Laulaunui Street (Intersections #24–26)
- Farrington Highway at Fort Barrette Road (Intersection #27)
- Old Fort Weaver Road fork makai of Farrington Highway (Intersection #29)

As noted previously, traffic flow in Kapolei is dominated by traffic going out of this area toward Downtown Honolulu in the a.m. peak period and back from Honolulu in the p.m. peak period. For example, the Fort Weaver Road/Geiger Road intersection operates at LOS E during the morning a.m. peak hour, and at LOS F during the p.m. peak hour with similar overall volumes. The difference is the heavy makai-bound left turns from Fort Weaver Road onto Geiger Road during the evening as commuters return to their homes. During the a.m. peak hour, these same motorists are making right turns from Geiger Road onto mauka-bound Fort Weaver Road, a move that requires less overall green time.

Similar traffic patterns are also evident on major east-west highways in this section such as the H-1 Freeway, Farrington Highway, and Kapolei Parkway and on north-south roadways such as Fort Weaver Road, Fort Barrette Road, and North-South Road.

Table 3-26: Existing Intersection Levels of Service—Kapolei

Intersection				Control*	Existing Year 2007				
					A.M. Peak Hour Delay (sec) LOS		P.M. Peak Hour Delay (sec) LOS		
#	Intersections Along Alignment								
1	Kalaeloa Boulevard	&	Kapolei Parkway		S	27	C	53	D
2	Roosevelt Avenue	&	Hornet Avenue	¹	TWSC	9	A	9	A
3	Saratoga Avenue	&	Hornet Avenue	¹	AWSC	7	A	7	A
4	Saratoga Avenue	&	Enterprise Avenue	¹	TWSC	45	E	22	C
5	Saratoga Avenue	&	Midway Street	¹	TWSC	16	C	9	A
6	Farrington Highway	&	Old Fort Weaver Road	¹	TWSC	45	E	25	C
7	Farrington Highway	&	Fort Weaver (Highway 76) SB On-Ramp		S	8	A	5	A
8	Farrington Highway	&	Kunia (Highway 76) NB On-Ramp		S	9	A	6	A
9	Old Fort Weaver Road	&	Farrington IC		S	8	A	10	B
#	Intersections Off Alignment								
10	Kalaeloa Boulevard	&	Farrington Highway/H-1 WB On/Off Ramps	¹	TWSC	31	D	>300	F
11	Kalaeloa Boulevard	&	H-1 EB Off-Ramp	¹	TWSC	220	F	15	B
12	Kamokila Boulevard	&	Uluohia Street	¹	TWSC	18	C	101	F
13	Kamokila Boulevard	&	Manawai Street	¹	TWSC	>300	F	>300	F
14	Fort Barrette Road	&	Kamaaha Avenue		S	29	C	25	C
15	Farrington Highway	&	Kamokila Boulevard		S	34	C	33	C
16	Roosevelt Avenue	&	Fort Barrette Road	¹	AWSC	89	F	70	F
17	Roosevelt Avenue	&	Coral Sea Street	¹	TWSC	53	F	66	F
18	Roosevelt Avenue	&	Stout Street	¹	TWSC	12	B	20	C
19	Roosevelt Avenue	&	Philippine Sea	¹	TWSC	85	F	16	C
20	Saratoga Avenue	&	Franklin Street	¹	AWSC	7	A	7	A
21	Saratoga Avenue	&	Lexington Street	¹	AWSC	7	A	7	A
22	Vinson Road	&	Stout Street	¹	AWSC	6	A	7	A
23	Renton Road	&	Philippine Sea	¹	TWSC	9	A	9	A
24	Fort Weaver Road	&	Renton Road		S	60	E	69	E
25	Fort Weaver Road	&	Geiger Road		S	56	E	104	F
26	Fort Weaver Road	&	Laulaunui Street		S	152	F	51	D
27	Farrington Highway	&	Fort Barrette Road		S	79	E	94	F
28	Farrington Highway	&	Kealanani Avenue		S	36	D	27	C
29	Old Fort Weaver Road	&	Old Fort Weaver Road	¹	TWSC	11	B	>300	F

*S = Signal AWSC = All-way stop control TWSC = Two-way stop control

¹ Intersection is controlled by stop sign(s). Analysis was done using Highway Capacity Manual stop-controlled methodology. For all-way-stop-controlled intersections, average vehicular control delay of all approaches in seconds is reported. For two-way controlled intersections, the LOS and delay in seconds for the worst-case movement (minor streets) are reported.

Visual observations in addition to traffic counts conducted in October and November 2007 and January and March 2008 indicate that most of the same intersections and roadways that operate at LOS E or F during peak periods operate at LOS A during most off-peak hours because of the lack of substantial midday commercial traffic.

Detailed analysis worksheets are included in Appendix C for the a.m. and p.m. peak hours. Figure 3-25 shows the LOS at the intersections analyzed.

West Loch to Aloha Stadium

This section of the proposed alignment focuses on the West Loch to Aloha Stadium area of O'ahu. The description includes traffic conditions at the fixed guideway stations identified in Table 3-27.

This section of the proposed alignment contains 32 intersections where traffic conditions may be altered by the fixed guideway. Table 3-28 provides the complete LOS analysis for these locations. Figure 3-26 shows the LOS at the intersections analyzed. As shown in the table and figure, eight intersections along the alignment are currently operating at a poor LOS (LOS E or F) during one or both peak hours. Most of the congestion occurs at:

- Farrington Highway at Leokū Street (Intersection #30)
- Farrington Highway between Kahualii Street/Waipio Point Access Road and Kamehameha Highway (Intersection #35)
- Farrington Highway at Waiawa Road (Intersection #36)
- Kamehameha Highway at Waihona Street (Intersection #38)
- Kamehameha Highway at Kuala Street (Intersection #39)
- Kamehameha Highway at Acacia Road (Intersection #40)
- Kamehameha Highway at Waimano Home Road (Intersection #41)
- Kamehameha Highway at Honomanu Street (just 'Ewa of the Moanalua Freeway Ramps) (Intersection #49)

The following four intersections, which are not located directly on the alignment, currently operate at LOS E or F during the a.m. and the p.m. peak hour:

- Kunia (Highway 76) northbound on-ramp at Waipahu Street (Intersection #51)
- Ala 'Ike Street at Waiawa Road (entrance to Leeward Community College) (Intersection #52)
- Waipahu Street at Mokuola Street (Intersection #58)
- Moanalua Road at Kaimakani Street (Intersection #61)

Where median openings exist on Farrington Highway, many motorists experience LOS D or worse when entering and exiting the unsignalized minor streets. Some signalized intersections on Farrington Highway and Kamehameha Highway also operate at LOS F. This is a direct result of heavy left-turn movements to and from

major commercial shopping centers on the mauka side of Farrington Highway and Kamehameha Highway.

On the segment of Kamehameha Highway between Pu'u Momi Street and Pali Momi Street (intersection #42 to 48), the acceptable LOS (D or better) shown for the p.m. peak hour may not reflect the actual gridlock conditions for 'Ewa-bound traffic in this section of the Kamehameha Highway. In the p.m. peak hour, observations taken in the field indicate that the heavy 'Ewa-bound commute traffic is limited to heavy turning movements from the Pearl City Shopping Center at Waimano Street and the commercial strips between Kaonohi Street and Pali Momi Street. The extended green time for the side streets creates problems for synchronizing signals along the corridor, which results in long queues on Kamehameha Highway between Waimanu Home Road and Honomanu Street. Since the LOS and methodology were based on volumes that traveled through the intersections, the actual vehicle delays may not be reflected in the reported LOS for this section of Kamehameha Highway. However, the Koko Head-bound traffic in this section of Kamehameha Highway was observed to move well and was relatively uncongested during the p.m. peak hour.

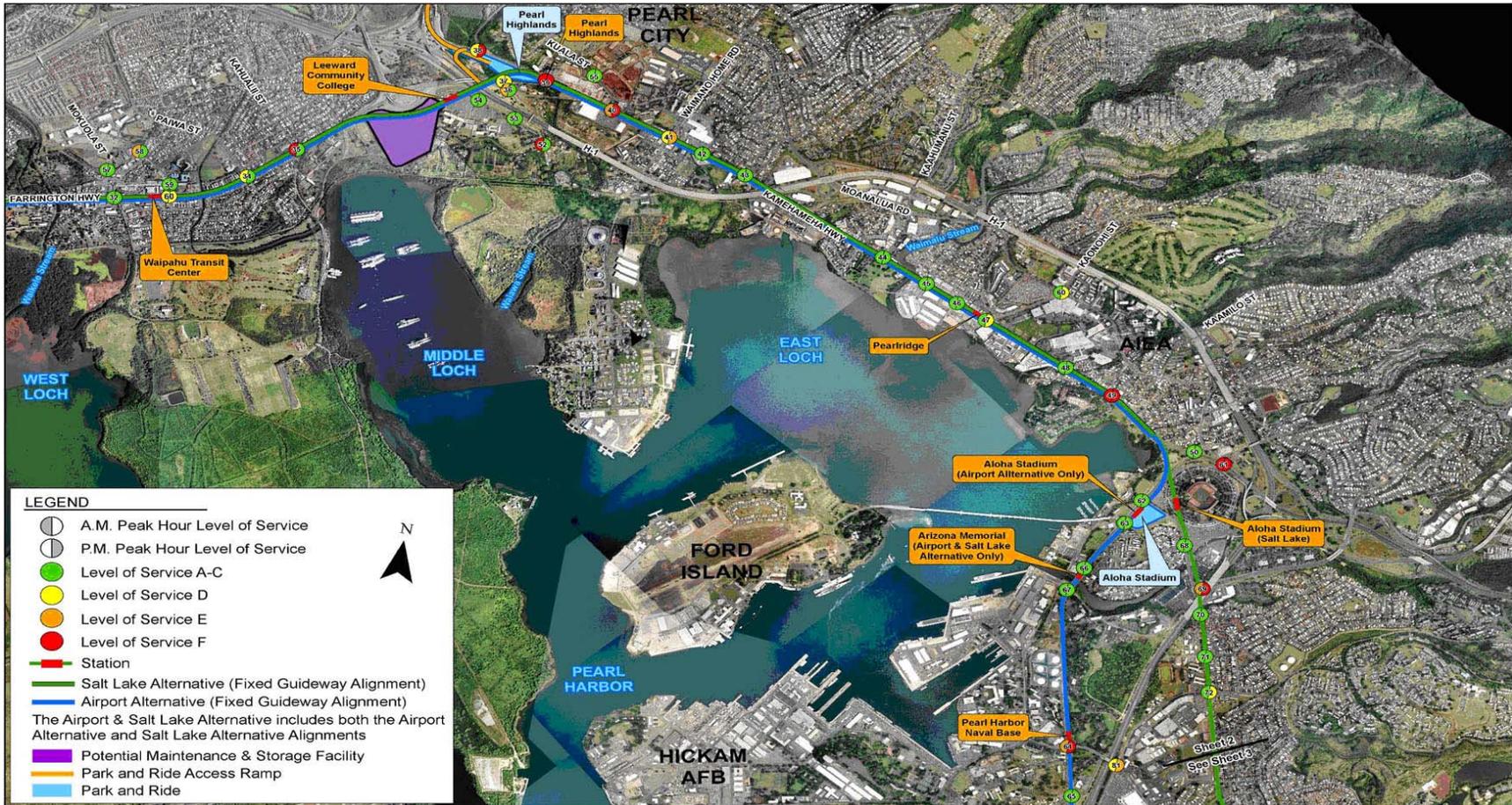


Figure 3-26: Existing Intersection Level-of-Service—Salt Lake and Airport to Iwilei

Table 3-27: West Loch to Aloha Stadium Fixed Guideway Stations

Fixed Guideway Stations	Cross Streets
West Loch	Farrington Highway at Leokū Street
Waipahu Transit Center	Farrington Highway at Mokuola Street
Leeward Community College	Leeward Community College
Pearl Highlands	Kamehameha Highway at Kuala Street
Pearlridge	Kamehameha Highway at Kaonohi Street

Table 3-28: Existing Intersection Levels of Service—West Loch to Aloha Stadium

#	Intersection			Control*	Existing Year 2007				
					A.M. Peak Hour Delay (sec) LOS		P.M. Peak Hour Delay (sec) LOS		
	Intersections Along Alignment								
30	Farrington Highway	&	Leokū Street		S	34	C	82	F
31	Farrington Highway	&	Leokane Street		S	21	C	23	C
32	Farrington Highway	&	Waipahu Depot Road		S	31	C	29	C
33	Farrington Highway	&	Mokuola Street		S	36	D	48	D
34	Farrington Highway	&	Paiwa Street		S	42	D	20	C
35	Farrington Highway	&	Kahualii Street/ Waipi'o Point Access Road		S	103	F	17	B
36	Farrington Highway	&	Waiawa Road (EB)		S	78	E	13	B
37	Farrington Highway	&	Waiawa Road (WB)	¹	TWSC	30	D	30	D
38	Kamehameha Highway	&	Waihona Street	¹	TWSC	26	D	>300	F
39	Kamehameha Highway	&	Kuala Street	¹	TWSC	74	F	136	F
40	Kamehameha Highway	&	Acacia Road		S	59	E	86	F
41	Kamehameha Highway	&	Waimano Home Road		S	36	D	65	E
42	Kamehameha Highway	&	Pu'u Momi Street		S	11	B	10	B
43	Kamehameha Highway	&	Pu'u Poni Street		S	7	A	8	A
44	Kamehameha Highway	&	Ka'ahumanu Street		S	27	C	24	C
45	Kamehameha Highway	&	Hekaha Street		S	16	B	22	C
46	Kamehameha Highway	&	Kanuku Street		S	21	C	11	B
47	Kamehameha Highway	&	Kaonohi Street		S	27	C	35	D
48	Kamehameha Highway	&	Pali Momi Street		S	21	C	10	A
49	Kamehameha Highway	&	Honomanu Street		S	91	F	87	F
50	Moanalua Road	&	Kamehameha Highway Ramps		S	20	C	18	B

Table 3-28: Existing Intersection Levels of Service—West Loch to Aloha Stadium (continued)

Intersection		Control*	Existing Year 2007						
			A.M. Peak Hour Delay (sec) LOS		P.M. Peak Hour Delay (sec) LOS				
#	Intersections Off Alignment								
51	Kunia (Highway 76) NB On-Ramp	&	Waipahu Street	¹	TWSC	20	C	162	F
52	Ala Ike Street	&	Waiawa Road	¹	TWSC	53	F	21	C
53	Ala Ike Street	&	1 st driveway west ('Ewa) of overpass	¹	TWSC	22	C	10	A
54	Ala Ike Street	&	2 nd driveway west ('Ewa) of overpass	¹	TWSC	15	B	11	B
55	Kuala Street	&	Acacia Road		S	12	B	14	B
56	Waipahu Street	&	Leokū Street		S	10	A	15	B
57	Waipahu Street	&	Waipahu Depot Road		S	19	B	15	B
58	Waipahu Street	&	Mokuola Street		S	66	E	34	C
59	Mokuola Street	&	Hikimoe Street		S	7	A	10	A
60	Moanalua Road	&	Kaonohi Street		S	30	C	52	D
61	Moanalua Road	&	Kaimakani Street	¹	TWSC	53	F	93	F

*S = Signal TWSC = Two-way stop control.

¹ Intersection is controlled by stop sign(s). Analysis was done using Highway Capacity Manual stop-controlled methodology. For two-way controlled intersections, the LOS and delay in seconds for the worst movement are reported.

Aloha Stadium to Middle Street

This section of the proposed alignment focuses on the Aloha Stadium to Middle Street area of O'ahu and includes the fixed guideway stations identified in Table 3-29.

Table 3-29: Aloha Stadium to Middle Street Fixed Guideway Stations

Fixed Guideway Stations	Cross Streets
Salt Lake Alternative	
Aloha Stadium (Salt Lake)	Salt Lake Boulevard at Kahuapa'ani Street
Ala Liliko'i	Salt Lake Boulevard at Ala Liliko'i Street
Airport Alternative	
Aloha Stadium (Kamehameha Highway)	Aloha Stadium at Kamehameha Highway
Arizona Memorial	Kamehameha Highway at Hālawā Drive /Arizona Road
Pearl Harbor Naval Base	Kamehameha Highway and Radford Drive
Honolulu International Airport	Honolulu International Airport
Lagoon Drive	Aolele Street and Lagoon Drive

In total, 24 intersections were analyzed in this section. These intersections cover both of the proposed alignment alternatives along Salt Lake Boulevard and the Airport. The results of the analysis can be found in Table 3-30.

Table 3-30: Existing Intersection Levels of Service—Aloha Stadium to Middle Street

Intersection				Control*	Existing Year 2007			
					A.M. Peak Hour Delay (sec) LOS		P.M. Peak Hour Delay (sec) LOS	
#	Intersections Along Alignment							
62	Kamehameha Highway	&	Salt Lake Boulevard	S	10	A	14	B
63	Kamehameha Highway	&	Admiral Bernard Chick Clarey Bridge	S	32	C	18	B
64	Kamehameha Highway	&	Radford Drive	S	56	E	103	F
65	Kamehameha Highway	&	Center Drive	S	25	C	11	B
66	Kamehameha Highway	&	Kalaloa Street/Arizona Memorial Place	S	10	A	8	A
67	Kamehameha Highway	&	Arizona Road/Hālawa Drive	S	11	B	25	C
68	Salt Lake Boulevard	&	Kalaloa Street	S	9	A	7	A
69	Salt Lake Boulevard	&	Kahuapa'ani Street	S	58	E	97	F
70	Salt Lake Boulevard	&	Luapele Drive	S	10	A	23	C
71	Salt Lake Boulevard	&	Ala Oli Street	S	22	C	14	B
72	Salt Lake Boulevard	&	Bougainville Drive	S	27	C	41	D
73	Salt Lake Boulevard	&	Ala Liliko'i Street	S	32	C	26	C
74	Salt Lake Boulevard	&	Arizona Road	S	37	D	27	C
75	Salt Lake Boulevard	&	Peltier Avenue	S	15	B	16	B
76	Salt Lake Boulevard	&	Ala Napunani Street	S	28	C	50	D
77	Salt Lake Boulevard	&	Pu'uloa Road	S	64	E	240	F
78	Nimitz Highway	&	Aolele Street	S	23	C	31	C
79	Aolele Street	&	Aolele Street (on the 'Ewa side of the airport)	¹ TWSC	9	A	10	A
80	Lagoon Drive	&	Aolele Street	S	33	C	28	C
#	Intersections Off Alignment							
81	Bougainville Drive	&	Radford Drive	S	55	D	76	E
82	Ala 'Ilima Street	&	Ala Liliko'i Street	S	35	C	27	C
83	Pūkōloa Street	&	Māpunapuna Road	S	17	B	28	C
84	Pūkōloa Street	&	Ahua Street	S	11	B	9	A
85	North Nimitz Highway	&	Pu'uloa Road	S	47	D	77	E

*S = Signal TWSC = Two-way stop control.

¹ Intersection is controlled by stop sign(s). Analysis was done using Highway Capacity Manual stop-controlled methodology. For two-way controlled intersections, the LOS and delay in seconds for the worst movement are reported.

Salt Lake Alternative

Two intersections along the proposed Salt Lake Boulevard alignment are currently operating at poor levels of service (LOS E or F) during both the a.m. and p.m. peak hours. As shown in Table 3-30, they are:

- Salt Lake Boulevard and Kahuapaʻani Street (Intersection #69)
- Salt Lake Boulevard and Puʻuloa Road (Intersection #77)

The proposed fixed guideway facility along the Salt Lake alignment varies in elevation and width. Salt Lake Boulevard provides four to six travel lanes, except between Lawehana Street and Ala Lilikoʻi Street where it acts as a two-lane collector providing access to many residential neighborhoods. Many signalized intersections on Salt Lake Boulevard are currently operating at acceptable conditions, except near the Market Place at Kahuapaʻani Street (where one of the stations is proposed) and at Puʻuloa Road. Traffic operating conditions near the proposed Salt Lake Station at Ala Nioi Place are generally acceptable (LOS D or better).

The H-1 Freeway/Kamehameha Highway/Salt Lake Boulevard interchanges create high travel speeds near Aloha Stadium. Because traffic counts were conducted on a typical weekday (in the absence of a major event at the Aloha Stadium), the Kamehameha Highway and Salt Lake Boulevard intersection is shown in the analysis as operating at an acceptable LOS during both peak hours (LOS A in the a.m. peak hour and LOS B in the p.m. peak hour).

Airport Alternative

Along the Airport alignment, all stations except the Lagoon Drive Station are adjacent to regional destinations (e.g., Pearl Harbor Naval Base, Arizona Memorial, and Honolulu International Airport). Along this proposed alignment, Kamehameha Highway provides substantial vehicle-carrying capacity (up to six travel lanes). The analysis determined that the following three intersections at or near the Airport alignment operate at poor LOS (LOS E or F) during one or both peak hours:

- Kamehameha Highway and Radford Drive (Intersection #64)
- Bougainville Drive and Radford Drive (Intersection #81)
- Nimitz Highway and Puʻuloa Road (Intersection #85)

Radford Drive is a four-lane facility that provides major automobile connection to the Salt Lake communities and the Naval Base on the makai side of Kamehameha Highway. The large volume of turning movements results in poor LOS on Radford Drive and at Bougainville Drive where they connect to Kamehameha Highway.

The intersections close to Honolulu International Airport generally operate at LOS D or better on a typical weekday, except where heavy left-turn movements produce long queues on Puʻuloa Road and Nimitz Highway. Puʻuloa Road also acts as a major thoroughfare that connects industrial areas and high-density residential communities to Nimitz Highway and Moanalua Freeway.

Middle Street to Iwilei

This section of the proposed alignment focuses on the Middle Street to Iwilei Station area and includes the fixed guideway stations identified in Table 3-31.

Table 3-31: Middle Street to Iwilei Fixed Guideway Stations

Fixed Guideway Stations	Cross Streets
Middle Street	Kamehameha Highway at Middle Street Transit Center
Kalihi	Dillingham Boulevard at Mokauea Street
Kapālama	Dillingham Boulevard at Kōkea Street

Table 3-32 presents a LOS analysis for 26 intersections on or around the alignment in this section. Figure 3-27 shows the LOS at the intersections analyzed. As shown in the table and figure, the intersections adjacent to the three proposed stations on Kamehameha Highway and Dillingham Boulevard are generally operating at acceptable LOS for urban areas. The Dillingham Boulevard/North King Street intersection, located on the alignment, currently operates at a poor LOS E during both the a.m. and p.m. peak hours.

The intersections not directly on the alignment operate at similar LOS. However, the following three locations operate at a poor level of service (LOS E) during both the a.m. or p.m. peak hour:

- North King Street & and North Beretania Street (Intersection #98)
- North King Street and Kalihi Street (Intersection #101)
- North Nimitz Highway and Waiakamilo Road (Intersection #104)

This section of the alignment is within the western edge of Honolulu’s Primary Urban Center (PUC). Although the primary roadways in the area (Kamehameha Highway, Dillingham Boulevard and Nimitz Highway) carry substantial volumes of traffic into and out of the Downtown area, they also serve a large number of non-residential developments throughout this section of the study area. Land use along Dillingham Boulevard includes a broad range of mixed uses including retail, industrial, and institutional, which generate substantial traffic volumes even during the midday period.

Nimitz Highway serves many industrial uses, including those associated with Honolulu Harbor. The LOS along these two corridors is relatively good, but traffic flow is very uneven given the nature of the land use in the area, the volume of cross-street traffic, and traffic making turns off the main east-west roadways.

Table 3-32: Existing Intersection Levels of Service—Middle Street to Iwilei

Intersection		Control*	Existing Year 2007						
			A.M. Peak Hour Delay (sec) LOS		P.M. Peak Hour Delay (sec) LOS				
#	Intersections Along Alignment								
86	Kamehameha Highway	&	Middle Street	S	19	B	17	B	
87	Kamehameha Highway	&	Pedestrian Crossing Koko Head of Kalihi Stream/ West of O'ahu Community Correction Center	S	11	B	11	B	
88	Kamehameha Highway	&	Laumaka Street	S	5	A	5	A	
89	Dillingham Boulevard	&	Pu'u hale Road	S	16	B	19	B	
90	Dillingham Boulevard	&	Mokaeua Street	S	20	B	26	C	
91	Dillingham Boulevard	&	Kalihi Street	S	27	C	22	C	
92	Dillingham Boulevard	&	Waiakamilo Road	S	26	C	29	C	
93	Dillingham Boulevard	&	Kohou Street	S	16	B	11	B	
94	Dillingham Boulevard	&	Kōkea Street	S	14	B	15	B	
95	Dillingham Boulevard	&	Alakawa Street	S	22	C	47	D	
96	Dillingham Boulevard	&	Ka'aahi Street.	S	5	A	5	A	
97	Dillingham Boulevard	&	North King Street	S	69	E	62	E	
#	Intersections Off Alignment								
98	North King Street	&	N. Beretania Street	S	54	D	113	F	
99	North King Street	&	Middle Street	S	15	B	12	B	
100	North King Street	&	Mokaeua Street	S	10	B	34	C	
101	North King Street	&	Kalihi Street	S	39	D	62	E	
102	North Nimitz Highway	&	Sand Island Access Road	S	52	D	36	D	
103	North Nimitz Highway	&	Pu'u hale Road	S	21	C	25	C	
104	North Nimitz Highway	&	Waiakamilo Road	S	60	E	43	D	
105	North King Street	&	Kohou Street	S	8	A	9	A	
106	North King Street	&	Kōkea Street	S	7	A	11	B	
107	Nimitz Highway	&	Mokaeua Street	S	18	B	11	B	
108	Nimitz Highway	&	Kalihi Street	S	35	D	45	D	
109	Nimitz Highway	&	Alakawa Street	S	42	D	50	D	
110	North King Street	&	Iwilei Road	S	24	C	26	C	
111	Iwilei Road	&	Kūwili Street	¹ TWSC	15	C	19	C	

*S = Signal TWSC = Two-way stop control

¹ Intersection is controlled by stop sign(s). Analysis was done using Highway Capacity Manual stop-controlled methodology. For two-way stop-controlled intersections, the LOS and delay in seconds for the worst movement are reported.

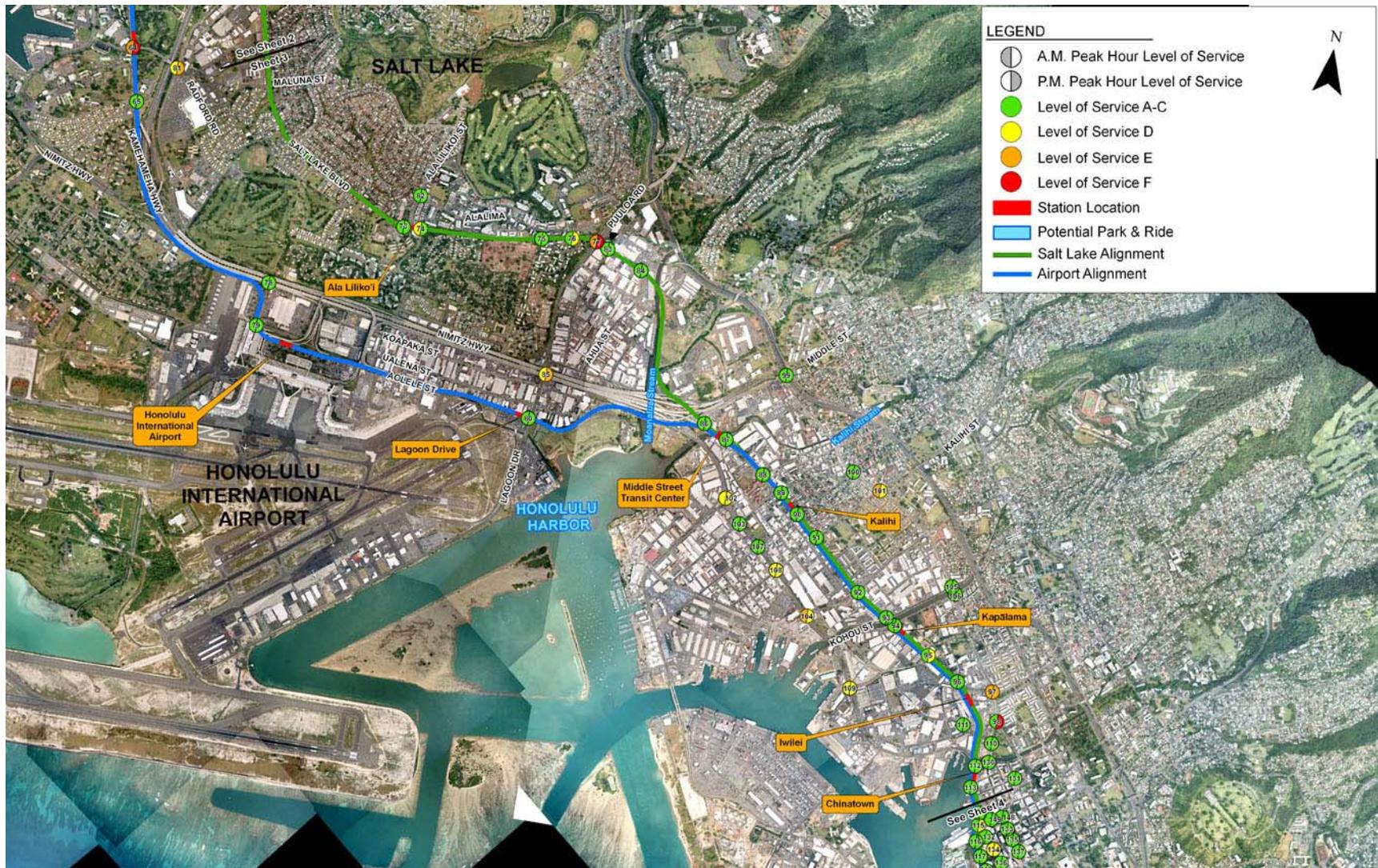


Figure 3-27: Level-of-Service—Salt Lake and Airport to Iwilei

Observations taken in the field indicate that on Dillingham Boulevard, vehicles turning into the access driveways of the Costco retail establishments on the makai side of Dillingham Boulevard create substantial queues that often spill back to Ka'aahi Street during the p.m. peak hour. This happens on the stretch of Dillingham Boulevard between Alakawa Street and Ka'aahi Street. A bottleneck is essentially created, which limits through traffic because of the absence of a Koko Head-bound right-turn pocket and the presence of a queue for 'Ewa-bound left-turn movement, which exceeds the existing turn pocket's capacity.

Because the intersection delay analysis was performed based on traffic volumes getting through the intersection of Dillingham Boulevard at Ka'aahi Boulevard, the actual LOS may be worse than the reported LOS A.

Iwilei to Ala Moana Center

This section of the proposed alignment focuses on the Iwilei, Downtown Honolulu, and Ala Moana areas. The fixed guideway stations identified in Table 3-33 are addressed in the analysis.

Table 3-33: Downtown Fixed Guideway Stations

Fixed Guideway Stations	Cross Streets
Iwilei	Ka'aahi Street
Chinatown	Nimitz Highway at Kekaulike Street
Downtown	Nimitz Highway at Fort Street
Civic Center	Halekauwila Street at South Street
Kaka'ako	Halekauwila Street at Ward Avenue
Ala Moana Center	Kona Street at Ke'eaumoku Street

In total, 51 intersections were analyzed along the proposed alignment. The South Nimitz Highway and Halekauwila Street intersection (#119) is currently operating at a poor LOS (LOS F), as shown in Table 3-34 and Figure 3-28.

At locations not directly on the alignment, the following two intersections are operating at poor LOS (LOS E or F) during one or both peak hours:

- Ward Avenue and Kapi'olani Boulevard (Intersection #154)
- Kapi'olani Boulevard and Ke'eaumoku Street (Intersection #161)

As a result of their location near Downtown Honolulu, these streets tend to carry relatively high volumes of traffic each day, but volumes are well distributed over the entire day as opposed to concentrating during peak periods, as tends to occur on roadways in the outer areas.

Table3-34: Existing Intersection Levels of Service—Iwilei to Ala Moana

Intersection		Control*		Existing Year 2007					
				A.M. Peak Hour Delay (sec) LOS		P.M. Peak Hour Delay (sec) LOS			
#	Intersections Along Alignment								
112	N Nimitz Highway	&	River Street		S	8	A	8	A
113	N Nimitz Highway	&	Kekaulike Street	¹	TWSC	10	A	10	A
114	Nimitz Highway	&	Nu'uau Avenue		S	6	A	10	A
115	S Nimitz Highway	&	Bethel Street		S	8	A	9	A
116	S Nimitz Highway	&	Fort Street Mall		S	8	A	4	A
117	S Nimitz Highway	&	Bishop Street		S	10	B	10	A
118	S Nimitz Highway	&	Alakea Street		S	9	A	8	A
119	S Nimitz Highway	&	Halekauwila Street		S	82	F	44	D
120	Punchbowl Street	&	Halekauwila Street		S	15	B	18	B
121	South Street	&	Halekauwila Street		S	23	C	28	C
122	Halekauwila Street	&	Keawe Street	¹	AWSC	11	B	11	B
123	Cooke Street	&	Halekauwila Street	¹	AWSC	13	B	14	B
124	Ward Avenue	&	Halekauwila Street		S	5	A	11	B
125	Queen Street	&	Cummins Street	¹	TWSC	11	B	12	B
126	Kamake'e Street	&	Queen Street	¹	AWSC	11	B	18	C
127	Pi'ikoi Street	&	Kona Street		S	11	B	17	B
128	Kona Street	&	Ke'eaumoku Street	¹²	AWSC	7	A	13	B
129	Kona Street	&	Kāheka Street	¹	AWSC	11	B	29	D
#	Intersections Off Alignment								
130	North King Street	&	River Street		S	6	A	9	A
131	North King Street	&	Kekaulike Street		S	9	A	5	A
132	Queen Street	&	Fort Street Mall		F/Y	10	A	11	B
133	South King Street	&	Fort Street Mall		S	5	A	2	A
134	Queen Street	&	Bishop Street		S	40	D	36	D
135	South King Street	&	Bishop Street		S	15	B	13	B
136	Queen Street	&	Alakea Street		S	22	C	22	C
137	South King Street	&	Alakea Street		S	10	A	14	B
138	Punchbowl Street	&	Queen Street		S	16	B	21	C
139	Ala Moana Boulevard	&	Punchbowl Street		S	10	A	16	B
140	South Street	&	Queen Street		S	34	C	33	C
141	South Street	&	Pohukaina Street		S	30	C	28	C
142	Ala Moana Boulevard	&	South Street		S	12	B	15	B
143	Pohukaina Street	&	Keawe Street	¹	AWSC	16	C	14	B
144	Ala Moana Boulevard	&	Keawe Street		S	16	B	34	C

Table3-34: Existing Intersection Levels of Service—Iwilei to Ala Moana (continued)

Intersection				Control*		Existing Year 2007			
						A.M. Peak Hour Delay (sec) LOS		P.M. Peak Hour Delay (sec) LOS	
145	Ala Moana Boulevard	&	Coral Street		S	18	B	11	B
146	Ala Moana Boulevard	&	Cooke Street		S	11	B	11	B
147	South King Street	&	Kapi'olani Boulevard/ South Street		S	21	C	27	C
148	Bethel Street	&	King Street		S	13	B	18	B
149	Bethel Street	&	Merchant Street		S	11	B	11	B
150	Ala Moana Boulevard	&	Queen Street		S	13	B	46	D
151	Ward Avenue	&	Ala Moana Boulevard		S	25	C	33	C
152	Ward Avenue	&	Auahi Street		S	16	B	19	B
153	Ward Avenue	&	Queen Street		S	26	C	42	D
154	Ward Avenue	&	Kapi'olani Boulevard		S	72	E	80	E
155	Kamake'e Street	&	Ala Moana Boulevard		S	16	B	28	C
156	Kamake'e Street	&	Auahi Street		S	9	A	12	B
157	Kamake'e Street	&	Kapi'olani Boulevard		S	8	A	16	B
158	Pi'ikoi Street	&	Waimanu Street		S	23	C	24	C
159	Pi'ikoi Street	&	Kapi'olani Boulevard		S	16	B	20	C
160	Kapi'olani Boulevard	&	Kona Iki Street		S	5	A	12	B
161	Kapi'olani Boulevard	&	Ke'eaumoku Street		S	21	C	115	F
162	Kapi'olani Boulevard	&	Kāheka Street		S	13	B	22	C

*S = Signal AWSC = All-way stop control TWSC = Two-way stop control F/Y=Free-flow, only yield to pedestrians

¹ Intersection is controlled by stop sign(s). Analysis was done using Highway Capacity Manual stop-controlled methodology. For all-way-stop-controlled intersections, average vehicular control delay over all approaches in seconds is reported. For two-way controlled intersections, the LOS and delay in seconds for the worst movement are reported.

² This intersection is under construction. The LOS calculation is based on the current four-way stop control with one EB lane, one 1 WB lane, and two SB lanes.

Most roadways in this section are used for access to land use and circulation around the area rather than for long-distance commute travel. As a result, traffic flow is very slow and generates many stops and delays for motorists. However, most intersections operate at an acceptable LOS (i.e., LOS D or better) during peak periods. Even heavily congested areas have mostly acceptable LOS despite frequent (although short) stops and delays.

In Downtown Honolulu, the acceptable LOS reported for Nimitz Highway on intersections between River Street and Alakea Street (Intersections #112 through 118) may not represent actual traffic conditions. Field observations indicated that Koko Head-bound traffic on the Nimitz Highway between River and Alakea Streets operates under stop-and-go conditions during the a.m. peak hour and exhibits similar patterns 'Ewa-bound during the p.m. peak hour.

Traffic congestion appears to occur because of many left-turn movements at Bethel, Alakea, and Bishop Streets, which creates delays for other vehicles on the Nimitz Highway. Because the intersection delay analysis was performed based on traffic volumes that were able to pass through these restricted locations on the Nimitz Highway, rather than on the actual demand volume, the actual LOS may be worse than the reported LOS A.

Heavy congestion was also observed on King Street near the Chinatown area. Substantial pedestrian movements conflict with vehicle traffic at this location on King Street, limiting the number of vehicles traveling Koko Head-bound.

Planned Extension

The first project extends from Kapolei to Ala Moana. In anticipation of possible planned extensions, traffic analyses were conducted along two additional corridors: a University Avenue Planned Extension to UH Mānoa Lower Campus, and a Waikīkī Planned Extension.

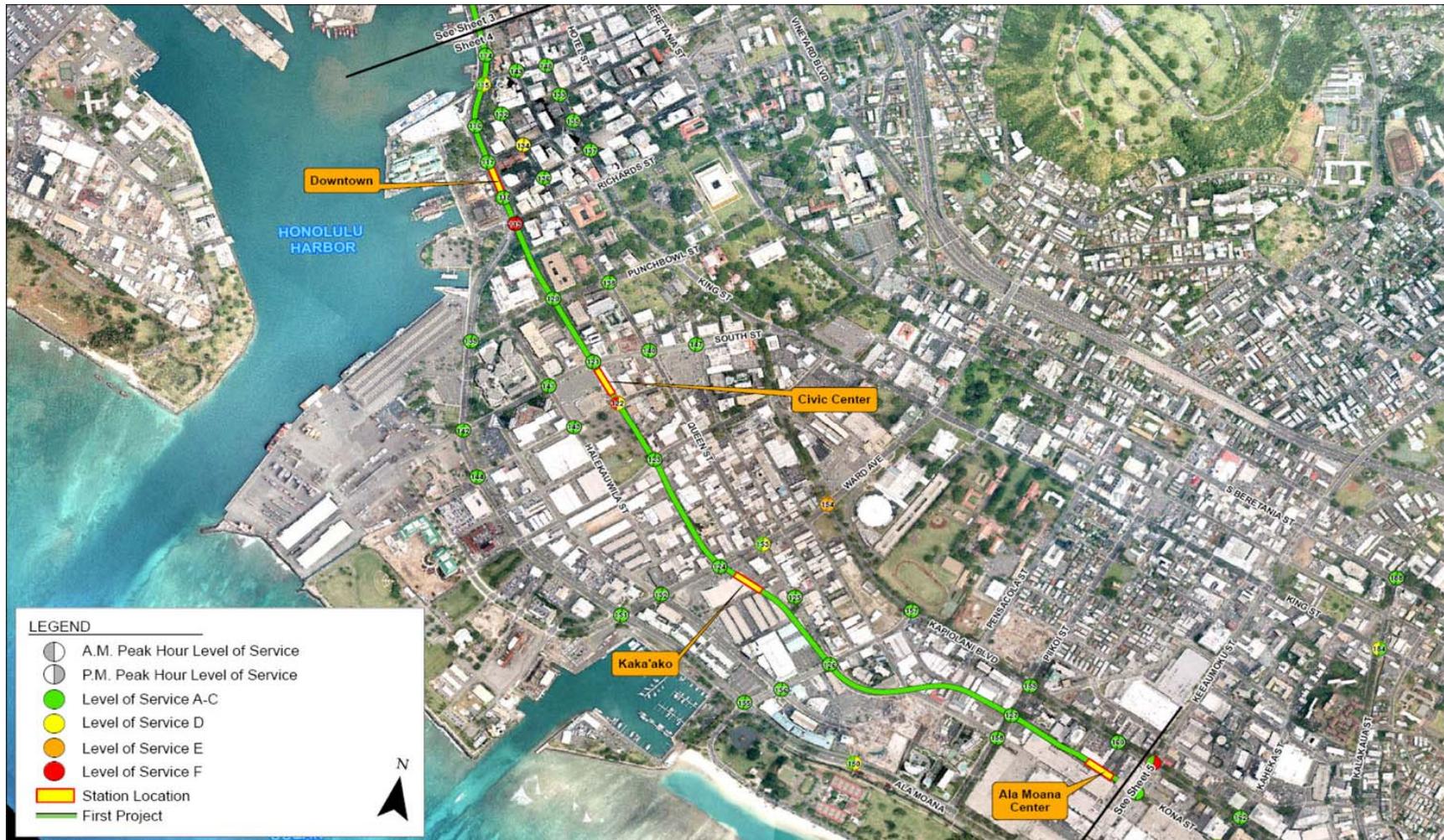


Figure 3-28: Existing Level-of-Service—Downtown to Ala Moana

University Avenue Planned Extension

The University Avenue Planned Extension would begin at Ala Moana Center Station, travel along Kapi'olani Boulevard to University Avenue, and then terminate at the UH Mānoa Lower Campus. Four fixed guideway stations are proposed along this portion of the alignment as identified in Table 3-35.

Table 3-35: University Avenue Planned Extension Fixed Guideway Stations

Fixed Guideway Stations	Cross Streets
McCully (planned extension)	Kapi'olani Boulevard and McCully Street
Date Street (planned extension)	University Avenue and Date Street
Mō'ili'iili (planned extension)	University Avenue and South King Street
UH Mānoa (planned extension)	UH Lower Campus

In total, 29 intersections were selected for existing conditions analysis for the segment between the Ala Moana Center and UH Mānoa. Of these intersections, 13 would be located directly on the alignment and the others in close proximity. As shown in Table 3-36 and Figure 3-29, five intersections along the planned extension currently operate at poor LOS (LOS E or F) during one or both peak hours. The primary congestion occurs at the following locations:

- Kapi'olani Boulevard at Kalākaua Avenue (Intersection #164)
- Kalākaua Avenue at Ala Moana Boulevard/Pau Street (Intersection #170)
- University Avenue at Date Street (Intersection #172)
- University Avenue at Ku'ilei Lane (Intersection #173)
- University Avenue and South King Street (Intersection #174)

At locations not directly on the planned extension, four intersections currently operate at poor LOS (LOS E or F) during either or both peak hours. Major delays occur at the following intersections:

- Kapi'olani Boulevard and Kamoku Street/Citron Street/ Ka'aloa Street/ Date Street (Intersection #178)
- McCully Street and Lime Street (Intersection #181)
- South Beretania Street and McCully Street (Intersection #189)
- University Avenue and Dole Street (Intersection #191)

Table 3-36: Existing Intersection Levels of Service—University of Hawai‘i Mānoa Planned Extension

Intersection				Control*	Existing Year 2007				
					A.M. Peak Hour Delay (sec) LOS		P.M. Peak Hour Delay (sec) LOS		
#	INTERSECTIONS ALONG ALIGNMENT								
163	Kapi‘olani Boulevard	&	Atkinson Drive		S	49	D	29	C
164	Kapi‘olani Boulevard	&	Kalākaua Avenue		S	55	D	69	E
165	Kapi‘olani Boulevard	&	Pumehana Street	¹	TWSC	22	C	24	C
166	Kapi‘olani Boulevard	&	McCully Street		S	54	D	45	D
167	Kapi‘olani Boulevard	&	Wiliwili Street	¹	TWSC	15	C	11	B
168	Kapi‘olani Boulevard	&	Pā‘ani Street	¹	TWSC	18	C	25	C
169	Kalākaua Avenue	&	Ala Wai Boulevard		S	41	D	18	B
170	Kalākaua Avenue	&	Ala Moana Boulevard/Pau Street		S	31	C	62	E
171	University Avenue	&	Kapi‘olani Boulevard		S	41	D	34	C
172	University Avenue	&	Date Street		S	71	E	101	F
173	University Avenue	&	Ku‘ilei Lane	¹	TWSC	44	E	83	F
174	University Avenue	&	South King Street		S	96	F	95	F
175	University Avenue	&	Varsity Place		S	16	B	15	B
#	INTERSECTIONS OFF ALIGNMENT								
176	Ala Moana Boulevard	&	Atkinson Drive		S	37	D	34	C
177	Atkinson Drive	&	Mahukona Street		S	19	B	31	C
178	Kapi‘olani Boulevard	&	Kamoku Street/Citron Street/Ka‘aloha Street/ Date Street	²	S	225	F	224	F
179	Kapi‘olani Boulevard	&	Wai‘aka Road		S	14	B	18	B
180	Kapi‘olani Boulevard	&	Kapahulu Avenue		S	28	C	13	B
181	McCully Street	&	Lime Street	¹	TWSC	24	C	43	E
182	McCully Street	&	Ala Wai Boulevard		S	19	B	14	B
183	McCully Street	&	Kalākaua Avenue		S	13	B	9	A
184	South King Street	&	Kalākaua Avenue		S	35	D	20	C
185	South King Street	&	McCully Street		S	17	B	15	B
186	South King Street	&	Isenberg Street		S	16	B	16	B
187	S. Beretania Street	&	Isenberg Street		S	28	C	30	C
188	S. Beretania Street	&	Kalākaua Avenue		S	26	C	25	C
189	S. Beretania Street	&	McCully Street		S	59	E	16	B
190	University Avenue	&	Kapa‘akea Lane	¹	TWSC	18	C	15	C
191	University Avenue	&	Dole Street		S	97	F	93	F

*S = Signal TWSC = Two-way stop control

¹ Intersection is controlled by stop sign(s). Analysis was done using Highway Capacity Manual stop-controlled methodology. For two-way stop-controlled intersections, the LOS and delay in seconds for the worst movement are reported.

² This is a six-leg intersection. Five of the six legs are controlled by signals, with the exception of a stop control for Kamoku Street north of Kapi‘olani Boulevard. The LOS calculation is based on the signalized approaches.

Because this section of the study corridor serves several functions, it attracts substantial traffic volumes on all of its major roadways and cross streets. This section is used as a commute route by residents of East Honolulu, which results in heavy peak hour traffic volumes with poor LOS. It also serves as a place of residence for many people in Honolulu, with a substantial number of high-density condominiums and older low-rise but high-density housing areas. This area also has a large number of commercial developments, including a substantial number of retail facilities. In addition, the area serves as the gateway to the UH Mānoa campus. These factors all tend to result in uneven traffic flow with substantial volumes using some of the intersections and roadways, resulting in several locations operating at unacceptable LOS during peak periods.

The traffic on University Avenue was observed to be operating at poor LOS because of the substantial volume of left-turn movements. Frequent transit service and curbside automobile maneuvers on University Avenue interrupt the traffic flow and sometimes result in delays to vehicles.

Waikīkī Planned Extension

The Waikīkī Planned Extension alignment would begin at Ala Moana Center Station, travel in a Koko Head direction to the Kalākaua Avenue/Kapi’olani Boulevard intersection, proceed along Kalākaua and Kūhiō Avenues, and terminate at Ka’iulani Avenue. The fixed guideway stations identified in Table 3-37 were addressed by the analysis.

Table 3-37: Waikīkī Planned Extension Fixed Guideway Stations

Fixed Guideway Stations	Cross Streets
Convention Center (planned extension)	Convention Center from Kalākaua Avenue
Kālainmoku Street (planned extension)	Kūhiō Avenue and Kālainmoku Street
Lili’uokalani Avenue (planned extension)	Kūhiō Avenue and Lili’uokalani Avenue

In total, 24 intersections were selected along this planned extension. Of these intersections, nine are located along the alignment and the remaining intersections are in close proximity to the proposed transit service. The complete LOS analysis for these 24 locations is shown in Table 3-38 and Figure 3-28.

Results indicate that during peak traffic hours, all intersections along the planned extension are currently operating at LOS C or better during both the a.m. and p.m. peak hours. However, at locations not directly on the alignment, the following three intersections are currently operating at a poor LOS F during one peak hour. Poor operation of these locations can be attributed to the heavy volume of left-turn movements:

Table 3-38: Existing Intersection Levels of Service—Waikīkī Planned Extension

Intersection				Control*	Existing Year 2007				
					A.M. Peak Hour Delay (sec) LOS		P.M. Peak Hour Delay (sec) LOS		
#	Intersections Along Alignment								
192	Kalākaua Avenue	&	Kuamo'o Street/Kūhiō Avenue	¹	F/Y	17	C	16	C
193	Kūhiō Avenue	&	'Ōlohana Street		S	27	C	27	C
194	Kūhiō Avenue	&	Kālainmoku Street		S	13	B	25	C
195	Kūhiō Avenue	&	Lewers Street		S	12	B	18	B
196	Kūhiō Avenue	&	Kanekapolei Street		S	18	B	16	B
197	Kūhiō Avenue	&	Uluniu Avenue		S	0.2	A	9	A
198	Kūhiō Avenue	&	Lili'uokalani Avenue		S	13	B	20	B
199	Kūhiō Avenue	&	'Ōhua Avenue		S	12	B	12	B
200	Kūhiō Avenue	&	Paoakalani Avenue		S	9	A	11	B
#	Intersections Off Alignment								
201	Ala Moana Boulevard	&	Hobron Lane		S	74	E	136	F
202	Ala Moana Boulevard	&	'Ena Road/Kālia Street		S	49	D	96	F
203	Ala Wai Boulevard	&	'Ōlohana Street	¹	F/Y	1	A	1	A
204	Ala Wai Boulevard	&	Kālainmoku Street		S	6	A	7	A
205	Ala Wai Boulevard	&	Lewers Street		S	19	B	19	B
206	Ala Wai Boulevard	&	Lili'uokalani Avenue		S	10	A	8	A
207	Ala Wai Boulevard	&	'Ōhua Avenue	¹	F/Y	1	A	2	A
208	Ala Wai Boulevard	&	Paoakalani Avenue		S	12	B	10	A
209	Ala Wai Boulevard	&	Kapahulu Avenue		S	83	F	22	C
210	Kalākaua Avenue	&	'Ōlohana Street		S	4	A	7	A
211	Kalākaua Avenue	&	Kālainmoku Street		S	9	A	17	B
212	Kalākaua Avenue	&	Lili'uokalani Avenue		S	8	A	5	A
213	Kalākaua Avenue	&	'Ōhua Avenue		S	45	D	7	A
214	Kalākaua Avenue	&	Kapahulu Avenue		S	11	B	29	C
215	Kūhiō Avenue	&	Kapahulu Avenue		S	19	B	18	B

*S = Signal F/Y=Free-flow, only yield to pedestrians

¹ Intersection is uncontrolled. Analysis was done using Highway Capacity Manual stop-controlled methodology, assuming traffic yielding to pedestrians on the crosswalks. The LOS and delay in seconds for the worst movement are reported.

- Ala Moana Boulevard and Hobron Lane (Intersection #201)
- Ala Moana Boulevard and 'Ena Road/Kālia Street (Intersection #202)
- Ala Wai Boulevard and Kapahulu Avenue (Intersection #209)

Kūhiō Street is the major two-way corridor between the one-way corridors of Ala Wai Boulevard and Kalākaua Avenue. The hotel and commercial land uses in this area are served by a substantial number of transit/tour buses. Because this area has few designated bus pullouts, frequent bus stops delay the traffic flow in curbside lanes. Closely spaced traffic signals and heavy pedestrian activity limit vehicle speeds on Kūhiō Street.

4 ***Future Conditions and Effects—No Build Alternative***

No change

5 ***Future Build Alternatives Conditions and Performance***

Change The following is a modification of and replaces
Table 5-27—Salt Lake Boulevard Intersection Analysis

Table 5-27: Salt Lake Boulevard Intersection Analysis

Intersection			Control	Peak Hour	Year 2007		2030 No Build		Salt Lake Alternative			
					Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Project Delay Change	Effect
Salt Lake Boulevard	&	Kahuapa'ani Street	Signal	A.M.	58	E	140	F	62	E	-78	No
				P.M.	97	F	370	F	138	F	-232	No
Salt Lake Boulevard	&	Luapele Drive	Signal	A.M.	10	A	15	B	10	A	-5	No
				P.M.	20	C	23	C	10	A	-13	No
Salt Lake Boulevard	&	Ala Oli Street	Signal	A.M.	22	C	24	C	23	C	-1	No
				P.M.	14	B	18	B	16	B	-2	No
Salt Lake Boulevard	&	Bougainville Drive	Signal	A.M.	27	C	28	C	27	C	-1	No
				P.M.	41	D	48	D	36	D	-12	No

Change The following is a modification of and replaces the sixth paragraph (page 5-78) of **Section 5.5.3—Intersection LOS Analysis Relating to Guideway Column Placement**

The results indicate that two of the four intersections are projected to operate at LOS D or better, which is considered an acceptable LOS for O’ahu under 2030 No Build traffic conditions. The following intersections are projected to operate at LOS F during one or both peak hours:

- Salt Lake Boulevard and Kahuapa’ani Street
- Salt Lake Boulevard and Luapele Drive

Change The following is a modification of and replaces **Section 5.6.2 Traffic Effects in Station Areas with Park-and-Ride Facilities**

5.6.2 Traffic Effects in Station Areas with Park-and-Ride Facilities

Four park-and-ride facilities are proposed (Table 5-34). The table includes the station location, proposed number of parking spaces, and total number of feeder buses in the a.m. and p.m. peak hour. Potential effects would be from auto traffic accessing the park-and-ride facilities (parking or dropping passengers) as well as buses serving the station.

Table 5-34: Park-and-Ride Stations

Park-and-Ride Station Location	Proposed Number of Parking Spaces	Total Number of Buses in A.M. Peak hour	Total Number of Buses in P.M. Peak hour
East Kapolei	900	42	42
UH West O’ahu	1,000	20	20
Pearl Highlands	1,600	62	62
Aloha Stadium	600	42-46*	42-46*

*Varies between the Build Alternatives

Park-and-ride facilities are generally located in areas containing vacant or undeveloped land. For modeling purposes, it was assumed that fixed guideway riders would not be charged for using these park-and-ride facilities.

The following sections discuss estimated effects of additional traffic generated by park-and-ride facilities, including the operational effect at key intersections in each station area.

East Kapolei and University of Hawai'i West O'ahu Stations

Table 5-35 summarizes the a.m. and p.m. peak hour trips at the East Kapolei and UH West O'ahu Stations with park-and-ride facilities. These stations are proposed along the future North-South Road between Farrington Highway and Franklin D. Roosevelt (Roosevelt) Avenue:

- **East Kapolei Station**—the East Kapolei Station would be the terminus station for all three Build Alternatives. This station would have an elevated platform and is proposed on the 'Ewa side of North-South Road near a new East-West Road for the Ho'opili area. Approximately 900 parking spaces are proposed. Access to this park-and-ride facility is proposed via the Ho'opili East-West Road. Seven bus routes with 42 transit vehicles would serve the station during each a.m. and p.m. peak hour. This station is estimated to generate approximately 420 park-and-ride and kiss-and-ride vehicular trips in the a.m. peak hour.
- **UH West O'ahu Station**—this station would be near North-South Road on the UH West O'ahu campus and has been proposed for all the three Build Alternatives. Approximately 1,000 parking spaces would be provided. Five bus routes with 21 transit vehicles would serve the station during a.m. and p.m. peak hours. This station is estimated to generate approximately 240 park-and-ride and kiss-and-ride vehicular trips during the a.m. peak hour.

Table 5-35: Peak Hour Trip Generation—East Kapolei and UH West O'ahu Stations

Type Peak Hour Stations/Alternatives	Park-and-Ride				Kiss-and-Ride				Transit Vehicle Trips			
	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Salt Lake												
East Kapolei Station	298	0	0	298	60	60	60	60	21	21	21	21
UH West O'ahu	145	0	0	145	45	45	45	45	21	21	21	21
Airport												
East Kapolei Station	299	0	0	299	59	59	59	59	21	21	21	21
UH West O'ahu	144	0	0	144	46	46	46	46	21	21	21	21

As part of the ORTP and Ho'opili Development Plan, several access roadways or connectors would be constructed in anticipation of UH West O'ahu's development and new commercial and residential development in the East Kapolei area. Traffic analyses were conducted for both proposed park-and-ride stations. The following future or reconfigured intersections were selected for analysis and are adjacent to the two stations:

- North-South Road and Roosevelt Avenue (future intersection)
- North-South Road and Kapolei Parkway (future intersection)
- North-South Road and Road B (future intersection)

- North-South Road and East-West Road (future intersection)
- Old Fort Weaver Road and Fort Weaver/'A'awa Drive (reconfigured intersection)
- Farrington Highway and 'Ewa Road (future intersection)
- Farrington Highway and North-South Road (future intersection)
- Farrington Highway and Old Fort Weaver Road (existing intersection)
- Farrington Highway and Kunia (Highway 76) northbound on-ramp (existing intersection)
- Farrington Highway and Kunia Laulaunui Street (existing intersection)

Under 2030 No Build conditions, five of the seven intersections on Farrington Highway and on Fort Weaver Road would operate at unacceptable LOS E or F during one or both peak hours. The results for the 2030 No Build Alternative and Build Alternatives are shown in Table 5-36. The Airport & Salt Lake Build Alternative effects would be similar to the other Build Alternatives. No substantial traffic effects are projected for intersections in the vicinity of the East Kapolei and UH West O'ahu stations.

Table 5-36: East Kapolei and UH West O'ahu Stations Intersection Analysis

Intersection	Control*	Peak Hour	2030 No Build		2030 Build Alternatives				
			Delay (sec)	LOS	Delay (sec)	LOS	Project Delay Change	Effect?	
Salt Lake Alternative									
Roosevelt Avenue & North-South Road ¹	S	A.M.	28	C	43	D	15	NO	
		P.M.	28	C	21	C	-7	NO	
Kapolei Parkway & North-South Road ²	S	A.M.	36	D	48	D	12	NO	
		P.M.	31	C	35	D	4	NO	
North-South Road & Road B ³	S	A.M.	55	D	51	D	-4	NO	
		P.M.	45	D	48	D	3	NO	
North-South Road & East-West Road ⁴	S	A.M.	34	C	41	D	7	NO	
		P.M.	36	D	41	D	5	NO	
Old Fort Weaver Road & Fort Weaver Road/A'awa Drive	S	A.M.	115	F	91	F	-24	NO	
		P.M.	68	E	58	E	-10	NO	
Farrington Highway & New 'Ewa Road ⁵	S	A.M.	56	E	38	D	-18	NO	
		P.M.	45	D	34	C	-11	NO	
Farrington Highway & North-South Road ⁴	S	AM	105	F	29	C	-76	NO	
		PM	41	D	41	D	0	NO	
Farrington Highway & Old Fort Weaver Road	TWSC	A.M.	>400	F	>400	F	<0 ⁶	NO	
		P.M.	>400	F	>400	F	<0 ⁶	NO	
Farrington Highway & Kunia (Hwy 76) NB On-Ramp	S	AM	5	A	5	A	0	NO	
		PM	2	A	2	A	0	NO	
Fort Weaver Road & Laulaunui Street	S	AM	131	F	115	F	-16	NO	
		PM	66	E	64	E	-2	NO	
Airport Alternative									
Roosevelt Avenue & North-South Road ¹	S	A.M.	28	C	43	D	15	NO	
		P.M.	28	C	31	C	3	NO	
Kapolei Parkway & North-South Road ²	S	A.M.	36	D	44	D	8	NO	
		P.M.	31	C	33	C	2	NO	
North-South Road & Road B ³	S	A.M.	55	D	52	D	-3	NO	
		P.M.	45	D	46	D	1	NO	
North-South Road & East-West Road ⁴	S	A.M.	34	C	40	D	6	NO	
		P.M.	36	D	41	D	5	NO	

Table 5-36: East Kapolei and UH West O’ahu Stations Intersection Analysis (continued)

Intersection		Control*	Peak Hour	2030 No Build		2030 Build Alternatives			
				Delay (sec)	LOS	Delay (sec)	LOS	Project Delay Change	Effect?
Old Fort Weaver Road	& Fort Weaver Road/A’awa Drive	S	A.M.	115	F	93	F	-22	NO
			P.M.	68	E	58	E	-10	NO
Farrington Highway	& New ‘Ewa Road ⁵	S	A.M.	56	E	36	C	-20	NO
			P.M.	45	D	42	D	-3	NO
Farrington Highway	& North-South Road ⁴	S	AM	105	F	28	C	-77	NO
			PM	41	D	45	D	4	NO
Farrington Highway	& Old Fort Weaver Road	TWSC	A.M.	>400	F	>400	F	<0 ⁶	NO
			P.M.	>400	F	>400	F	<0 ⁶	NO
Farrington Highway	& Kunia (Hwy 76) NB On-Ramp	S	AM	5	A	5	A	0	NO
			PM	2	A	2	A	0	NO
Fort Weaver Road	& Laulaunui Street	S	AM	131	F	131	F	-8	NO
			PM	66	E	61	E	-5	NO

Note: All intersections are new or modified.

* S = Signal-Controlled TWSC = Two-Way Stop-Controlled

¹ Lane geometry assumed—NB: one left-turn lane, one through lane, one right-turn lane; SB: one left-turn lane, one through lane, one right-turn lane; EB: one left-turn lane, two through lanes, one right-turn lane; westbound (WB): one left-turn lane, two through lanes, one right-turn lane.

² Lane geometry assumed—NB: one left-turn lane, three through lanes, one right-turn lane; SB: one left-turn lane, three through lanes, one right-turn lane; EB: one left-turn lane, two through lanes, one right-turn lane; WB: one left-turn lane, two through lanes, two right-turn lanes.

³ Future base lane configuration assumed for North-South Road at Road B: NB: single left-turn lane, three through lanes, single right turn lane; Southbound: dual left-turn lanes, three through lanes, single right-turn lane; Westbound: single left-turn lane, one through lane, dual right-turn lanes; EB: single left turn lane, one through lane, single right-turn lane.

⁴ Future base lane configuration assumed for North-South Road at East-West Connector Road: NB: one left-turn lane, three through lanes, one right-turn lane; SB: one left-turn lane, three through lanes, one right-turn lane; EB: one left-turn lane, one through lane, one right-turn lane; WB: two left-turn lanes, one through lane, one right-turn lane.

⁵ Future base lane configuration assumed for Farrington Highway at New ‘Ewa Road: NB: single left-turn lane, one shared through/right-turn lane, single right-turn lane; SB: single left-turn lane, one through lane, single right-turn lane; WB: dual left-turn lanes, two through lanes, single right-turn lane; EB: single left-turn lane, two through lanes, single right-turn lane.

⁶ Delay cannot be calculated. However, total volumes reduced with the build alternatives.

Pearl Highlands Station

The Pearl Highlands Station would be on Kamehameha Highway at the Kuala Street intersection adjacent to the shopping center. The proposed park-and-ride facility would be in the vacant 9-acre area near the Waipahu Interchange and Leeward Community College. Approximately 1,600 parking spaces are proposed for the park-and-ride structure, with the following multiple access points planned for this facility:

- An inbound-access-only ramp with direct connection from the H-2 Freeway
- A ramp with direct connection from Koko Head-bound lanes on Farrington Highway
- A signalized intersection on Kamehameha Highway with full access provided by reconfiguration of the existing stop-controlled intersection of Kamehameha Highway and Waihona Street
- A driveway with limited right-in and right-out access for 'Ewa-bound lanes on Farrington Highway (westbound) at Waiawa Road

Table 5-37 presents the estimated peak hour trips that may access this station. Eleven bus routes with approximately 62 transit vehicles are projected to serve this station area during both peak hours. It is estimated that this station may generate up to 740 park-and-ride and kiss-and-ride vehicular trips during the a.m. peak hour.

Table 5-37: Peak Hour Trip Generation—Pearl Highland Station

Type	Park-and-Ride				Kiss-and-Ride				Transit Vehicle Trips			
	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.	
Stations/Alternatives	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Salt Lake												
Pearl Highlands Station	563	0	0	563	112	112	112	112	47	15	15	47
Airport												
Pearl Highlands Station	549	0	0	549	112	112	112	112	47	15	15	47

Five intersections immediately adjacent to this station were selected for analysis:

- Farrington Highway and Waiawa Road eastbound (existing)
- Farrington Highway and Waiawa Road westbound (existing, to be reconfigured to add the Pearl Highlands Station park-and-ride driveway)
- Kamehameha Highway and Waihona Street (existing, to be reconfigured to add the Pearl Highlands Station park-and-ride driveway)
- Kamehameha Highway and Kuala Street
- Ala Ike Street and Waiawa Road (existing)

According to the ORTP, a future planned four-lane roadway, Central Mauka Road, would be constructed to provide access to future residential and commercial

development in the Central O'ahu area. As this new road is a conceptual project, assumptions regarding its connection to Kamehameha Highway have been made for the purpose of the 2030 analysis. It has been assumed that, under the 2030 No Build conditions, the Central Mauka Road would provide a direct connection to eastbound Kamehameha Highway via a grade separation or an alternative means of connection rather than linking directly to the intersection of Waihona Street and Kamehameha Highway. The intersection of Waihona Street and Kamehameha Highway is also expected to be signalized to serve future 2030 traffic conditions before the introduction of the fixed guideway.

As indicated by Table 5-38, the traffic analysis conducted for the No Build Alternative shows that the LOS at all five study intersections is projected to deteriorate to LOS F during one or both peak hours.

The traffic analysis indicates that the addition of the fixed guideway, together with the projected park-and-ride and kiss-and-ride services, would result in increased traffic and have an effect at the following intersections:

- Kamehameha Highway and Waihona Street/Pearl Highlands Station park-and-ride driveway
- Kamehameha Highway and Kuala Street
- Farrington Highway (WB) and Waiawa Road/Pearl Highlands Station park-and-ride driveway

The effects of the Airport & Salt Lake Alternative would be similar to those of the other Build Alternatives.

Table 5-38: Pearl Highlands Station Intersection Analysis

Intersection	Control*	Peak Hour	No Build		Build Alternatives				
			Delay (sec)	LOS	Delay (sec)	LOS	Project Delay Change	Effect?	
Salt Lake Boulevard Alternative									
Farrington Highway (EB) & Waiawa Road	S	A.M.	149	F	45	D	-104	NO	
		P.M.	162	F	109	F	-53	NO	
Farrington Highway (WB) & Waiawa Rd/Pearl Highlands Station Park-and-Ride Driveway ¹	TWSC	AM	76	F	316	F	240	YES	
		PM	30	D	125	F	95	YES	
Kamehameha Highway & Waihona St/Pearl Highlands Station Park-and-Ride Driveway ²	TWSC/S ³	AM	36	F	45	D	9	NO	
		PM	122	F	138	F	16	YES	
Kamehameha Highway & Kuala Street	TWSC	AM	75	F	>400	F	>0 ⁴	YES	
		PM	>400	F	>400	F	>0 ⁴	YES	
Ala Ike Street & Waiawa Road	TWSC	AM	>400	F	342	F	<0	NO	
		PM	32	D	15	B	-17	NO	
Airport Alternative									
Farrington Highway (EB) & Waiawa Road	S	AM	149	F	45	D	-104	NO	
		PM	162	F	109	F	-53	NO	
Farrington Highway (WB) & Waiawa Rd/Pearl Highlands Station Park-and-Ride Driveway ¹	TWSC	AM	76	F	299	F	223	YES	
		PM	30	D	122	F	92	YES	
Kamehameha Highway & Waihona St/Pearl Highlands Station Park-and-Ride Driveway ²	TWSC/S ³	AM	36	D	45	D	9	NO	
		PM	122	F	137	F	15	YES	
Kamehameha Highway & Kuala Street	TWSC	AM	75	F	>400	F	>0 ⁴	YES	
		PM	>400	F	>400	F	>0 ⁴	YES	
Ala Ike Street & Waiawa Road	TWSC	AM	>400	F	342	F	<0	NO	
		PM	32	D	15	B	-17	NO	

S = Signal-Controlled TWSC = Two-Way Stop-Controlled

¹ With the build alternatives, this park-and-ride driveway would be limited to right-in and right-out access only.

² With the build alternatives, lane configuration assumed for park-and-ride driveway: dual left-turn lane, single through lane, single right-turn lane.

³ Waihona Street currently provides a single left-turn lane and a right-turn lane and is controlled by stop signs. Traffic on Kamehameha Highway is currently uncontrolled. Under future 2030 No Build conditions and 2030 Build conditions, the T-intersection of Waihona Street & Kamehameha Highway is assumed to be signalized under 2030 No Build conditions and 2030 Build alternatives. It is also assumed future planned Central Mauka Road would provide a direct connection to Kamehameha Highway eastbound through a grade-separation project rather than a direct connection to the intersection of Waihona Street & Kamehameha Highway.

⁴ Delay cannot be calculated. However, total volumes are estimated to increase with the build alternatives.

Aloha Stadium Station

A park-and-ride facility is proposed to be constructed on seven acres of land near Aloha Stadium, across from Ford Island Boulevard, that would provide 600 parking spaces and bus transfer opportunities. Vehicular access to the facility would be via Salt Lake Boulevard.

Table 5-39 indicates traffic from the park-and-ride and kiss-and-ride peak hour vehicular trips. Six to seven bus routes with approximately 42 to 46 transit vehicles are projected to serve this station area during the a.m. peak period. The Salt Lake and Airport Alternatives are estimated to generate approximately 160 and 320 a.m. peak hour vehicular trips, depending on the Build Alternative. The Airport & Salt Lake Alternative effects would be similar to the other Build Alternatives.

Table 5-39: Peak Hour Trip Generation—Aloha Stadium Station

Type	Park-and-Ride				Kiss-and-Ride				Transit Vehicle Trips			
	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.	
Stations/Alternatives	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Salt Lake Alternative												
Aloha Stadium (Salt Lake) Station	155	0	0	155	2	2	2	2	24	22	22	24
Airport Alternative												
Aloha Stadium (Kamehameha Highway) Station	285	0	0	285	17	17	17	17	22	20	20	22

Nine existing intersections immediately adjacent to the Aloha Stadium Station were selected for analysis:

- Kamehameha Highway and Honomanu Street
- Moanalua Road and Kamehameha Highway Ramps
- Kamehameha Highway and Salt Lake Boulevard (makai-bound)
- Kamehameha Highway and Salt Lake Boulevard (mauka-bound)
- Moanalua Road and Kaimakani Street
- Salt Lake Boulevard and Kahuapa‘ani Street
- Salt Lake Boulevard and Luapele Drive
- Salt Lake Boulevard and Ala Oli Street
- Salt Lake Boulevard and Bougainville Drive

As mentioned previously, the Salt Lake Alternatives would reduce capacity on Salt Lake Boulevard by one lane between Marshall Road/Pakini Street and Luapele Drive in the ‘Ewa-bound direction. This capacity loss would affect three intersections on Salt Lake Boulevard at Luapele Drive, Ala Oli Street and Bougainville Drive.

The results of the analysis shown in Table 5-40 indicate that five of the nine intersections selected for analysis are projected to operate at LOS D or better under No Build Alternative conditions. The four intersections operating at an unacceptable LOS (LOS E or F) are:

- Kamehameha Highway and Honomanu Street
- Kamehameha Highway and Salt Lake Boulevard (mauka-bound)
- Moanalua Road and Kaimakani Street
- Salt Lake Boulevard and Kahuapa‘ani Street

With the Build Alternatives, none of the study intersections are projected to experience a substantial increase in vehicular delays. The four intersections projected to operate at LOS E or F under the No Build Alternative would continue to do so with all the Build Alternatives. Therefore, none of the Build Alternatives would create a substantial effect at the analyzed intersections in the immediate vicinity of the Aloha Stadium Station.

Change	The following is a modification of and replaces Section 5.6.3 Effects of Buses on Traffic near Stations
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5.6.3 Effects of Buses on Traffic near Stations

With the Build Alternatives, the proposed fixed guideway stations would require modifying bus transit service and/or making improvements to accommodate potential fixed guideway riders who access the system by bus. In some cases, the increase in bus-related traffic volumes would be large enough to warrant analysis of local intersections near stations.

Stations that are expected to accommodate a large number of buses were analyzed. The total number of buses serving each station can be found in Appendix B, along with more detailed information on specific routes.

Five stations on the fixed guideway alignment were selected for bus-related traffic analysis:

- West Loch Station
- Pearlridge Station
- Middle Street Transit Center
- Downtown Station
- Ala Moana Center

Table 5-40: Aloha Stadium Station Intersection Analysis

Intersection	No Build				Build Alternatives			
	Control*	Peak Hour	Delay (sec)	LOS	Delay (sec)	LOS	Project Delay Change	Effect?
Airport Alternative								
Kamehameha Highway & Honomanu Street	S	A.M.	143	F	59	E	-84	NO
		P.M.	161	F	89	F	-72	NO
Moanalua Road & Kamehameha Highway Ramps	S	A.M.	18	B	24	C	6	NO
		P.M.	23	C	20	B	-3	NO
Kamehameha Highway & Salt Lake Boulevard (Makai-Bound)	S	A.M.	15	B	10	A	-5	NO
		P.M.	47	D	20	B	-27	NO
Kamehameha Highway & Salt Lake Boulevard (Mauka-Bound)	S	A.M.	156	F	77	E	-79	NO
		P.M.	24	C	21	C	-3	NO
Moanalua Road & Kaimakani Street	TWSC	A.M.	88	F	38	E	-50	NO
		P.M.	342	F	55	F	-287	NO
Salt Lake Boulevard & Kahuapa'ani Street	S	A.M.	140	F	62	E	-78	NO
		P.M.	370	F	138	F	-232	NO
Salt Lake Boulevard & Luapele Drive	S	A.M.	15	B	7	A	-8	NO
		P.M.	23	C	5	A	-18	NO
Salt Lake Boulevard & Ala Oli	S	A.M.	24	C	23	C	-1	NO
		P.M.	18	B	14	B	-4	NO
Salt Lake Boulevard & Bougainville Drive	S	A.M.	28	C	27	C	-1	NO
		P.M.	48	D	41	D	-7	NO

*S = Signal-Controlled TWSC = Two-Way Stop-Controlled

The size and nature of bus operations on the street system would have a much greater effect on traffic operations than typical passenger vehicles. This feature has been taken into account as part of the bus operations analysis. The assessment of potential bus-related effects at selected station areas also recognized the possible effects of kiss-and-ride (passenger drop offs) and spillover parking.

The following sections present the LOS analysis for intersections around these stations.

West Loch Station

The West Loch Station would be on Farrington Highway in the Waipahu area, just Koko Head of the Kunia Road and Fort Weaver Road interchange. The guideway alignment would run down the center of Farrington Highway. The station itself would be elevated and would have a concourse level.

Estimated bus volumes as well as spillover parking and kiss-and-ride traffic volumes are shown in Table 5-41. Nine bus routes supporting approximately 40 transit vehicle trips are projected to serve this station during a.m. and p.m. peak hours. Although this station would not have a park-and-ride facility, it is expected to have a high amount of spillover parking demand.

Table 5-41: Peak Hour Trip Generation—West Loch Station

Type	Bus Transit Vehicle Trips				Spillover Parking				Kiss-and-Ride			
	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Salt Lake Alternative												
West Loch Station	28	12	12	28	117	0	0	117	60	60	60	60
Airport Alternative												
West Loch Station	28	12	12	28	115	0	0	115	60	60	60	60

Six adjacent intersections around this station are expected to experience a large increase in bus activity, spillover parking demand, and kiss-and-ride activity:

- Farrington Highway and Leokū Street
- Farrington Highway and Leokane Street
- Kunia (Highway 76) Northbound On-Ramp and Waipahu Street
- Leokū Street and Waipahu Street
- Kunia (Highway 76) Northbound On-Ramp and Farrington Highway
- Fort Weaver Road and Laulaunui Street

Table 5-42 presents the intersection analysis results for West Loch station under the No Build Alternative and Build Alternatives. These results show that even with

Table 5-42: West Loch Station Intersection Analysis

Intersection	Control *	Peak Hour	Year 2007		No Build Alternative		Build Alternatives				
			Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Project Delay	Effect?	
Salt Lake Alternative											
Farrington Highway & Leokū Street	S	A.M.	34	C	37	D	40	D	3	NO	
		P.M.	82	F	146	F	113	F	-33	NO	
Farrington Highway & Leokane Street	S	A.M.	21	C	24	C	24	C	0	NO	
		P.M.	23	C	27	C	26	C	-1	NO	
Kunia (Highway 76) NB On-Ramp & Waipahu Street	OWSC	A.M.	20	C	70	F	47	E	-23	NO	
		P.M.	162	F	38	E	29	D	-9	NO	
Leokū Street & Waipahu Street	S	A.M.	10	A	9	A	8	A	-1	NO	
		P.M.	15	B	9	A	8	A	-1	NO	
Kunia (Highway 76) NB On-Ramp & Farrington Highway	S	A.M.	9	A	5	A	5	A	0	NO	
		P.M.	6	A	2	A	2	A	0	NO	
Fort Weaver Road & Laulaunui Street	S	A.M.	152	F	131	F	115	F	-16	NO	
		P.M.	51	D	66	E	64	E	-2	NO	
Airport Alternative											
Farrington Highway & Leokū Street	S	A.M.	34	C	37	D	42	D	5	NO	
		P.M.	82	F	146	F	109	F	-37	NO	
Farrington Highway & Leokane Street	S	A.M.	21	C	24	C	24	C	0	NO	
		P.M.	23	C	27	C	22	C	-5	NO	
Kunia (Highway 76) NB On-Ramp & Waipahu Street	OWSC	A.M.	20	C	70	F	45	E	-25	NO	
		P.M.	162	F	38	E	35	D	-3	NO	
Leokū Street & Waipahu Street	S	A.M.	10	A	9	A	8	A	-1	NO	
		P.M.	15	B	9	A	8	A	-1	NO	
Kunia (Highway 76) NB On-Ramp & Farrington Highway	S	A.M.	9	A	5	A	5	A	0	NO	
		P.M.	6	A	2	A	2	A	0	NO	
Fort Weaver Road & Laulaunui Street	S	A.M.	152	F	131	F	123	F	-8	NO	
		P.M.	51	D	66	E	61	E	-5	NO	

*S = Signal-Controlled OWSC=One-Way-Stop-Control.

the additional transit service and spillover parking and kiss-and-ride activities expected at this location, no substantial traffic effects are expected for the Build Alternatives. The Airport & Salt Lake Alternative effects would be similar to the other Build Alternatives.

Pearlridge Station

The Pearlridge Station would be on Kamehameha Highway in the East Loch area. Estimated bus volumes as well as spillover parking and kiss-and-ride traffic volumes are shown in Table 5-43. Thirteen to fourteen bus routes with approximately 70 to 74 transit vehicles are projected to serve the station during the a.m. and p.m. peak hours. This station is also expected to experience high spillover park-and-ride demand. The effects of all the Build Alternatives, including the Airport & Salt Lake Alternative, would be similar.

Table 5-43: Peak Hour Trip Generation —Pearlridge Station

Type	Bus Transit Vehicle Trips				Spillover Parking				Kiss-and-Ride			
	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Salt Lake												
Pearlridge Station	37	37	37	37	57	0	0	57	38	38	38	38
Airport												
Pearlridge Station	35	35	35	35	46	0	0	46	32	32	32	32

Three intersections around this station are expected to experience a large increase in bus activity, spillover parking demand, and kiss-and-ride activity:

- Kamehameha Highway and Kanuku Street
- Kamehameha Highway and Kaonohi Street
- Kamehameha Highway and Pali Momi Street

Table 5-44 presents the results for the No Build Alternative and Build Alternatives at Pearlridge Station. The Kamehameha Highway and Kanuku Street intersection would continue operating at an acceptable peak hour LOS. The impact analysis results show that even with the additional transit service expected at this location, the LOS would improve. With the No Build Alternative, the Kamehameha Highway and Kaonohi Street and Kamehameha Highway and Pali Momi Street intersections are projected to operate at poor LOS during one or both peak hours. The Build Alternatives, including the Airport & Salt Lake Alternative effects would improve the LOS substantially at these intersections.

Table 5-44: Pearlridge Station Intersection Analysis

Intersection	Control*	Peak Hour	Year 2007		No Build		Build Alternatives				
			Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Project Delay	Effect?	
Salt Lake Alternative											
Kamehameha Highway & Kanuku Street	S	A.M.	21	C	29	C	20	B	-9	NO	
		P.M.	11	B	12	B	11	B	-1	NO	
Kamehameha Highway & Kaonohi Street	S	A.M.	27	C	59	E	28	C	-31	NO	
		P.M.	35	D	76	E	30	C	-46	NO	
Kamehameha Highway & Pali Momi Street	S	A.M.	21	C	47	D	23	C	-24	NO	
		P.M.	10	A	59	E	24	C	-35	NO	
Airport Alternative											
Kamehameha Highway & Kanuku Street	S	A.M.	21	C	29	C	20	B	-9	NO	
		P.M.	11	B	12	B	12	B	0	NO	
Kamehameha Highway & Kaonohi Street	S	A.M.	27	C	59	E	28	C	-31	NO	
		P.M.	35	D	76	E	30	C	-46	NO	
Kamehameha Highway & Pali Momi Street	S	A.M.	21	C	47	D	20	B	-27	NO	
		P.M.	10	A	59	E	27	C	-32	NO	

*S = Signal-Controlled

Middle Street Transit Center Station

The Middle Street Transit Center Station would be on Kamehameha Highway in the Kalihi area. The fixed guideway alignment would run above the H-1 Freeway and down the mauka side of Kamehameha Highway, just east of Middle Street and the freeway. This location is designed to facilitate intermodal transfers between bus and rail service. The station would be elevated and have a concourse level.

Estimated bus volumes as well as spillover parking and kiss-and-ride traffic volumes are shown in Table 5-45. Twelve to thirteen bus routes, ranging from approximately 61 to 79 transit vehicles, are projected to serve this station during the a.m. peak hours depending on the Build Alternative.

Table 5-45: Peak Hour Trip Generation—Middle Street Transit Center Station

Type	Bus Transit Vehicle Trips				Spillover Parking				Kiss-and-Ride			
	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Salt Lake Alternative												
Middle Street Transit Center Station	49	30	30	49	17	0	0	17	16	16	16	16
Airport Alternative												
Middle Street Transit Center Station	37	24	24	37	20	0	0	20	16	16	16	16

Three intersections in the Pearlridge Station area are expected to experience a large increase in bus activity:

- Middle Street and King Street
- Kamehameha Highway and Middle Street
- Kamehameha Highway and Laumaka Street

Table 5-46 presents the results for the No Build Alternative and Build Alternatives. With the No Build Alternative, one of the three study intersections is projected to operate at LOS F in the a.m. peak hour:

- Kamehameha Highway and Middle Street

With the fixed guideway and additional bus operations, the intersection LOS for Kamehameha Highway and Middle Street would improve from LOS F to LOS D in the a.m. peak hour for the Build Alternatives.

In summary, these intersection LOS results demonstrate that even with the additional bus transit service and vehicle trips expected at this location, LOS would improve or remain constant with the addition of the fixed guideway. In general, there would be an improvement in delay over the No Build Alternative that is consistent across all the Build Alternatives.

Table 5-46: Middle Street Transit Center Intersection Analysis

Intersection	Control*	Peak Hour	Year 2007		No Build		Build Alternatives				
			Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Project Delay	Effect?	
Salt Lake Alternative											
Middle Street & King Street	S	A.M.	15	B	19	B	16	B	-3	NO	
		P.M.	12	B	15	B	14	B	-1	NO	
Middle Street & Kamehameha Highway	S	A.M.	19	B	169	F	45	D	-124	NO	
		P.M.	17	B	21	C	20	C	-1	NO	
Laumaka Street & Kamehameha Highway	S	A.M.	5	A	26	C	21	C	-5	NO	
		P.M.	5	A	23	C	17	B	-6	NO	
Airport Alternative											
Middle Street & King Street	S	A.M.	15	B	19	B	15	B	-4	NO	
		P.M.	12	B	15	B	15	B	0	NO	
Middle Street & Kamehameha Highway	S	A.M.	19	B	169	F	45	D	-124	NO	
		P.M.	17	B	21	C	21	C	0	NO	
Laumaka Street & Kamehameha Highway	S	A.M.	5	A	26	C	19	C	-7	NO	
		P.M.	5	A	23	C	14	B	-9	NO	

*S = Signal-Controlled

Downtown/Aloha Tower Station

The Downtown/Aloha Tower Station would be on Nimitz Highway. The station would be elevated and have a concourse level. Estimated bus volumes as well as spillover parking and kiss-and-ride traffic volumes are shown in Table 5-47. Seven bus routes generating 41 transit vehicle trips are projected to serve this station during each a.m. and p.m. peak hour for the Build Alternatives.

Table 5-47: Peak Hour Trip Generation—Downtown/Aloha Tower Station

Type	Bus Transit Vehicle Trips				Spillover Parking				Kiss-and-Ride			
	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.	
Stations/Alternatives	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Salt Lake Alternative												
Downtown/Aloha Tower Station	27	14	27	14	negligible				8	8	8	8
Airport Alternative												
Downtown/Aloha Tower Station	27	14	27	14	negligible				9	9	9	9

Four intersections in the vicinity of this station are expected to experience a large increase in bus activity:

- Nimitz Highway and Bishop Street
- Bishop Street and Queen Street
- Nimitz Highway and Alakea Street
- Nimitz Highway and Halekauwila Street/Richards Street

Table 5-48 presents the results for the No Build Alternative and Build Alternatives. With the No Build Alternative, the following intersections are projected to operate at LOS E or F in either the a.m. or p.m. peak hours (or both):

- Nimitz Highway and Alakea Street
- Nimitz Highway and Halekauwila Street/Richards Street

With the introduction of the Build Alternatives and additional bus services, these intersections would experience a substantial reduction in delay in the a.m. peak hour and a lesser reduction in delay in the p.m. peak hour. The intersection LOS results demonstrate that, even with the additional bus transit service expected at this location, LOS would improve or remain the same with the addition of the fixed guideway. All four analyzed locations show improvements over 2030 No Build conditions for all Build Alternatives. Although at the intersection of Nimitz Highway and Halekauwila Street/Richards Street, LOS F conditions would still exist.

Table 5-48: Downtown/Aloha Tower Station Intersection Analysis

Intersection	Control *	Peak Hour	Year 2007		No Build Alternative		Build Alternatives			
			Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Project Delay	Effect?
Salt Lake Alternative										
Nimitz Highway & Bishop Street	S	A.M.	10	B	13	B	12	B	-1	NO
		P.M.	10	A	14	B	12	B	-2	NO
Bishop Street & Queen Street	S	A.M.	40	D	41	D	37	D	-4	NO
		P.M.	36	D	37	D	37	D	0	NO
Nimitz Highway & Alakea Street	S	A.M.	29.1	C	93	F	58	E	-35	NO
		P.M.	24.6	C	25	C	23	C	-2	NO
Nimitz Highway & Halekauwila Street/Richards Street	S	A.M.	175.3	F	140	F	119	F	-21	NO
		P.M.	100.2	F	105	F	99	F	-6	NO
Airport Alternative										
Nimitz Highway & Bishop Street	S	A.M.	10	B	13	B	12	B	-1	NO
		P.M.	10	A	14	B	12	B	-2	NO
Bishop Street & Queen Street	S	A.M.	40	D	41	D	37	D	-4	NO
		P.M.	36	D	37	D	37	D	0	NO
Nimitz Highway & Alakea Street	S	A.M.	29.1	C	93	F	64	E	-29	NO
		P.M.	24.6	C	25	C	26	C	1	NO
Nimitz Highway & Halekauwila Street/Richards Street	S	A.M.	175.3	F	140	F	89	F	-51	NO
		P.M.	100.2	F	105	F	92	F	-13	NO

*S = Signal-Controlled

Ala Moana Center Station

The Ala Moana Center Station would be on Kona Street. Estimated bus volumes as well as spillover parking and kiss-and-ride traffic volumes are shown in Table 5-49. Sixteen bus feeder routes with approximately 102 transit vehicles are expected to serve this station during the a.m. and the p.m. peak hours. This station is also expected to have a high spillover parking and kiss-and-ride demand.

Table 5-49: Peak Hour Trip Generation—Ala Moana Center Station

Type	Bus Transit Vehicle Trips				Spillover Parking				Kiss-and-Ride			
	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Salt Lake Alternative												
Ala Moana Center Station	87	15	87	15	143	0	0	143	100	100	100	100
Airport Alternative												
Ala Moana Center Station	87	15	87	15	148	0	0	148	103	103	103	103

Four intersections in the vicinity of this station are expected to experience large increases in bus activity, spillover parking, and kiss-and-ride activities:

- Ala Moana Boulevard and Atkinson Drive
- Kona Street and Ke‘eaumoku Street
- Kona Street and Pi‘ikoi Street
- Kapi‘olani Boulevard and Ke‘eaumoku Street

Table 5-50 presents the results for the No Build Alternative and Build Alternatives. With the No Build Alternative, the following intersections are projected to operate at LOS F in either the a.m. and p.m. peak hours (or both):

- Kona Street and Ke‘eaumoku Street
- Kapi‘olani Boulevard and Ke‘eaumoku Street

Table 5-50: Ala Moana Center Station Intersection Analysis

Intersection	Control*	Peak Hour	Year 2007		No Build Alternative		Build Alternatives				
			Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Project Delay	Effect?	
Salt Lake Alternative											
Ala Moana Boulevard & Atkinson Drive	S	A.M.	37	D	53	D	51	D	-2	NO	
		P.M.	34	C	48	D	45	D	-3	NO	
Kona Street & Ke'eaumoku Street	AWSC	A.M.	7	A	185	F	212	F	27	YES	
		P.M.	13	B	255	F	>300	F	45	YES	
Kona Street & Pi'ikoi Street	S	A.M.	11	B	26	C	34	C	8	NO	
		P.M.	17	B	27	C	38	D	11	NO	
Kapi'olani Boulevard & Ke'eaumoku Street	S	A.M.	21	C	25	C	26	C	1	NO	
		P.M.	115	F	168	F	164	F	-4	NO	
Airport Alternative											
Ala Moana Boulevard & Atkinson Drive	S	A.M.	37	D	53	D	49	D	-4	NO	
		P.M.	34	C	48	D	46	D	-2	NO	
Kona Street & Ke'eaumoku Street	AWSC	A.M.	7	A	185	F	245	F	60	YES	
		P.M.	13	B	255	F	>300	F	45	YES	
Kona Street & Pi'ikoi Street	S	A.M.	17	B	26	C	31	C	5	NO	
		P.M.	15	B	27	C	39	D	12	NO	
Kapi'olani Boulevard & Ke'eaumoku Street	S	A.M.	21	C	25	C	25	C	0	NO	
		P.M.	115	F	168	F	142	F	-26	NO	

*S = Signalized AWSC = All-way stop-control

¹ Mitigation measure involves signalizing intersection.

With the Build Alternatives, the Kapi'olani Boulevard and Ke'eaumoku Street intersection would experience a reduction in vehicle delay. The LOS at this location would remain at LOS E or F for the Build Alternatives. The LOS at the Kona Street and Pi'ikoi Street intersection and at the Ala Moana Boulevard and Atkinson intersection would be LOS D or better with the Build Alternatives.

The stop-controlled intersection of Kona Street and Ke'eaumoku Street would worsen considerably in the a.m. peak hour. The introduction of additional bus feeder services and spillover parking and kiss-and-ride vehicle trips would trigger an effect at this intersection. With mitigation, LOS at this location would improve to D in the a.m. peak under the Salt Lake Alternative. LOS F would still occur for other time periods under each Build Alternative.

Change	The following is a modification of and replaces Section 5.6.4 Maintenance and Storage Facility Effects on Traffic
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5.6.4 Maintenance and Storage Facility Effects on Traffic

This section summarizes the potential localized traffic effects associated with the maintenance and storage facility proposed for the 2030 Build Alternatives. These effects were analyzed since the maintenance and storage facility would generate added traffic beyond what would occur under No Build conditions.

This facility would be capable of maintaining and storing up to 100 vehicles for the guideway system. There are two locations being considered for the maintenance and storage facility:

- Near Ho'opili Facility Option
- Near Leeward Community College (LCC) Facility Option

Only one of the sites would ultimately be selected. Either location would include a number of buildings, maintenance facilities, vehicle wash area, storage tracks, and employee parking. It is proposed that the guideway structure would be constructed to transfer trains directly in and out of the proposed maintenance and storage facility. This type of facility is expected to generate primarily employee vehicle trips.

For the purpose of the traffic impact analysis, it was estimated that 30 percent of the employees working the daylight shift (approximately 63 employees) would arrive at the facility during the typical morning peak hour and same number of employees would leave the facility during the typical afternoon peak hour. A large percentage of the employee commute trips are expected to be made by single occupant vehicles. The traffic analysis assumed that the maintenance facility would generate approximately 63 vehicle trips that would be distributed on the local roadway system (based on the regional travel patterns) during the typical morning and afternoon traffic peak hours.

Ho'opili Option

The Ho'opili maintenance and storage facility would be located between the proposed UH West O'ahu Station on North-South Road and the West Loch Station on Farrington Highway east of the Kunia Interchange. This facility is estimated to generate approximately 63 peak hour trips during both the morning and afternoon peak hours.

Traffic accessing this facility would utilize the same roads used to access the UH West O'ahu Station and the West Loch Station under all Build Alternatives. Trip generation for modes of access, in addition to that generated by the maintenance and storage, is shown in Table 5-51.

Table 5-51: Peak Hour Trip Generation for UH West O'ahu Station and West Loch Station

Type	Bus Transit Vehicle Trips				Formal Park-and-Ride				Kiss-and-Ride			
	AM		PM		AM		PM		AM		PM	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Salt Lake Alternative												
UH West O'ahu Station	21	21	21	21	145	0	0	145	45	45	45	45
West Loch Station	28	12	12	28	117	0	0	117	60	60	60	60
Airport Alternative												
UH West O'ahu Station	21	21	21	21	144	0	0	144	46	46	46	46
West Loch Station	28	12	12	28	115	0	0	115	60	60	60	60

As part of the ORTP, several access roadways or connectors would be constructed in anticipation of the UH West O'ahu development and the new commercial/residential development in the East Kapolei area. Nine existing or future intersections adjacent to the proposed Ho'opili maintenance and storage facility were selected for analysis:

- Kunia (Highway 76) Northbound On-ramp and Farrington Highway (existing intersection)
- Fort Weaver Road and Laulaunui Street (existing intersection)
- North-South Road and Road B (future intersection)
- North-South Road and East-West Road (future intersection)
- Old Fort Weaver Road and Fort Weaver/'A'awa Drive (existing intersection)
- Farrington Highway and 'Ewa Road (future intersection)
- Farrington Highway and North-South Road

- Farrington Highway and Proposed Ho‘opili Maintenance and Storage Facility Access Road
- Farrington Highway and Old Fort Weaver Road

Analysis of the 2030 No Build Alternative conditions shown in Table 5-52 indicates that five intersections would operate at LOS E or F during one or both peak hours:

- Fort Weaver Road and Laulaunui Street
- Old Fort Weaver Road and Fort Weaver Road/A‘awa Drive
- Farrington Highway and North-South Road
- Farrington Highway and New ‘Ewa Road/Proposed Ho‘opili Maintenance and Storage Facility Access Road
- Farrington Highway and Old Fort Weaver Road

However, the traffic analysis conducted for the 2030 with Build Alternatives indicates that combined estimated traffic traveling to the UH West O‘ahu and West Loch Stations would not result in substantial traffic delays at any of the analyzed intersections.

Near Leeward Community College Option

The LCC maintenance and storage facility option would be in the immediate vicinity of the proposed Pearl Highlands Station. This facility is estimated to generate approximate 63 peak hour trips during both the morning and afternoon peak hours. Table 5-37 shows trip generation for park-and-ride and kiss-and-ride access to the Pearl Highlands Station.

Five intersections immediately adjacent to the proposed facility and the Pearl Highlands station were selected for analysis:

- Farrington Highway and Waiawa Road eastbound (existing)
- Farrington Highway and Waiawa Road westbound (existing to be reconfigured to add Pearl Highlands Station park-and-ride driveway for right-in and right-out access)
- Kamehameha Highway and Waihona Street (existing to be reconfigured to add Pearl Highlands Station park-and-ride driveway)
- Kamehameha Highway and Kuala Street (existing)
- Ala Ike Street and Waiawa Road (existing)

Table 5-53 presents the full traffic analysis for this option. Under the Build Alternatives, the traffic analysis indicates that the proposed LCC maintenance and storage facility would not result in any additional traffic delays. However, traffic projected from the park-and-ride, kiss-and-ride and bus feeder services would result in traffic increases leading to traffic effects at the following locations under each Build Alternative:

Table 5-52: Ho'opili Maintenance and Storage Facility Option Intersection Analysis

Intersection	Control*	Peak Hour	2030 No Build		2030 Build Alternatives				2030 Build Alternatives + Proposed Ho'opili Maintenance and Storage Facility			
			Delay (sec)	LOS	Delay (sec)	LOS	Project Delay Change Compared to No Build	Effect?	Delay (sec)	LOS	Project Delay Change Compared to No Build	Effect?
Salt Lake Alternative												
Hwy 76 NB On-Ramp & Farrington Highway	S	A.M.	5	A	5	A	0	NO	5	A	0	NO
		P.M.	2	A	2	A	0	NO	2	A	0	NO
Fort Weaver Road & Laulaunui Street	S	A.M.	131	F	115	F	-16	NO	115	F	-16	NO
		P.M.	66	E	64	E	-2	NO	64	E	-2	NO
North-South Road & Road B ¹	S	A.M.	55	D	51	D	-4	NO	51	D	-4	NO
		P.M.	45	D	48	D	3	NO	48	D	3	NO
North-South Road & East-West Road ²	S	A.M.	34	C	41	D	7	NO	41	D	7	NO
		P.M.	36	C	41	D	5	NO	41	D	5	NO
Old Fort Weaver Road & Fort Weaver Road /A'awa Drive	S	A.M.	115	F	91	F	-24	NO	91	F	-23	NO
		P.M.	68	E	58	E	-10	NO	58	E	-10	NO
Farrington Highway & New 'Ewa Road ³	S	A.M.	56	E	38	D	-18	NO	38	D	-11	NO
		P.M.	45	D	34	C	-11	NO	33	D	-12	NO
Farrington Highway & North-South Road ⁴	S	A.M.	105	F	29	C	-76	NO	29	D	-76	NO
		P.M.	41	D	41	D	0	NO	41	D	2	NO
Farrington Highway & Proposed Maintenance and Storage Facility Access Road ⁵	S	A.M.	377	F	331	F	-46	NO	332	F	-44	NO
		P.M.	57	E	44	D	-13	NO	44	D	-13	NO
Farrington Highway & Old Fort Weaver Road	TWSC	A.M.	>400	F	>400	F	<0 ⁶	NO	>400	F	<0 ⁶	NO
		P.M.	>400	F	>400	F	<0 ⁶	NO	>400	F	<0 ⁶	NO
Airport Alternative												
Hwy 76 NB On-Ramp & Farrington Highway	S	A.M.	5	A	5	A	0	NO	6	A	1	NO
		P.M.	2	A	2	A	0	NO	2	A	0	NO
Fort Weaver Road & Laulaunui Street	S	A.M.	131	F	123	F	-8	NO	123	F	-8	NO
		P.M.	66	E	61	E	-5	NO	61	E	-5	NO
North-South Road & Road B ¹	S	A.M.	55	D	52	D	-3	NO	52	D	-3	NO
		P.M.	45	D	46	D	1	NO	46	D	1	NO
North-South Road & East-West Road ²	S	A.M.	34	C	40	D	6	NO	40	D	6	NO
		P.M.	36	C	41	D	5	NO	41	D	5	NO
Old Fort Weaver Road & Fort Weaver Road /A'awa Drive	S	A.M.	115	F	93	F	-22	NO	93	F	-21	NO
		P.M.	68	E	58	E	-10	NO	58	E	-10	NO
Farrington Highway & New 'Ewa Road ³	S	A.M.	56	E	36	C	-20	NO	36	D	-13	NO
		P.M.	45	D	42	D	-3	NO	42	D	-2	NO
Farrington Highway & North-South Road ⁴	S	A.M.	105	F	28	C	-77	NO	28	C	-77	NO
		P.M.	41	D	45	D	4	NO	45	D	6	NO
Farrington Highway & Proposed Maintenance & Storage Facility Access Road ⁵	S	A.M.	377	F	328	F	-49	NO	330	F	-47	NO
		P.M.	57	E	43	D	-14	NO	44	D	-13	NO
Farrington Highway & Old Fort Weaver Road	TWSC	A.M.	>400	F	>400	F	<0 ⁶	NO	>400	F	<0 ⁶	NO
		P.M.	>400	F	>400	F	<0 ⁶	NO	>400	F	<0 ⁶	NO

* S = Signal-Controlled TWSC = Two-Way Stop-Controlled

¹ Future base lane configuration assumed for North-South Road at Road B: northbound: single left-turn lane, three through lanes, single right-turn lane; southbound: dual left-turn lanes, three through lanes, single right-turn lane; westbound: single left-turn lane, one through lane, dual right-turn lanes; eastbound: single left-turn lane, one through, single right-turn lane.

² Future base lane configuration assumed for North-South Road at East-West Connector Road: northbound: one left-turn lane, three through lanes, one right-turn lane; southbound: one left-turn lane, three through lanes, one right-turn lane; eastbound: one left-turn lane, one through lane, one right-turn lane; westbound: two left-turn lanes, one through lane, one right-turn lane.

³ Future base lane configuration assumed for Farrington Highway at New 'Ewa Road: Northbound: single left-turn lane, one shared through/right-turn lane, single right-turn lane; Southbound: single left-turn lane, one through lane, single right-turn lane; Westbound: dual left-turn lanes, two through lanes, single right-turn lane; eastbound: single left turn lane, two through lanes, single right-turn lane.

⁴ Future base lane configuration assumed for Farrington Highway at North-South Road: northbound and southbound: single left-turn lane, three through lanes, single right-turn lane; eastbound and westbound: single left-turn lane, two through lanes, single right-turn lane

⁵ Future base lane configuration assumed for Farrington Highway at New 'Ewa Road/Proposed Maintenance and Storage Facility Driveway: northbound and southbound: single left-turn lane, one through lane, single right-turn lane; eastbound and westbound: single left-turn lane, two through lanes, single right-turn lane

⁶ Delay cannot be calculated. However, total peak hour volumes are estimated to decrease with the build alternatives.

Table 5-53: Leeward Community College Option Maintenance and Storage Facility Intersection Analysis

Intersection	Control*	2030 No Build			2030 Build Alternatives				2030 Build Alternatives + Proposed LCC Maintenance and Storage Facility Option			
		Peak Hour	Delay (sec)	LOS	Delay (sec)	LOS	Project Delay Change Compared to No Build	Effect?	Delay (sec)	LOS	Project Delay Change Compared to No Build	Effect?
Salt Lake Alternative												
Farrington Highway (EB) & Waiawa Road	S	AM	149	F	45	D	-104	NO	51	F	-98	NO
		PM	162	F	109	F	53	NO	123	F	-39	NO
Farrington Highway (WB) & Waiawa Road/Pearl Highlands Station Park-and-Ride Driveway ¹	TWSC	AM	76	F	316	F	240	YES	>400	F	>0 ⁸	YES
		PM	30	D	125	F	95	YES	144	F	114	YES
Kamehameha Highway & Waihona Street/Pearl Highlands Station Park-and-Ride Driveway ²	TWSC/S ³	AM	36	D	45	D	9	NO	45	D	9	NO
		PM	122	F	138	F	16	YES	138	F	16	YES
Kamehameha Highway & Kuala Street	TWSC	AM	75	F	>400	F	>0 ⁸	YES	>400	F	>0 ⁸	YES
		PM	>400	F	>400	F	>0 ⁸	YES	>400	F	>0 ⁸	YES
Ala Ike Street & Waiawa Road	TWSC	AM	>400	F	342	F	<0	NO	392	F	<0	NO
		PM	32	D	15	B	-17	NO	17	C	-15	NO
Airport Alternative												
Farrington Highway (EB) & Waiawa Road	S	AM	149	F	45	D	-104	NO	51	E	-98	NO
		PM	162	F	109	F	-53	NO	123	F	-39	NO
Farrington Highway (WB) & Waiawa Road/Pearl Highlands Station Park-and-Ride Driveway ¹	TWSC	AM	76	F	299	F	223	YES	>400	F	>0 ⁸	YES
		PM	30	D	122	F	92	YES	139	E	109	YES
Kamehameha Highway & Waihona Street/Pearl Highlands Station Park-and-Ride Driveway ²	TWSC/S ³	AM	36	D	45	D	9	NO	45	D	9	NO
		PM	122	F	137	F	15	YES	137	F	15	YES
Kamehameha Highway & Kuala Street	TWSC	AM	75	F	>400	F	>0 ⁸	YES	>400	F	>0 ⁸	YES
		PM	>400	F	>400	F	>0 ⁸	YES	>400	F	>0 ⁸	YES
Ala Ike Street & Waiawa Road	TWSC	AM	>400	F	342	F	<0	NO	392	F	<0	NO
		PM	32	D	15	B	-17	NO	17	C	-15	NO

* S = Signal-Controlled TWSC = Two-Way Stop-Controlled

¹ With the build alternatives, this park-and-ride driveway would be limited to right-in and right-out access only.

² With the build alternatives, lane configuration assumed for park-and-ride driveway: dual left-turn lane, single through lane, single right-turn lane.

³ Waihona Street currently provides a single left-turn lane and a right-turn lane and is controlled by stop signs. Traffic on Kamehameha Highway is currently uncontrolled. Under future 2030 No Build conditions and 2030 Build conditions, the T-intersection of Waihona Street at Kamehameha Highway is assumed to be signalized. It is also assumed that the future planned Central Mauka Road would provide a direct connection to Kamehameha Highway eastbound through a grade separation project or an alternative means of connection, instead of linking directly to the intersection of Waihona Street and Kamehameha Highway.

⁴ At Farrington Highway westbound and Waiawa Road/Proposed Pearl Highlands Station Park-and-ride driveway (right-in and right-out access only), the proposed mitigation measures would require installation of signals. The new signals would require synchronization with the adjacent signals at Farrington Highway eastbound and Waiawa Road.

⁵ At Kamehameha Highway and Waihona Street, the proposed Option 1 mitigation measure would involve widening the 'Ewa-bound direction of Kamehameha Highway from two through lanes and one right-turn lane to three through lanes and one right-turn lane at Waihona Street. Necessary signs and traffic lane guidance (dotted lines are required to allow safe merging and weaving maneuvers for traffic intending to use H-2 and H-1 Freeways). Widening of Kamehameha Highway westbound would fully mitigate the traffic impact at this location under all build alternatives.

⁶ At Kamehameha Highway and Waihona Street, the proposed Option 2 mitigation measure would involve construction direct outbound access ramp to facilitate the park-and-ride traffic intending to travel on H-2 Freeway. The traffic impact at this location would be fully mitigated all build alternatives with the additional exiting capacity for the park-and-ride structure.

⁷ At Kamehameha Highway and Kuala Street, mitigation includes (1) signalizing 'Ewa-bound Kamehameha Highway at Kuala Street and (2) widening Koko Head-bound Kamehameha Highway from one to two lanes.

⁸ Delay cannot be calculated. However, total volumes are estimated to increase with the build alternatives.

- Farrington Highway westbound and Waiawa Road/Proposed Pearl Highlands Station access driveway (right-in and right-out only)
- Kamehameha Highway and Waihona Street/Proposed Pearl Highlands Station park-and-ride driveway (full access)
- Kamehameha Highway and Kuala Street (existing)

Change The following is a modification of and replaces
Section 5.8.2 Spillover Parking Effects on Station Areas
Iwilei Station

Iwilei Station

The Iwilei Station would be on Dillingham Boulevard near Ka'aahi Street. This station is expected to attract substantial spillover parking patronage and kiss-and-ride trips, as shown in Table 5-55.

Table 5-55: Peak Hour Trip Generation—Iwilei

Type	Spillover Parking				Kiss-and-Ride				Bus Transit Vehicle Trips			
	A.M.		P.M.		A.M.		P.M.		A.M.		P.M.	
Stations/Alternatives	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Salt Lake Alternative												
Iwilei Station	68	0	0	68	57	57	57	57	3	0	3	0
Airport Alternative												
Iwilei Station	73	0	0	73	57	57	57	57	3	0	3	0

Five intersections around this station are expected to experience a large increase in spillover parking and kiss-and-ride operations:

- Dillingham Boulevard and Ka'aahi Street
- Dillingham Boulevard and King Street
- King Street and Beretania Street
- King Street and Iwilei Road
- Iwilei Road and Kūwili Street

Table 5-56 presents the intersection analysis results for the No Build Alternative and the Build Alternatives at the Iwilei Station. With the No Build Alternative, the following intersections are projected to operate at LOS E or F in either or both the a.m. and p.m. peak hours:

- Dillingham Boulevard and King Street
- King Street and Beretania Street

The intersection LOS results demonstrate that, even with the additional spillover parking demand and kiss-and-ride activity at this location, LOS would improve or mostly remain equivalent with the addition of the fixed guideway. Therefore, the increase in vehicle activity would not substantially affect local traffic conditions surrounding the Iwilei Station.

Table 5-56: Iwilei Station Intersection Analysis

Intersection	Control*	Peak Hour	Year 2007		No Build Alternative		Build Alternatives			
			Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Project Delay	Effect?
			Salt Lake Alternative							
Dillingham Boulevard & Ka'aahi Street	S	A.M.	5	A	5	A	6	A	1	NO
		P.M.	5	A	5	A	5	A	0	NO
Dillingham Boulevard & King Street	S	A.M.	69	E	65	E	36	D	-29	NO
		P.M.	62	E	70	E	62	E	-8	NO
King Street & Beretania Street	S	A.M.	54	D	70	E	48	D	-22	NO
		P.M.	113	F	181	F	121	F	-60	NO
King Street & Iwilei Road	S	A.M.	24	C	30	C	27	C	-3	NO
		P.M.	26	C	23	C	24	C	1	NO
Iwilei Road & Kūwili Street	OWSC ¹	A.M.	15	C	17	C	15	C	-2	NO
		P.M.	19	C	23	C	19	C	-4	NO
Airport Alternative										
Dillingham Boulevard & Ka'aahi Street	S	A.M.	5	A	5	A	6	A	1	NO
		P.M.	5	A	5	A	5	A	0	NO
Dillingham Boulevard & King Street	S	A.M.	69	E	65	E	38	D	-27	NO
		P.M.	62	E	70	E	61	E	-9	NO
King Street & Beretania Street	S	A.M.	54	D	70	E	42	D	-28	NO
		P.M.	113	F	181	F	140	F	-41	NO
King Street & Iwilei Road	S	A.M.	24	C	30	C	26	C	-4	NO
		P.M.	26	C	23	C	25	C	2	NO
Iwilei Road & Kūwili Street	OWSC ¹	A.M.	15	C	17	C	16	C	-1	NO
		P.M.	19	C	23	C	19	C	-4	NO

*S: Signal OWSC: one-way stop control.

¹ This intersection has a stop sign for Kūwili Street. Analysis was done using HCM stop-controlled methodology, and the LOS and delay in seconds for the worst movement are reported.

6 Mitigation of Long-Term Transportation Effects

No change

7 Construction-Related Effects

No change

8 Future Build Alternatives Plus Planned Extensions Conditions and Performance

Change The following are modifications of and replace
Table 8-2—Total Daily Fixed Guideway Ridership—2030 Salt Lake Alternative Plus Planned Extensions

Table 8-2: Total Daily Fixed Guideway Ridership—2030 Salt Lake Alternative Plus Planned Extensions

Station Name	Koko Head-Bound			'Ewa-Bound		
	Boardings	Alightings	Between Stations	Boardings	Alightings	Between Stations
Planned Extension to West Kapolei						
West Kapolei	4,210	N/A	4,210	N/A	4,210	N/A
Kapolei Transit Center	1,330	20	5,520	20	1,330	4,210
Kalaeloa	530	200	5,850	200	530	5,520
Fort Barrette Road	150	50	5,950	50	150	5,850
Kapolei Parkway	1,770	240	7,480	240	1,770	5,950
Salt Lake Alternative						
East Kapolei	1,710	160	9,030	160	1,710	7,480
UH West O'ahu	5,050	230	13,850	230	5,050	9,030
Ho'opili	1,330	200	14,980	200	1,330	13,850
West Loch	4,190	690	18,480	690	4,190	14,980
Waipahu Transit Center	2,230	660	20,050	660	2,230	18,480
Leeward Community College	940	710	20,280	710	940	20,050
Pearl Highlands	7,120	2,010	25,390	2,010	7,120	20,280
Pearlridge	3,540	1,770	27,160	1,770	3,540	25,390
Aloha Stadium (Salt Lake)	1,930	860	28,230	860	1,930	27,160
Ala Liliako'i	3,220	1,720	29,730	1,720	3,220	28,230
Middle Street	1,730	1,570	29,890	1,570	1,730	29,730

Table 8-2: Total Daily Fixed Guideway Ridership—2030 Salt Lake Alternative Plus Planned Extensions (continued)

Station Name	Koko Head-Bound			'Ewa-Bound		
	Boardings	Alightings	Between Stations	Boardings	Alightings	Between Stations
Kalihi	2,940	1,720	31,110	1,720	2,940	29,890
Kapālama	1,040	1,040	31,110	1,040	1,040	31,110
Iwilei	1,500	1,440	31,170	1,440	1,500	31,110
Chinatown	1,300	870	31,600	870	1,300	31,170
Downtown	3,040	5,780	28,860	5,780	3,040	31,600
Civic Center	1,170	2,470	27,560	2,470	1,170	28,860
Kaka'ako	810	2,300	26,070	2,300	810	27,560
Ala Moana Center	2,110	5,900	22,280	5,900	2,110	26,070
Convention Center	790	2,580	20,490	2,580	790	
Planned Extension to UH Mānoa						
From Convention Center			10,780			11,600
McCully	90	830	10,040	830	90	10,780
Date Street	60	1,660	8,440	1,660	60	10,040
Mō'ili'ili	20	3,520	4,940	3,520	20	8,450
UH Mānoa	N/A	4,940	N/A	4,940	N/A	4,940
Planned Extension to Waikīkī						
From Convention Center	–	–	9,710	–	–	10,680
Kālainmoku Street	30	4,540	5,200	4,540	30	9,710
Lili'uokalani Avenue	N/A	5,200	N/A	5,200	N/A	5,200
<i>Totals</i>	<i>55,880</i>	<i>55,880</i>		<i>55,880</i>	<i>55,880</i>	

Change The following are modifications of and replace
Table 8-4—Total Daily Fixed Guideway Ridership—2030 Airport & Salt Lake Alternative Plus Planned Extensions

Table 8-4: Total Daily Fixed Guideway Ridership—2030 Airport & Salt Lake Alternative Plus Planned Extensions

Station Name	Koko Head-Bound			'Ewa-Bound		
	Boardings	Alightings	Between Stations	Boardings	Alightings	Between Stations
Planned Extension to West Kapolei						
West Kapolei	4,250	-	4,250	-	4,250	-
Kapolei Transit Center	1,330	10	5,570	10	1,330	4,250
Kalaeloa	520	190	5,900	190	520	5,570
Fort Barrette Road	150	50	6,000	50	150	5,900
Kapolei Parkway	1,750	240	7,510	240	1,750	6,000
Main Alignment						
East Kapolei	1,720	160	9,070	160	1,720	7,510
UH West O'ahu	5,070	230	13,910	230	5,070	9,070
Ho'opili	1,320	200	15,030	200	1,320	13,910
West Loch	4,140	690	18,480	690	4,140	15,030

Table 8-4: Total Daily Fixed Guideway Ridership—2030 Airport & Salt Lake Alternative Plus Planned Extensions (continued)

Station Name	Koko Head-Bound			'Ewa-Bound		
	Boardings	Alightings	Between Stations	Boardings	Alightings	Between Stations
Waipahu Transit Center	2,230	640	20,070	640	2,230	18,480
Leeward Community College	940	720	20,290	720	940	20,070
Pearl Highlands	7,150	2,040	25,400	2,040	7,150	20,290
Pearlridge	3,780	1,650	27,530	1,650	3,780	25,400
Salt Lake Alignment						
From Pearlridge			20,300			
Aloha Stadium (Salt Lake)	790	270	20,820	270	790	20,290
Ala Liliako'i	1,640	740	21,720	740	1,640	20,810
From Middle Street						21,710
Airport Alignment						
From Pearlridge			7,230			
Arizona Memorial	950	240	7,940	240	950	7,230
Pearl Harbor Naval Base	2,510	1,610	8,840	1,610	2,510	7,940
Honolulu International Airport	1,130	1,150	8,820	1,150	1,130	8,840
Lagoon Drive	860	830	8,850	830	860	8,820
From Middle Street						8,850
Main Alignment						
From Ala Liliako'i & Lagoon Drive			30,570			
Middle Street	1,780	1,500	30,850	1,500	1,780	30,560
Kalihi	3,010	1,940	31,920	1,940	3,010	30,840
Kapālama	1,030	1,060	31,890	1,060	1,030	31,910
Iwilei	1,500	1,580	31,810	1,580	1,500	31,880
Chinatown	1,300	930	32,180	930	1,300	31,800
Downtown	3,040	5,750	29,470	5,750	3,040	32,170
Civic Center	1,180	2,450	28,200	2,450	1,180	29,460
Kaka'ako	810	2,460	26,550	2,460	810	28,190
Ala Moana Center	2,100	5,830	22,820	5,830	2,100	26,540
Convention Center	1,060	2,680	21,200	2,680	1,060	22,810
Planned Extension to UH Mānoa						
From Convention Center			10,930			
McCully	100	910	10,120	910	100	10,930
Date Street	50	1,830	8,340	1,830	50	10,120
Mō'ili'ili	30	3,430	4,940	3,430	30	8,340
UH Mānoa	-	4,940	-	4,940	-	4,940
Planned Extension to Waikīkī						
From Convention Center			10,270			
Kālainmoku Street	30	4,800	5,500	4,800	30	10,270
Lili'uokalani Avenue	0	5,500	0	5,500	0	5,500
<i>Totals</i>	59,250	59,250		59,250	59,250	

Change

The following are modifications of and replace
**Table 8-5—A.M. Two-Hour Peak-Period Fixed Guideway Ridership—2030
Salt Lake Alternative Plus Planned Extensions**

Table 8-5: A.M. Two-Hour Peak-Period Fixed Guideway Ridership—2030 Salt Lake Alternative Plus Planned Extensions

Station Name	Koko Head-Bound			'Ewa-Bound		
	Boardings	Alightings	Between Stations	Boardings	Alightings	Between Stations
Planned Extension to West Kapolei						
West Kapolei	880	0	880	0	410	0
Kapolei Transit Center	300	0	1180	0	290	410
Kalaeloa	150	60	1270	20	110	700
Fort Barrette Road	20	20	1270	0	20	790
Kapolei Parkway	1000	20	2250	120	100	810
Salt Lake Alternative						
East Kapolei	770	20	3000	60	100	790
UH West O'ahu	2360	40	5320	60	280	830
Ho'opili	500	40	5780	40	140	1050
West Loch	1590	160	7210	140	350	1150
Waipahu Transit Center	700	100	7810	180	200	1360
Leeward Community College	120	240	7690	20	350	1380
Pearl Highlands	3970	260	11400	760	190	1710
Pearlridge	980	560	11820	240	350	1140
Aloha Stadium (Salt Lake)	370	320	11870	100	190	1250
Ala Liliiko'i	780	720	11930	160	470	1340
Middle Street	420	560	11790	160	250	1650
Kalihi	650	660	11780	160	370	1740
Kapālama	110	440	11450	40	240	1950
Iwilei	250	500	11200	200	240	2150
Chinatown	90	320	10970	60	210	2190
Downtown	430	2580	8820	340	730	2340
Civic Center	140	1000	7960	180	280	2730
Kaka'ako	140	700	7400	180	160	2830
Ala Moana Center	120	1800	5720	420	410	2810
Convention Center	160	520	5360	380	160	2800
Planned Extension to UH Mānoa						
From Convention Center			3050			
McCully	20	110	2960	240	10	1430
Date Street	10	470	2500	330	10	1200
Mō'ili'ili	0	640	1860	730	0	880
UH Mānoa	0	1860	0	150	0	150
Planned Extension to Waikīkī						
From Convention Center			2310			
Kālaimoku Street	0	1260	1050	480	10	1150
Lili'uokalani Avenue	0	1050	0	680	0	680
<i>Totals</i>	<i>17,030</i>	<i>17,030</i>		<i>6,630</i>	<i>6,630</i>	

Change The following are modifications of and replace
**Table 8-7—A.M. Two-Hour Peak-Period Fixed Guideway Ridership—2030
 Airport & Salt Lake Alternative Plus Planned Extensions**

Table 8-7: A.M. Two-Hour Peak-Period Fixed Guideway Ridership—Airport & Salt Lake Alternative Plus Planned Extensions

Station Name	Koko Head-Bound			'Ewa-Bound		
	Boardings	Alightings	Between Stations	Boardings	Alightings	Between Stations
Planned Extension to West Kapolei						
West Kapolei	880	0	880	0	410	0
Kapolei Transit Center	290	0	1170	0	290	410
Kalaeloa	150	40	1280	20	110	700
Fort Barrette Road	20	20	1280	0	20	790
Kapolei Parkway	1000	20	2260	120	110	810
Main Alignment						
East Kapolei	760	20	3000	60	100	800
UH West O'ahu	2370	40	5330	60	270	840
Ho'opili	500	60	5770	40	140	1050
West Loch	1580	160	7190	140	340	1150
Waipahu Transit Center	700	100	7790	200	200	1350
Leeward Community College	120	240	7670	40	350	1350
Pearl Highlands	4010	260	11420	780	180	1660
Pearlridge	1070	560	11930	220	360	1060
Salt Lake Alignment						
From Pearlridge			5965			
Aloha Stadium (Salt Lake)	220	110	6075	40	70	920
Ala Liliko'i	580	200	6455	130	110	950
From Middle Street						930
Airport Alignment						
From Pearlridge			5965			
Arizona Memorial	150	40	6075	50	100	280
Pearl Harbor Naval Base	320	670	5725	70	480	330
Honolulu International Airport	90	430	5385	60	280	740
Lagoon Drive	70	330	5125	30	230	960
From Middle Street						1160
Main Alignment						
From Ala Liliko'i & Lagoon Drive			11580			
Middle Street	330	440	11470	210	220	
Kalihi	650	620	11500	240	380	2100
Kapālama	110	430	11180	40	240	2240
Iwilei	250	450	10980	260	240	2440
Chinatown	90	320	10750	80	210	2420
Downtown	430	2500	8680	390	730	2550
Civic Center	150	970	7860	200	290	2890
Kaka'ako	130	710	7280	190	150	2980
Ala Moana Center	130	1720	5690	450	410	2940
Convention Center	160	480	5370	500	260	2900

Table 8-7: A.M. Two-Hour Peak-Period Fixed Guideway Ridership—Airport & Salt Lake Alternative Plus Planned Extensions (continued)

Station Name	Koko Head-Bound			'Ewa-Bound		
	Boardings	Alightings	Between Stations	Boardings	Alightings	Between Stations
Planned Extension to UH Mānoa						
From Convention Center			3070			
McCully	20	140	2950	260	10	1450
Date Street	10	470	2490	330	10	1200
Mō'ili'ili	10	630	1870	730	0	880
UH Mānoa	0	1870	0	150	0	150
Planned Extension to Waikīkī						
From Convention Center			2300			
Kālainmoku Street	0	1270	1030	500	10	1210
Lili'uokalani Avenue	0	1030	0	720	0	720
<i>Totals</i>	<i>17,350</i>	<i>17,350</i>		<i>7,310</i>	<i>7,310</i>	

Change The following is a modification of and replaces the second paragraph and list of bullets of
Section 8.3.2—Intersection Analysis

The results of the analysis indicate that all but five of the intersections are projected to operate at LOS D or better, acceptable LOS for O'ahu, under Year 2030 No Build traffic conditions, including three intersections in the Salt Lake area and one intersection in the Waikīkī area. The five intersections operating at unacceptable LOS (i.e., LOS E or F during one or both a.m. and p.m. peak hours) are as follows:

- Kamehameha Highway and Honomanu Street in the Salt Lake area
- Kamehameha Highway and Salt Lake Boulevard (mauka-bound) in the Salt Lake area
- Moanalua Road and Kaimakani Street in the Salt Lake Area
- Salt Lake Boulevard and Kahuapa'ani Street in the Salt Lake area
- Kalākaua Avenue and Ala Moana Boulevard/Pau Street (Waikīkī area) in the Waikīkī area

Change The following is a modification of and replaces
Table 8-19—Intersection Analysis—2030 Airport & Salt Lake Alternative Plus Planned Extensions

Table 8-19: Intersection Analysis—2030 Airport & Salt Lake Alternative Plus Planned Extensions

Intersection			Control	Peak Hour	Year 2007		2030 No Build		Airport & Salt Lake Alternative Plus Planned Extensions (2030)			
					Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Project Delay Change	Effect
Salt Lake Area												
Kamehameha Highway	&	Honomanu Street	S	A.M.	91	F	143	F	56	E	-87	No
				P.M.	87	F	161	F	83	F	-78	No
Moanalua Road	&	Kamehameha Highway Ramps	S	A.M.	20	C	18	B	22	C	4	No
				P.M.	18	B	23	C	19	B	-4	No
Kamehameha Highway	&	Salt Lake Boulevard (Makai Bound)	S	A.M.	10	A	15	B	9	A	-6	No
				P.M.	14	B	47	D	18	B	-29	No
Kamehameha Highway	&	Salt Lake Boulevard (Mauka Bound)	S	A.M.	32	C	156	F	119	F	-37	No
				P.M.	18	B	24	C	21	C	-3	No
Moanalua Road	&	Kaimakani Street	TWSC ¹	A.M.	53	F	88	F	34	D	-54	No
				P.M.	93	F	342	F	52	F	-290	No
Salt Lake Boulevard	&	Kahuapa'ani Street	S	A.M.	58	F	140	F	62	E	-78	No
				P.M.	97	F	370	F	138	F	-232	No
Salt Lake Boulevard	&	Luapele Drive	S	A.M.	10	A	15	B	11	B	-4	No
				P.M.	20	C	23	C	21	C	-76	No
Salt Lake Boulevard	&	Ala Oli Street	S	A.M.	22	C	24	C	23	C	-1	No
				P.M.	14	B	18	B	18	B	0	No
Salt Lake Boulevard	&	Bougainville Drive	S	A.M.	27	C	28	C	27	C	-1	No
				P.M.	41	D	48	D	38	D	-10	No
Waikiki Area												
Kalākaua Avenue	&	Ala Wai Boulevard	S	A.M.	41	D	46	D	25	C	-21	No
				P.M.	18	B	19	B	18	B	-1	No
McCully Street	&	Kalākaua Avenue	S	A.M.	13	B	13	D	13	B	0	No
				P.M.	9	A	9	A	9	A	0	No
Kalākaua Avenue	&	Ala Moana Boulevard/ Pau Street	S	A.M.	31	C	35	D	19	B	-16	No
				P.M.	62	E	110	F	97	F	-13	No

Table 8-19: Intersection Analysis—2030 Airport & Salt Lake Alternative Plus Planned Extensions (continued)

Intersection			Control	Peak Hour	Year 2007		2030 No Build		Airport & Salt Lake Alternative Plus Planned Extensions (2030)			
					Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Project Delay Change	Effect
Kalākaua Avenue	&	Kuamo'o Street/ Kūhiō Avenue	F/Y	A.M.	17	C	19	C	14	B ²	-5	No
				P.M.	16	C	18	C	16	C ²	-2	No
Kūhiō Avenue	&	'Ōlohana Street	S	A.M.	27	C	17	B	12	B ³	-5	No
				P.M.	27	C	40	D	11	B ³	-29	No
Kūhiō Avenue	&	Kālainmoku Street	S	A.M.	13	B	16	B	17	B ⁴	1	No
				P.M.	25	C	24	C	22	C ⁴	-2	No
Kūhiō Avenue	&	Lewers Street	S	A.M.	12	B	13	B	12	B ⁵	-1	No
				P.M.	18	B	22	C	18	B ⁵	-4	No
Kūhiō Avenue	&	Kanekapolei Street	S	A.M.	18	B	41	D	41	D ⁵	0	No
				P.M.	16	B	19	B	17	B ⁵	-2	No
Kūhiō Avenue	&	Uluniu Avenue	S	A.M.	0.2	A	0.2	A	0	A ⁵	0	No
				P.M.	9	A	7	A	12	B ⁵	5	No
Kūhiō Avenue	&	Lili'uokalani Avenue	S	A.M.	13	B	14	B	10	B ⁵	-4	No
				P.M.	20	B	23	C	22	C ⁵	-1	No
Kūhiō Avenue	&	'Ōhua Avenue	S	A.M.	12	B	14	B	17	B ⁵	3	No
				P.M.	12	B	11	B	13	B ⁵	2	No
Kūhiō Avenue	&	Paoakalani Avenue	S	A.M.	9	A	8	A	10	B ⁵	2	No
				P.M.	11	B	11	B	12	B ⁵	1	No

*S = Signal TWSC = Two-way-stop-control F/Y = Free flow, only yield to pedestrians or transit buses in the contra flow lane on Kūhiō Avenue.

¹Intersection is controlled by stop sign(s). Analysis was done using Highway Capacity Manual stop-controlled methodology. For this two-way controlled intersection, the level of service and delay in seconds for the worst movement are reported.

²Existing 'Ewa-bound bus lane would be removed under future with the build alternatives conditions.

³Existing two left turn lanes on Mauka side of roadway on Kūhiō Avenue would be removed under future with the build alternatives conditions.

⁴One right through lane and one right turn lane on Mauka side of Kūhiō Avenue would be removed under future with the build alternatives conditions.

⁵One 'Ewa-bound through lane on Kūhiō Avenue would be removed under future with the build alternatives conditions.

Change The following is a modification of and replaces
Table 8-22—West Kapolei Station Intersection Analysis—Airport & Salt Lake Alternative Plus Planned Extensions

Table 8-22: West Kapolei Station Intersection Analysis—Airport & Salt Lake Alternative Plus Planned Extensions

Intersection			Control*	Peak Hour	Year 2007		No Build Alternative (2030)		Airport & Salt Lake Alternative plus Planned Extensions			
					Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Project Delay Change	Effect
Farrington Highway/H-1 WB On/Off Ramps	&	Kalaeloa Boulevard	TWSC	A.M.	31	D	122	F	105	F	-17	No
				P.M.	>400	F	>400	F	27	D	<0	No
Kalaeloa Boulevard	&	Kapolei Parkway ¹	S	A.M.	27	C	28	C	29	C	1	No
				P.M.	53	D	58	F	55	D	-3	No
Kalaeloa Boulevard	&	Saratoga Avenue	TWSC	A.M.	NA		193	F	159	F	-34	No
				P.M.	NA		>400	F	253	F	<0	No
Kapolei Parkway	&	Hanua Street ²	S	A.M.	NA		39	D	34	C	-5	No
				P.M.	NA		29	C	27	C	-2	No
Kapolei Parkway	&	Kamokila Boulevard ³	TWSC/S ⁴	A.M.	NA		24	C	33	C	9	No
				P.M.	NA		27	C	37	D	10	No

* S = Signal-Controlled TWSC = Two-Way Stop-Controlled

¹Future lane geometry assumed—northbound (NB): one left-turn lane, two through lanes, two right-turn lanes; southbound (SB): two left-turn lanes, two through lanes, two right-turn lanes; eastbound (EB): two left-turn lanes, three through lanes, two right-turn lanes; westbound (WB): two left-turn lanes, three through lanes, two right-turn lanes

²Lane geometry assumed—NB: one left-turn lane, two through lanes, one right-turn lane; SB: one left-turn lane, two through lanes, one right-turn lane; EB: two left-turn lanes, three through lanes, one right-turn lane; WB: one left-turn lane, three through lanes, one right-turn lane

³Lane geometry assumed—NB: one through/left-turn lane, one through/right-turn lane; SB: one through/left-turn lane, one through/right-turn lane; EB: one left-turn lane, two through lanes, one right-turn lane; WB: one left-turn lane, two through lanes, one right-turn lane.

⁴Currently stop-controlled, this intersection is signalized for the 2030 No Build and 2030 with Build Alternatives.

Change The following is a modification of and replaces
Table 8-24—Kapolei Parkway Station Intersection Analysis—Airport & Salt Lake Alternative Plus Planned Extensions

Table 8-24: Kapolei Parkway Station Intersection Analysis—Airport & Salt Lake Alternative Plus Planned Extensions

Intersection			Control *	Peak Hour	No Build Alternative (2030)		Airport & Salt Lake Alternative plus Planned Extensions (2030)			
					Delay (sec)	LOS	Delay (sec)	LOS	Project Delay	Effect
Roosevelt Avenue	&	North-South Road ¹	S	A.M.	28	C	39	D	11	No
				P.M.	28	C	30	C	2	No
Kapolei Parkway	&	North-South Road ²	S	A.M.	36	C	45	D	9	No
				P.M.	31	C	35	C	4	No
North-South Road	&	Road B ³	S	A.M.	55	D	51	D	-4	No
				P.M.	45	D	47	D	2	No
North-South Road	&	East-West Connector Road ⁴	S	A.M.	34	C	40	D	6	No
				P.M.	36	D	40	D	4	No
Old Fort Weaver Road	&	Fort Weaver Road/A'awa Drive	S	A.M.	115	F	91	F	-24	No
				P.M.	68	E	46	D	-22	No
Farrington Highway	&	New 'Ewa Road ⁵	S	A.M.	56	E	42	D	-14	No
				P.M.	45	D	45	D	0	No
Farrington Highway	&	North-South Road ⁴	S	A.M.	105	F	30	C	-75	No
				P.M.	41	D	42	D	1	No
Farrington Highway	&	Old Fort Weaver Road	TWSC	A.M.	>400	F	>400	F	<0 ⁶	No
				P.M.	>400	F	>400	F	<0 ⁶	No
Farrington Highway	&	Kunia (Highway 76) NB On-Ramp	S	A.M.	5	A	5	A	0	No
				P.M.	2	A	2	A	0	No
Fort Weaver Road	&	Laulaunui Street	S	A.M.	131	F	116	F	-15	No
				P.M.	66	E	65	E	-1	No

Note: All intersections are new or modified

* S = Signal-Controlled TWSC = Two-Way Stop-Controlled

¹ Lane geometry assumed—northbound (NB): one left-turn lane, one through lane, one right-turn lane; southbound (SB): one left-turn lane, one through lane, one right-turn lane; eastbound (EB): one left-turn lane, two through lanes, one right-turn lane; westbound (WB): one left-turn lane, two through lanes, one right-turn lane.

² Lane geometry assumed—NB: one left-turn lane, three through lanes, one right-turn lane; SB: one left-turn lane, three through lanes, one right-turn lane; EB: one left-turn lane, two through lanes, one right-turn lane; WB: one left-turn lane, two through lanes, two right-turn lanes.

³ Future base lane configuration assumed for North-South Road at Road B: NB: single left-turn lane, three through lanes, single right turn lane; SB: dual left-turn lanes, three through lanes, single right-turn lane; WB: single left-turn lane, one through lane, dual right-turn lanes; EB: single left turn lane, one through lane, single right-turn lane.

⁴ Future base lane configuration assumed for North-South Road at East-West Connector Road: NB: one left-turn lane, three through lanes, one right-turn lane; SB: one left-turn lane, three through lanes, one right-turn lane; EB: one left-turn lane, one through lane, one right-turn lane; WB: two left-turn lanes, one through lane, one right-turn lane.

⁵ Future base lane configuration assumed for Farrington Highway at New 'Ewa Road: NB: single left-turn lane, one shared through/right-turn lane, single right-turn lane; SB: single left-turn lane, one through lane, single right-turn lane; WB: dual left-turn lanes, two through lanes, single right-turn lane; EB: single left-turn lane, two through lanes, single right-turn lane.

⁶ Delay cannot be calculated. However, total volumes reduced with the Build Alternatives.

Change The following is a modification of and replaces
Table 8-26—Pearl Highlands Station Intersection Analysis—Airport & Salt Lake Alternative Plus Planned Extensions

Table 8-26: Pearl Highlands Station Intersection Analysis— Airport & Salt Lake Alternative Plus Planned Extensions

Intersection			Control *	Peak Hour	Year 2007		2030 No Build		2030 Airport & Salt Lake Alternative plus Planned Extensions			
					Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Project Delay	Effect
Farrington Highway	&	Waiawa Road (EB)	S	A.M.	78	E	149	F	45	D	-104	No
				P.M.	13	B	162	F	105	F	-57	No
Farrington Highway	&	Waiawa Road (WB)/ Park-and-Ride Driveway ¹	TWSC	A.M.	30	D	76	F	323	F	247	Yes
				P.M.	30	D	30	D	134	F	104	Yes
Kamehameha Highway	&	Waihona Street/Park-and-Ride Driveway ²	TWSC/S ³	A.M.	26	D	36	D	50	D	14	No
				P.M.	>400	F	122	F	144	F	22	Yes
Kamehameha Highway	&	Kuala Street	TWSC	A.M.	74	F	75	F	>400	F	>0 ⁴	Yes
				P.M.	>400	F	>400	F	>400	F	>0 ⁴	Yes
Ala Ike Street	&	Waiawa Road	TWSC	A.M.	53	F	>400	F	297	F	<0	No
				P.M.	21	C	32	D	14	B	-18	No

* S = Signal-Controlled TWSC = Two-Way Stop-Controlled

¹ With the Build Alternatives, this park-and-ride driveway would be limited to right-in and right-out access only.

² With the Build Alternatives, lane configuration assumed for park-and-ride driveway: dual left-turn lane, single through lane, single right-turn lane.

³ Waihona Street currently provides a single left-turn lane and a right-turn lane and is controlled by stop signs. Traffic on Kamehameha Highway is currently uncontrolled. Under future 2030 No Build conditions and 2030 Build conditions, the T-intersection of Waihona Street and Kamehameha Highway is assumed to be signalized under 2030 No Build conditions and 2030 Build Alternatives. It is also assumed future planned Central Mauka Road would provide a direct connection to Kamehameha Highway eastbound through a grade-separation project rather than a direct connection to the intersection of Waihona Street and Kamehameha Highway.

⁴ Delay cannot be calculated. However, total volumes are estimated to increase with the Build Alternatives.

Change The following are modifications of and replace
Section 8.4.4—Aloha Stadium Station
Table 8-27— Peak Hour Trip Generation—Aloha Stadium Station—Airport & Salt Lake Alternative Plus Planned Extensions
Table 8-28— Aloha Stadium Station Intersection Analysis—Airport & Salt Lake Alternative Plus Planned Extensions

8.4.4 Aloha Stadium Station

Intersections near Aloha Stadium were analyzed for effects under the Build Alternatives plus planned extensions. Peak hour trip generation is shown in Table 8-27.

Table 8-27: Peak Hour Trip Generation—Aloha Stadium Station—Airport & Salt Lake Alternative Plus Planned Extensions

Stations	Park-and-Ride				Kiss-and-Ride				Transit Vehicle Trips (1 bus = 3 passenger-car-equivalent)			
	A.M. Peak		P.M. Peak		A.M. Peak		P.M. Peak		A.M. Peak		P.M. Peak	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Aloha Stadium Station (Salt Lake)	166	0	0	166	6	6	6	6	24	22	22	24
Aloha Stadium Station (Kamehameha Highway)	291	0	0	291	17	17	17	17	22	20	20	22
Aloha Stadium and Arizona Memorial Stations (Salt Lake & Airport Alternative)	157	0	0	157	2	2	2	2	22	20	20	22

The results of the analysis are shown in Table 8-28. Five of the nine intersections studied are projected to operate at LOS D or better under 2030 No Build conditions.

With the Build Alternatives plus planned extensions, none of the study intersections are projected to experience a substantial increase in vehicular delays. The four intersections projected to operate at LOS E or F under the No Build Alternative would continue to do so under all the Build Alternatives plus planned extensions.

Therefore, none of the Build Alternatives plus planned extensions would create a substantial project or cumulative effect at the analyzed intersections in the immediate vicinity of the Aloha Stadium Station.

Table 8-28: Aloha Stadium Station Intersection Analysis—Airport & Salt Lake Alternative Plus Planned Extensions

Intersection			Control *	Peak Hour	Year 2007		No Build Alternative		Airport & Salt Lake Alternative plus Planned Extensions			
					Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Project Delay	Effect?
Salt Lake Alternative												
Kamehameha Highway	&	Honomanu Street	S	A.M.	91	F	143	F	53	E	-90	No
				P.M.	87	F	161	F	88	F	-73	No
Moanalua Road	&	Kamehameha Highway Ramps	S	A.M.	20	C	18	B	29	C	11	No
				P.M.	18	B	23	C	21	B	-2	No
Kamehameha Highway	&	Salt Lake Boulevard (makai-bound)	S	A.M.	10	A	15	B	10	B	-5	No
				P.M.	14	B	47	D	22	B	-25	No
Kamehameha Highway	&	Salt Lake Boulevard (mauka-bound)	S	A.M.	32	C	156	F	119	F	-37	No
				P.M.	18	B	24	C	21	C	-3	No
Moanalua Road	&	Kaimakani Street	TWSC	A.M.	53	F	88	F	34	D	-54	No
				P.M.	93	F	342	F	53	F	-289	No
Salt Lake Boulevard	&	Kahuapa'ani Street	S	A.M.	58	F	140	F	62	E	-78	No
				P.M.	97	F	370	F	139	F	-231	No
Salt Lake Boulevard	&	Luapele Drive	S	A.M.	10	A	15	A	8	A	-7	No
				P.M.	20	C	23	C	7	A	-16	No
Salt Lake Boulevard	&	Ala Oli Street	S	A.M.	22	C	24	C	20	C	-4	No
				P.M.	14	B	18	B	16	B	-2	No
Salt Lake Boulevard	&	Bougainville Drive	S	A.M.	27	C	28	C	28	C	0	No
				P.M.	41	D	48	D	42	D	-6	No
Airport Alternative												
Kamehameha Highway	&	Honomanu Street	S	A.M.	91	F	143	F	57	E	-86	No
				P.M.	87	F	161	F	84	F	-77	No
Moanalua Road	&	Kamehameha Highway Ramps	S	A.M.	20	C	18	B	22	C	4	No
				P.M.	18	B	23	C	19	B	-3	No
Kamehameha Highway	&	Salt Lake Boulevard (makai-bound)	S	A.M.	10	A	15	B	10	A	-5	No
				P.M.	14	B	47	D	18	B	-29	No
Kamehameha Highway	&	Salt Lake Boulevard (mauka-bound)	S	A.M.	32	C	156	F	119	F	-37	No
				P.M.	18	B	24	C	21	C	-3	No
Moanalua Road	&	Kaimakani Street	TWSC	A.M.	53	F	88	F	38	E	-50	No
				P.M.	93	F	342	F	55	F	-287	No
Salt Lake Boulevard	&	Kahuapa'ani Street	S	A.M.	58	F	140	F	63	E	-77	No
				P.M.	97	F	370	F	140	F	-230	No
Salt Lake Boulevard	&	Luapele Drive	S	A.M.	10	A	15	A	12	B	-3	No
				P.M.	20	C	23	C	7	A	-16	No
Salt Lake Boulevard	&	Ala Oli Street	S	A.M.	22	C	24	C	17	B	-7	No
				P.M.	14	B	18	B	27	C	-9	No
Salt Lake Boulevard	&	Bougainville Drive	S	A.M.	27	C	28	C	27	C	-1	No
				P.M.	41	D	48	D	35	C	-13	No

Table 8-28: Aloha Stadium Station Intersection Analysis—Airport & Salt Lake Alternative Plus Planned Extensions (continued)

Intersection			Control *	Peak Hour	Year 2007		No Build Alternative		Airport & Salt Lake Alternative plus Planned Extensions			
					Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Project Delay	Effect?
Airport & Salt Lake Alternative												
Kamehameha Highway	&	Honomanu Street	S	A.M.	91	F	143	F	56	E	-87	No
				P.M.	87	F	161	F	83	F	-78	No
Moanalua Road	&	Kamehameha Highway Ramps	S	A.M.	20	C	18	B	22	C	4	No
				P.M.	18	B	23	C	19	B	-4	No
Kamehameha Highway	&	Salt Lake Boulevard (makai-bound)	S	A.M.	10	A	15	B	9	B	-6	No
				P.M.	14	B	47	D	18	B	-29	No
Kamehameha Highway	&	Salt Lake Boulevard (mauka-bound)	S	A.M.	32	C	156	F	119	F	-147	No
				P.M.	18	B	24	C	21	C	-3	No
Moanalua Road	&	Kaimakani Street	TWSC	A.M.	53	F	88	F	34	D	-54	No
				P.M.	93	F	342	F	52	F	-290	No
Salt Lake Boulevard	&	Kahuapa'ani Street	S	A.M.	58	F	140	F	62	E	-78	No
				P.M.	97	F	370	F	138	F	-232	No
Salt Lake Boulevard	&	Luapele Drive	S	A.M.	10	A	15	A	11	B	-4	No
				P.M.	20	C	23	C	21	C	-2	No
Salt Lake Boulevard	&	Ala Oli Street	S	A.M.	22	C	24	C	23	C	-1	No
				P.M.	14	B	18	B	18	B	-1	No
Salt Lake Boulevard	&	Bougainville Drive	S	A.M.	27	C	28	C	27	C	-1	No
				P.M.	41	D	48	D	38	D	-10	No

* S = Signal-Controlled TWSC = Two-Way Stop-Controlled

Change The following is a modification of and replaces
Table 8-33—Mō'ili'ili Station Intersection Analysis—Airport & Salt Lake Alternative Plus Planned Extensions

Table 8-33: Mō'ili'ili Station Intersection Analysis—Airport & Salt Lake Alternative Plus Planned Extensions

Intersection			Control *	Peak Hour	Year 2007		2030 No Build		Airport & Salt Lake Alternative plus Planned Extensions			
					Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Project Delay	Effect
University Avenue	&	Dole Street	S	A.M.	97	F	154	F	127	F	-27	NO
				P.M.	93	F	97	F	93	F	-4	NO
University Avenue	&	Varsity Place	S	A.M.	16	B	19	B	25	C ¹	6	NO
				P.M.	15	B	13	B	14	B ¹	1	NO
University Avenue	&	King Street	S	A.M.	96	F	133	F	116	F	-17	NO
				P.M.	95	F	110	F	94	F	-16	NO
University Avenue	&	Ku'ilei Street	TWSC	A.M.	44	E	101	F	94	F	-7	NO
				P.M.	84	F	>300	F	>400	F	>100	NO
University Avenue	&	Date Street	S	A.M.	71	E	200	F	127	F	-73	NO
				P.M.	101	F	111	F	110	F	-1	NO
University Avenue	&	Kapi'olani Boulevard	S	A.M.	41	D	65	E	63	E	-2	NO
				P.M.	34	C	26	C	28	C	2	NO
Kapi'olani Boulevard	&	Date Street/Kamoku Street	S ²	A.M.	225	F	274	F	239	F	-35	NO
				P.M.	224	F	242	F	213	F	-29	NO
Beretania Street	&	Isenberg Street	S	A.M.	28	C	202	F	86	F	-116	NO
				P.M.	30	C	163	F	135	F	-28	NO
King Street	&	Isenberg Street	S	A.M.	16	B	74	E	50	D	-24	NO
				A.M.	97	F	154	F	127	F	-27	NO

* S = Signal-Controlled TWSC = Two-Way Stop-Controlled

¹The northbound right-turn lane on University Avenue is proposed to be removed under future with Build Alternative conditions.

²This is a signalized intersection with six approaches, except that Kamoku Street southbound is controlled by a stop sign

Appendix C

Screenline and LOS Worksheets

Change

The following is a modification of and replaces

Table C-1: 2030 With Full Project + Future Extensions – A.M. Peak Hour Screenline Impacts Analysis

Table C-2: 2030 with Full Project + Future Extensions—P.M. Peak Hour Screenline Impacts Analysis

Table C-3: 2030 with Salt Lake Alternative—A.M. Peak Hour Screenline Impacts Analysis

Table C-4: 2030 with Salt Lake Alternative—P.M. Peak Hour Screenline Impacts Analysis

Table C-2: 2030 with Full Project—P.M. Peak Hour Screenline Impacts Analysis

Screenline / Facility	Year 2005 Conditions							2030 No Build Conditions							2030 with Full Project Conditions							Screenline Impact Analysis					
	Facility	Observed Volume (vph) [a]	Maximum Volume Threshold [b]					LOS [b]	Facility	Forecast Volume (vph)	Maximum Volume Threshold [b]					LOS [b]	Forecast Volume (vph)	Maximum Volume Threshold [b]					LOS [b]	Project Impact? (Yes or No)	Cumulative Impact? (Yes or No)		
			A	B	C	D	E				A	B	C	D	E			A	B	C	D	E					
A. Kapolei Mauka bound																											
Kalaeloa Bl	2	1,360	**	**	1,020	1,480	1,560	D	2	1,260	**	**	1,020	1,480	1,560	D	1,280	**	**	1,020	1,480	1,560	D				
Fort Barrette Rd	2	1,190	**	**	1,020	1,480	1,560	D	2	1,480	**	**	1,020	1,480	1,560	E	1,470	**	**	1,020	1,480	1,560	D				
North-South Rd (future roadway)	NA	NA	NA	NA	NA	NA	NA	NA	3	1,420	**	**	1,590	2,230	2,350	C*	1,500	**	**	1,590	2,230	2,350	C*				
Total		2,550					D		4,160						D	4,250						D	NO	NO			
Kapolei Makai bound																											
Kalaeloa Bl	2	400	**	**	1,020	1,480	1,560	C*	2	400	**	**	1,020	1,480	1,560	C*	400	**	**	1,020	1,480	1,560	C*				
Fort Barrette Rd	2	1,280	**	**	1,020	1,480	1,560	D	2	1,200	**	**	1,020	1,480	1,560	D	1,080	**	**	1,020	1,480	1,560	D				
North-South Rd (future roadway)	NA	NA	NA	NA	NA	NA	NA	NA	3	1,410	**	**	1,590	2,230	2,350	C*	1,350	**	**	1,590	2,230	2,350	C*				
Total		1,680					D		3,010						C	2,830						C	NO	NO			
B. 'Ewa 'Wai'anae bound																											
H-1 Fwy	3	4,110	1,620	2,630	3,800	4,920	5,590	D	3	3,920	1,620	2,630	3,800	4,920	5,590	D	4,170	1,620	2,630	3,800	4,920	5,590	D				
H-1 Fwy future HOV	NA	NA	515	839	1,213	1,568	1,783	NA	1	1,100	515	839	1,213	1,568	1,783	C	1,100	515	839	1,213	1,568	1,783	C				
Farrington Hwy	1	310	**	200	660	780	810	C	2	350	**	200	1,240	1,560	1,640	C	470	**	200	1,240	1,560	1,640	C				
Fort Weaver Rd (SB)	2	2,400	**	200	1,240	1,560	1,640	F	2	2,250	**	200	1,240	1,560	1,640	F	2,290	**	200	1,240	1,560	1,640	F				
Total		6,820					E		7,620						D	8,030						D	NO	NO			
'Ewa Koko Head bound																											
H-1 Fwy	3	4,080	1,620	2,630	3,800	4,920	5,590	D	3	5,500	1,620	2,630	3,800	4,920	5,590	E	5,980	1,620	2,630	3,800	4,920	5,590	F				
H-1 Fwy future HOV	NA	NA	515	839	1,213	1,568	1,783	NA	1	990	515	839	1,213	1,568	1,783	C	980	515	839	1,213	1,568	1,783	C				
Farrington Hwy	2	620	230	1,390	1,650	1,700	**	B	3	290	**	310	1,920	2,340	2,460	B*	480	**	310	1,920	2,340	2,460	C				
Fort Weaver Rd (NB)	2	2,060	**	200	1,240	1,560	1,640	F	2	2,450	**	200	1,240	1,560	1,640	F	2,580	**	200	1,240	1,560	1,640	F				
Total		6,760					D		9,230						E	10,020						F	NO	NO			
C. Waikale Stream 'Ewa bound																											
H-1 Fwy	4	6,710	2,210	3,580	5,180	6,710	7,620	E	4	8,450	2,210	3,580	5,180	6,710	7,620	F	8,440	2,210	3,580	5,180	6,710	7,620	F				
H-1 Fwy future HOV	NA	NA	515	839	1,213	1,568	1,783	NA	1	490	515	839	1,213	1,568	1,783	A	430	515	839	1,213	1,568	1,783	A				
Waipahu St	1	530	**	**	440	700	740	D	1	170	**	**	440	700	740	C*	150	**	**	440	700	740	C*				
Farrington Hwy	2	1,280	**	200	1,240	1,560	1,640	D	3	1,150	**	310	1,920	2,340	2,460	C	1,300	**	310	1,920	2,340	2,460	C				
Total		8,520					E		10,260						E	10,310						E	NO	NO			
Waikale Stream Koko Head bound																											
H-1 Fwy	4	4,790	2,210	3,580	5,180	6,710	7,620	C	5	6,360	2,800	4,540	6,570	8,490	9,660	C	6,930	2,800	4,540	6,570	8,490	9,660	D				
Waipahu St	1	420	**	**	440	700	740	C*	1	300	**	**	440	700	740	C*	390	**	**	440	700	740	C*				
Farrington Hwy	2	790	**	200	1,240	1,560	1,640	C	3	640	**	310	1,920	2,340	2,460	C	920	**	310	1,920	2,340	2,460	C				
Total		6,000					C		7,300						C	8,240						D	NO	NO			
D. Kalauao 'Ewa bound																											
H-1 Fwy	5	8,410	2,800	4,540	6,570	8,490	9,660	D	4	8,670	2,210	3,580	5,180	6,710	7,620	F	8,640	2,210	3,580	5,180	6,710	7,620	F				
H-1 Fwy HOV	1	1,530	515	839	1,213	1,568	1,783	D	1	1,720	515	839	1,213	1,568	1,783	E	1,430	515	839	1,213	1,568	1,783	D				
H-1 Fwy Future Zipper Lane	NA	NA	515	839	1,213	1,568	1,783	NA	1	950	515	839	1,213	1,568	1,783	C	800	515	839	1,213	1,568	1,783	B				
Moanalua Rd	2	2,020	**	**	1,020	1,480	1,560	F	2	2,060	**	**	1,020	1,480	1,560	F	1,880	**	**	1,020	1,480	1,560	F				
Kamehameha Hwy	3	2,110	**	310	1,920	2,340	2,460	D	3	2,140	**	310	1,920	2,340	2,460	D	1,990	**	310	1,920	2,340	2,460	D				
Total		14,070					D		15,540						E	14,740						E	NO	NO			
Kalauao Koko Head bound																											
H-1 Fwy	4	5,740	2,210	3,580	5,180	6,710	7,620	D	5	7,240	2,800	4,540	6,570	8,490	9,660	D	7,850	2,800	4,540	6,570	8,490	9,660	D				
H-1 Fwy HOV (Existing only)	1	1,360	515	839	1,213	1,568	1,783	D	NA	NA	515	839	1,213	1,568	1,783	NA	NA	515	839	1,213	1,568	1,783	NA				
Moanalua Rd	2	870	**	**	1,020	1,480	1,560	C*	2	970	**	**	1,020	1,480	1,560	C*	940	**	**	1,020	1,480	1,560	C*				
Kamehameha Hwy	3	1,500	**	310	1,920	2,340	2,460	C	3	1,680	**	310	1,920	2,340	2,460	C	1,700	**	310	1,920	2,340	2,460	C				
Total		9,470					D		9,890						D	10,490						D	NO	NO			
E. Salt Lake 'Ewa bound																											
Moanalua Fwy	4	5,900	2,210	3,580	5,180	6,710	7,620	D	4	5,890	2,210	3,580	5,180	6,710	7,620	D	5,740	2,210	3,580	5,180	6,710	7,620	D				
H-1 Fwy	4	3,550	2,210	3,580	5,180	6,710	7,620	B	4	3,460	2,210	3,580	5,180	6,710	7,620	B	3,670	2,210	3,580	5,180	6,710	7,620	C				
H-1 Fwy HOV	1	1,410	515	839	1,213	1,568	1,783	D	1	1,320	515	839	1,213	1,568	1,783	D	1,070	515	839	1,213	1,568	1,783	C				
H-1 Fwy Future zipper lane	NA	NA	515	839	1,213	1,568	1,783	NA	1	810	515	839	1,213	1,568	1,783	B	660	515	839	1,213	1,568	1,783	B				
Nimitz Hwy	3	2,460	**	310	1,920	2,340	2,460	E	3	3,150	**	310	1,920	2,340	2,460	F	2,390	**	310	1,920	2,340	2,460	E				
Salt Lake Bl	1	730	**	**	440	700	740	E	2	990	**	**	1,020	1,480	1,560	C*	810	**	**	1,020	1,480	1,560					

Table C-2: 2030 with Full Project—P.M. Peak Hour Screenline Impacts Analysis (continued)

Screenline / Facility	Year 2005 Conditions								2030 No Build Conditions								2030 with Full Project Conditions								Screenline Impact Analysis	
	Facility	Observed Volume (vph) [a]	Maximum Volume Threshold [b]					LOS [b]	Facility	Forecast Volume (vph)	Maximum Volume Threshold [b]					LOS [b]	Forecast Volume (vph)	Maximum Volume Threshold [b]					LOS [b]	Project Impact? (Yes or No)	Cumulative Impact? (Yes or No)	
			A	B	C	D	E				A	B	C	D	E			A	B	C	D	E				
F. Kapalama Canal 'Ewa bound																										
Nimitz Hwy	3	1,780	**	310	1,920	2,340	2,460	C	3	1,790	**	310	1,920	2,340	2,460	C	1,520	**	310	1,920	2,340	2,460	C			
Nimitz Flyover (Future Facility)	NA	NA	NA	NA	NA	NA	NA	NA	2	880	1,030	1,680	2,420	3,130	3,560	A	770	1,030	1,680	2,420	3,130	3,560	A			
Dillingham Blvd	2	1,460	**	200	1,240	1,560	1,640	D	2	1,350	**	200	1,240	1,560	1,640	D	900	**	200	1,240	1,560	1,640	C			
N King St	2	1,340	**	**	1,020	1,480	1,560	D	2	1,440	**	**	1,020	1,480	1,560	D	1,320	**	**	1,020	1,480	1,560	D			
H-1 Fwy	4	7,570	2,210	3,580	5,180	6,710	7,620	E	4	8,050	2,210	3,580	5,180	6,710	7,620	F	8,190	2,210	3,580	5,180	6,710	7,620	F			
Halonga St	2	1,800	**	**	1,220	1,770	1,870	E	2	2,230	**	**	1,220	1,770	1,870	F	1,720	**	**	1,220	1,770	1,870	D			
School St	2	1,220	**	**	1,020	1,480	1,560	D	2	1,380	**	**	1,020	1,480	1,560	D	1,260	**	**	1,020	1,480	1,560	D			
Total		15,170						E		17,120						E	15,680						E	NO	NO	
Kapalama Canal Koko Head bound																										
Nimitz Hwy	3	2,770	**	310	1,920	2,340	2,460	F	3	4,250	**	310	1,920	2,340	2,460	F	3,280	**	310	1,920	2,340	2,460	F			
Dillingham Blvd	2	1,080	**	200	1,240	1,560	1,640	C	2	1,100	**	200	1,240	1,560	1,640	C	1,000	**	200	1,240	1,560	1,640	C			
N King St	2	1,110	**	**	1,020	1,480	1,560	D	2	1,560	**	**	1,020	1,480	1,560	D	1,430	**	**	1,020	1,480	1,560	D			
Olomea St	2	1,670	**	**	1,220	1,770	1,870	D	2	1,890	**	**	1,220	1,770	1,870	F	1,670	**	**	1,220	1,770	1,870	D			
H-1 Fwy	4	7,320	2,210	3,580	5,180	6,710	7,620	E	5	8,040	2,800	4,540	6,570	8,490	9,660	D	7,970	2,800	4,540	6,570	8,490	9,660	D			
School St	2	990	**	**	1,020	1,480	1,560	C*	2	1,210	**	**	1,020	1,480	1,560	D	1,160	**	**	1,020	1,480	1,560	D			
Total		14,940						E		18,050						D	16,510						D	NO	NO	
G. Ward Avenue 'Ewa bound																										
H-1 Fwy	3	6,790	1,620	2,630	3,800	4,920	5,590	F	3	7,130	1,620	2,630	3,800	4,920	5,590	F	6,890	1,620	2,630	3,800	4,920	5,590	F			
Beretania St	5	2,510	**	**	3,170	4,450	4,690	C*	5	3,020	**	**	3,170	4,450	4,690	C*	2,810	**	**	3,170	4,450	4,690	C*			
Kapiolani Blvd	2	1,420	**	**	1,020	1,480	1,560	D	2	1,620	**	**	1,020	1,480	1,560	F	1,420	**	**	1,020	1,480	1,560	D			
Ala Moana Blvd	3	1,650	**	310	1,920	2,340	2,460	C	3	2,190	**	310	1,920	2,340	2,460	D	1,760	**	310	1,920	2,340	2,460	C			
Total		12,370						E		13,960						E	12,880						E	NO	NO	
Ward Avenue Koko Head bound																										
H-1 Fwy	3	6,150	1,620	2,630	3,800	4,920	5,590	F	4	7,370	2,210	3,580	5,180	6,710	7,620	E	7,320	2,210	3,580	5,180	6,710	7,620	E			
Kinai St	4	1,870	**	**	2,540	3,560	3,750	C*	4	1,800	**	**	2,540	3,560	3,750	C*	1,760	**	**	2,540	3,560	3,750	C*			
S King St	6	3,370	**	**	3,800	5,340	5,630	C*	6	3,710	**	**	3,800	5,340	5,630	C*	3,360	**	**	3,800	5,340	5,630	C*			
Kapiolani Blvd	4	1,840	**	**	2,110	2,970	3,130	C*	4	2,550	**	**	2,110	2,970	3,130	D	2,240	**	**	2,110	2,970	3,130	D			
Ala Moana Blvd	3	2,120	**	310	1,920	2,340	2,460	D	3	2,330	**	310	1,920	2,340	2,460	D	2,260	**	310	1,920	2,340	2,460	D			
Total		15,350						D		17,760						D	16,940						D	NO	NO	
H. Manoa-Palolo / Ala Wai Canal 'Ewa bound																										
Ala Moana Blvd	3	1,420	**	310	1,920	2,340	2,460	C	3	1,730	**	310	1,920	2,340	2,460	C	1,520	**	310	1,920	2,340	2,460	C			
Kalakaua Ave	2	1,050	**	**	1,020	1,480	1,560	D	2	1,080	**	**	1,020	1,480	1,560	D	1,080	**	**	1,020	1,480	1,560	D			
McCully St (NB)	2	1,140	**	**	1,020	1,480	1,560	D	2	1,160	**	**	1,020	1,480	1,560	D	1,090	**	**	1,020	1,480	1,560	D			
Date St	1	580	**	**	440	700	740	D	1	710	**	**	440	700	740	E	700	**	**	440	700	740	E			
Kapiolani Blvd	3	1,260	**	**	1,590	2,230	2,350	C*	3	1,320	**	**	1,590	2,230	2,350	C*	1,320	**	**	1,590	2,230	2,350	C*			
Old Waialae Rd	3	1,160	**	**	1,900	2,670	2,810	C*	3	1,230	**	**	1,900	2,670	2,810	C*	1,210	**	**	1,900	2,670	2,810	C*			
Dole St	2	670	**	**	1,020	1,480	1,560	C*	2	690	**	**	1,020	1,480	1,560	C*	690	**	**	1,020	1,480	1,560	C*			
H-1	3	5,500	1,620	2,630	3,800	4,920	5,590	E	3	5,970	1,620	2,630	3,800	4,920	5,590	F	5,880	1,620	2,630	3,800	4,920	5,590	F			
Total		12,780						D		13,890						E	13,490						E	NO	NO	
Manoa-Palolo / Ala Wai Canal Koko Head bound																										
Ala Moana Blvd	3	1,570	**	310	1,920	2,340	2,460	C	3	1,750	**	310	1,920	2,340	2,460	C	1,660	**	310	1,920	2,340	2,460	C			
Kalakaua Ave	3	1,870	**	**	1,590	2,230	2,350	D	3	1,990	**	**	1,590	2,230	2,350	D	1,970	**	**	1,590	2,230	2,350	D			
McCully St (SB)	2	870	**	**	1,020	1,480	1,560	C*	2	920	**	**	1,020	1,480	1,560	C*	900	**	**	1,020	1,480	1,560	C*			
Date St	2	640	**	**	1,020	1,480	1,560	C*	2	750	**	**	1,020	1,480	1,560	C*	770	**	**	1,020	1,480	1,560	C*			
Kapiolani Blvd	2	2,140	**	**	1,020	1,480	1,560	F	2	2,280	**	**	1,020	1,480	1,560	F	2,290	**	**	1,020	1,480	1,560	F			
S King St	2	2,400	**	**	1,220	1,770	1,870	F	2	2,370	**	**	1,220	1,770	1,870	F	2,360	**	**	1,220	1,770	1,870	F			
Dole St	2	960	**	**	1,020	1,480	1,560	C*	2	1,000	**	**	1,020	1,480	1,560	C*	970	**	**	1,020	1,480	1,560	C*			
H-1	3	5,890	1,620	2,630	3,800	4,920	5,590	F	3	6,550	1,620	2,630	3,800	4,920	5,590	F	6,470	1,620	2,630	3,800	4,920	5,590	F			
Total		16,340						E		17,610						E	17,390						E	NO	NO	

Notes:
 [a] Peak hour traffic count data was obtained from the State of Hawaii Department of Transportation (2005). Peak hour volumes for the HOV and zipper facilities on the H-1 Freeway were estimated based on Year 2005 Travel Demand Forecasting Model.
 [b] LOS thresholds were adapted from *Quality Level of Service Handbook (2002)* by the State of Florida's Department of Transportation (FDOT). The Handbook provides the Generalized Peak Hour Two-Way Volumes for Florida's Urbanized Areas (2002). A directional split of 50% was applied to the two-way volumes to generate the peak hour direction volume thresholds for the purpose of this analysis.
 * The reported level of service "C*" means C or better and "B*" means B or better.
 ** Level of Service thresholds not reported due to type of facility.

Table C-3: 2030 with First Project Salt Lake Option—A.M. Peak Hour Screenline Impacts Analysis (continued)

Screenline / Facility	Year 2005 Conditions								2030 No Build Conditions								2030 with First Project Salt Lake Option								Screenline Impact Analysis	
	Facility	Observed Volume* (vph)	Maximum Volume Threshold [b]					LOS [b]	Facility	Forecast Volume (vph) [a]	Maximum Volume Threshold [b]					LOS [b]	Forecast Volume (vph)	Maximum Volume Threshold [b]					LOS [b]	Project Impact? (Yes or No)	Cumulative Impact? (Yes or No)	
			A	B	C	D	E				A	B	C	D	E			A	B	C	D	E				
F. Kapalama Canal 'Ewa bound																										
Nimitz Hwy	2	1,340	**	200	1,240	1,560	1,640	D	3	3,590	**	310	1,920	2,340	2,460	F	1,580	**	310	1,920	2,340	2,460	C			
Dillingham Blvd	2	690	**	200	1,240	1,560	1,640	C	2	660	**	200	1,240	1,560	1,640	C	550	**	200	1,240	1,560	1,640	C			
N King St	2	600	**	**	1,020	1,480	1,560	C*	2	840	**	**	1,020	1,480	1,560	C*	770	**	**	1,020	1,480	1,560	C*			
H-1 Fwy	4	7,300	2,210	3,580	5,180	6,710	7,620	E	4	7,620	2,210	3,580	5,180	6,710	7,620	E	8,090	2,210	3,580	5,180	6,710	7,620	F			
Halona Street	2	1,160	**	**	1,220	1,770	1,870	C*	2	1,850	**	**	1,220	1,770	1,870	E	1,180	**	**	1,220	1,770	1,870	C*			
School St	2	780	**	**	1,020	1,480	1,560	C*	2	850	**	**	1,020	1,480	1,560	C*	920	**	**	1,020	1,480	1,560	C*			
Total		11,870						D		15,410						E	13,090						E	NO	NO	
Kapalama Canal Koko Head bound																										
Nimitz Hwy	4	3,210	**	400	2,530	3,030	3,180	F	3	2,580	**	310	1,920	2,340	2,460	F	3,150	**	310	1,920	2,340	2,460	F			
Nimitz Flyover (future facility)	NA	NA	NA	NA	NA	NA	NA	NA	2	1,420	1,030	1,680	2,420	3,130	3,560	B	1,310	1,030	1,680	2,420	3,130	3,560	B			
Dillingham Blvd	2	1,400	**	200	1,240	1,560	1,640	D	2	1,390	**	200	1,240	1,560	1,640	D	1,220	**	200	1,240	1,560	1,640	D			
N King St	2	1,340	**	**	1,020	1,480	1,560	D	2	1,400	**	**	1,020	1,480	1,560	D	1,320	**	**	1,020	1,480	1,560	D			
Olomea St	2	1,950	**	**	1,220	1,770	1,870	F	2	2,430	**	**	1,220	1,770	1,870	F	1,950	**	**	1,220	1,770	1,870	F			
H-1 Fwy	4	9,490	2,210	3,580	5,180	6,710	7,620	F	5	10,670	2,800	4,540	6,570	8,490	9,660	F	10,260	2,800	4,540	6,570	8,490	9,660	F			
School St	2	1,580	**	**	1,020	1,480	1,560	F	2	1,690	**	**	1,020	1,480	1,560	F	1,550	**	**	1,020	1,480	1,560	E			
Total		18,970						F		21,580						E	20,760						E	NO	NO	
G. Ward Avenue 'Ewa bound																										
H-1 Fwy	3	7,290	1,620	2,630	3,800	4,920	5,590	F	3	7,380	1,620	2,630	3,800	4,920	5,590	F	7,380	1,620	2,630	3,800	4,920	5,590	F			
Beretania St	5	2,790	**	**	3,170	4,450	4,690	C*	5	3,300	**	**	3,170	4,450	4,690	D	3,160	**	**	3,170	4,450	4,690	C*			
Kapiolani Blvd	4	1,920	**	**	2,110	2,970	3,130	C*	4	2,560	**	**	2,110	2,970	3,130	D	2,200	**	**	2,110	2,970	3,130	D			
Ala Moana Blvd	3	1,800	**	310	1,920	2,340	2,460	C	3	2,150	**	310	1,920	2,340	2,460	D	2,150	**	310	1,920	2,340	2,460	D			
Total		13,800						E		15,390						E	14,890						E	NO	NO	
Ward Avenue Koko Head bound																										
H-1 Fwy	3	5,740	1,620	2,630	3,800	4,920	5,590	F	4	6,810	2,210	3,580	5,180	6,710	7,620	E	6,800	2,210	3,580	5,180	6,710	7,620	E			
Kinau St	3	1,250	**	**	1,900	2,670	2,810	C*	3	1,150	**	**	1,900	2,670	2,810	C*	1,080	**	**	1,900	2,670	2,810	C*			
S King St	5	2,080	**	**	3,170	4,450	4,690	C*	5	2,800	**	**	3,170	4,450	4,690	C*	2,340	**	**	3,170	4,450	4,690	C*			
Kapiolani Blvd	2	710	**	**	1,020	1,480	1,560	C*	2	820	**	**	1,020	1,480	1,560	C*	780	**	**	1,020	1,480	1,560	C*			
Ala Moana Blvd	3	1,610	**	310	1,920	2,340	2,460	C	3	1,740	**	310	1,920	2,340	2,460	C	1,560	**	310	1,920	2,340	2,460	C			
Total		11,390						E		13,320						D	12,560						D	NO	NO	

Notes:

[a] Peak hour traffic count data was obtained from the State of Hawaii Department of Transportation (2005).

[b] LOS thresholds were adapted from *Quality Level of Service Handbook (2002)* by the State of Florida's Department of Transportation (FDOT). The Handbook provides the Generalized Peak Hour Two-Way Volumes for Florida's Urbanized Areas (2002). A directional split of 50% was applied to the two-way volumes to generate the peak hour direction volume thresholds for the purpose of this analysis.

* The reported level of service "C*" means C or better and "B*" means B or better.

** Level of Service thresholds not reported due to type of facility.

Table C-4: 2030 with First Project Salt Lake Option—P.M. Peak Hour Screenline Impacts Analysis

Screenline / Facility	Year 2005 Conditions					2030 No Build Conditions					2030 with First Project Salt Lake Option)					Screenline Impact Analysis									
	Facility	Observed Volume (vph) [a]	Maximum Volume Threshold [b]					LOS [b]	Facility	Forecast Volume (vph)	Maximum Volume Threshold [b]					LOS [b]	Forecast Volume (vph)	Maximum Volume Threshold [b]					LOS [b]	Project Impact? (Yes or No)	Cumulative Impact? (Yes or No)
			A	B	C	D	E				A	B	C	D	E			A	B	C	D	E			
B. 'Ewa 'Wai'anae bound																									
H-1 Fwy	3	4,110	1,620	2,630	3,800	4,920	5,590	D	3	3,920	1,620	2,630	3,800	4,920	5,590	D	4,270	1,620	2,630	3,800	4,920	5,590	D		
H-1 Fwy future HOV	NA	NA	515	839	1,213	1,568	1,783	NA	1	1,100	515	839	1,213	1,568	1,783	C	1,110	515	839	1,213	1,568	1,783	C		
Farrington Hwy	1	310	**	200	660	780	810	C	2	350	**	200	1,240	1,560	1,640	C	450	**	200	1,240	1,560	1,640	C		
Fort Weaver Rd (SB)	2	2,400	**	200	1,240	1,560	1,640	F	2	2,250	**	200	1,240	1,560	1,640	F	2,310	**	200	1,240	1,560	1,640	F		
Total		6,820						E		7,620						D	8,140						D	NO	NO
'Ewa Koko Head bound																									
H-1 Fwy	3	4,080	1,620	2,630	3,800	4,920	5,590	D	3	5,500	1,620	2,630	3,800	4,920	5,590	E	6,060	1,620	2,630	3,800	4,920	5,590	F		
H-1 Fwy future HOV	NA	NA	515	839	1,213	1,568	1,783	NA	1	990	515	839	1,213	1,568	1,783	C	930	515	839	1,213	1,568	1,783	C		
Farrington Hwy	2	620	230	1,390	1,650	1,700	**	B	3	290	**	310	1,920	2,340	2,460	B*	510	**	310	1,920	2,340	2,460	C		
Fort Weaver Rd (NB)	2	2,060	**	200	1,240	1,560	1,640	F	2	2,450	**	200	1,240	1,560	1,640	F	2,540	**	200	1,240	1,560	1,640	F		
Total		6,760						D		9,230						E	10,040						F	NO	NO
C. Waikele Stream 'Ewa bound																									
H-1 Fwy	4	6,710	2,210	3,580	5,180	6,710	7,620	E	4	8,450	2,210	3,580	5,180	6,710	7,620	F	8,550	2,210	3,580	5,180	6,710	7,620	F		
H-1 Fwy future HOV	NA	NA	515	839	1,213	1,568	1,783	NA	1	490	515	839	1,213	1,568	1,783	A	440	515	839	1,213	1,568	1,783	A		
Waipahu St	1	530	**	**	440	700	740	D	1	170	**	**	440	700	740	C*	150	**	**	440	700	740	C*		
Farrington Hwy	2	1,280	**	200	1,240	1,560	1,640	D	4	1,150	**	400	2,530	3,030	3,180	C	1,250	**	400	2,530	3,030	3,180	C		
Total		8,520						E		10,260						E	10,390						E	NO	NO
Waikele Stream Koko Head bound																									
H-1 Fwy	4	4,790	2,210	3,580	5,180	6,710	7,620	C	5	6,360	2,800	4,540	6,570	8,490	9,660	C	7,030	2,800	4,540	6,570	8,490	9,660	D		
Waipahu St	1	420	**	**	440	700	740	C*	1	300	**	**	440	700	740	C*	390	**	**	440	700	740	C*		
Farrington Hwy	2	790	**	200	1,240	1,560	1,640	C	3	640	**	310	1,920	2,340	2,460	C	860	**	310	1,920	2,340	2,460	C		
Total		6,000						C		7,300						C	8,280						D	NO	NO
D. Kalauao 'Ewa bound																									
H-1 Fwy	5	8,410	2,800	4,540	6,570	8,490	9,660	D	4	8,670	2,210	3,580	5,180	6,710	7,620	F	8,610	2,210	3,580	5,180	6,710	7,620	F		
H-1 Fwy HOV	1	1,530	515	839	1,213	1,568	1,783	D	1	1,720	515	839	1,213	1,568	1,783	E	1,490	515	839	1,213	1,568	1,783	D		
H-1 Fwy Future Zipper Lane	NA	NA	515	839	1,213	1,568	1,783	NA	1	950	515	839	1,213	1,568	1,783	C	810	515	839	1,213	1,568	1,783	C		
Moanalua Rd	2	2,020	**	**	1,020	1,480	1,560	F	2	2,060	**	**	1,020	1,480	1,560	F	1,860	**	**	1,020	1,480	1,560	F		
Kamehameha Hwy	3	2,110	**	310	1,920	2,340	2,460	D	3	2,140	**	310	1,920	2,340	2,460	D	2,000	**	310	1,920	2,340	2,460	D		
Total		14,070						D		15,540						E	14,770						E	NO	NO
Kalauao Koko Head bound																									
H-1 Fwy	4	5,740	2,210	3,580	5,180	6,710	7,620	D	5	7,240	2,800	4,540	6,570	8,490	9,660	D	7,870	2,800	4,540	6,570	8,490	9,660	D		
H-1 Fwy HOV (Existing only)	1	1,360	515	839	1,213	1,568	1,783	D	NA	NA	515	839	1,213	1,568	1,783	NA	NA	515	839	1,213	1,568	1,783	NA		
Moanalua Rd	2	870	**	**	1,020	1,480	1,560	C*	2	970	**	**	1,020	1,480	1,560	C*	900	**	**	1,020	1,480	1,560	C*		
Kamehameha Hwy	3	1,500	**	310	1,920	2,340	2,460	C	3	1,680	**	310	1,920	2,340	2,460	C	1,720	**	310	1,920	2,340	2,460	C		
Total		9,470						D		9,890						D	10,490						D	NO	NO
E. Salt Lake 'Ewa bound																									
Moanalua Fwy	4	5,900	2,210	3,580	5,180	6,710	7,620	D	4	5,890	2,210	3,580	5,180	6,710	7,620	D	5,790	2,210	3,580	5,180	6,710	7,620	D		
H-1 Fwy	4	3,550	2,210	3,580	5,180	6,710	7,620	B	4	3,460	2,210	3,580	5,180	6,710	7,620	B	3,660	2,210	3,580	5,180	6,710	7,620	C		
H-1 Fwy HOV	1	1,410	515	839	1,213	1,568	1,783	D	1	1,320	515	839	1,213	1,568	1,783	D	1,040	515	839	1,213	1,568	1,783	C		
H-1 Fwy Future zipper lane	NA	NA	515	839	1,213	1,568	1,783	NA	1	810	515	839	1,213	1,568	1,783	B	660	515	839	1,213	1,568	1,783	B		
Nimitz Hwy	3	2,460	**	310	1,920	2,340	2,460	E	3	3,150	**	310	1,920	2,340	2,460	F	2,430	**	310	1,920	2,340	2,460	E		
Salt Lake Bl	1	730	**	**	440	700	740	E	2	990	**	**	1,020	1,480	1,560	C*	800	**	**	1,020	1,480	1,560	C*		
Total		14,050						D		15,620						D	14,380						D	NO	NO
Salt Lake Koko Head bound																									
Moanalua Fwy	2	3,330	1,030	1,680	2,420	3,130	3,560	E	2	3,510	1,030	1,680	2,420	3,130	3,560	E	2,670	1,030	1,680	2,420	3,130	3,560	D		
Moanalua Fwy HOV	1	240	515	839	1,213	1,568	1,783	A	1	960	515	839	1,213	1,568	1,783	C	1,000	515	839	1,213	1,568	1,783	C		
H-1 Fwy + Shoulder Express (1 lane)	4	4,500	2,210	3,580	5,180	6,710	7,620	C	4	4,090	2,210	3,580	5,180	6,710	7,620	C	4,330	2,210	3,580	5,180	6,710	7,620	C		
H-1 Fwy HOV (1 lane)	1	330	515	839	1,213	1,568	1,783	A	1	1,070	515	839	1,213	1,568	1,783	C	1,020	515	839	1,213	1,568	1,783	C		
Nimitz Hwy	5	1,500	**	500	3,160	3,790	3,980	C	5	3,130	**	500	3,160	3,790	3,980	C	1,560	**	500	3,160	3,790	3,980	C		
Salt Lake Bl	1	350	**	**	440	700	740	C*	2	450	**	**	1,020	1,480	1,560	C*	410	**	**	1,020	1,480	1,560	C*		
Total		10,250						D		13,210						D	10,990						C	NO	NO

Table C-4: 2030 with First Project Salt Lake Option—P.M. Peak Hour Screenline Impacts Analysis (continued)

Screenline / Facility	Year 2005 Conditions								2030 No Build Conditions								2030 with First Project Salt Lake Option)								Screenline Impact Analysis	
	Facility	Observed Volume (vph) [a]	Maximum Volume Threshold [b]					LOS [b]	Facility	Forecast Volume (vph)	Maximum Volume Threshold [b]					LOS [b]	Forecast Volume (vph)	Maximum Volume Threshold [b]					LOS [b]	Project Impact? (Yes or No)	Cumulative Impact? (Yes or No)	
			A	B	C	D	E				A	B	C	D	E			A	B	C	D	E				
F. Kapalama Canal 'Ewa bound																										
Nimitz Hwy	3	1,780	**	310	1,920	2,340	2,460	C	3	1,790	**	310	1,920	2,340	2,460	C	1,520	**	310	1,920	2,340	2,460	C			
Nimitz Flyover (Future Facility)	NA	NA	NA	NA	NA	NA	NA	NA	2	880	1,030	1,680	2,420	3,130	3,560	A	810	1,030	1,680	2,420	3,130	3,560	A			
Dillingham Blvd	2	1,460	**	200	1,240	1,560	1,640	D	2	1,350	**	200	1,240	1,560	1,640	D	900	**	200	1,240	1,560	1,640	C			
N King St	2	1,340	**	**	1,020	1,480	1,560	D	2	1,440	**	**	1,020	1,480	1,560	D	1,310	**	**	1,020	1,480	1,560	D			
H-1 Fwy	4	7,570	2,210	3,580	5,180	6,710	7,620	E	4	8,050	2,210	3,580	5,180	6,710	7,620	F	8,180	2,210	3,580	5,180	6,710	7,620	F			
Halona St	2	1,800	**	**	1,220	1,770	1,870	E	2	2,230	**	**	1,220	1,770	1,870	F	1,730	**	**	1,220	1,770	1,870	D			
School St	2	1,220	**	**	1,020	1,480	1,560	D	2	1,380	**	**	1,020	1,480	1,560	D	1,240	**	**	1,020	1,480	1,560	D			
Total		15,170						E		17,120						E	15,690						E	NO	NO	
Kapalama Canal Koko Head bound																										
Nimitz Hwy	3	2,770	**	310	1,920	2,340	2,460	F	3	4,250	**	310	1,920	2,340	2,460	F	3,280	**	310	1,920	2,340	2,460	F			
Dillingham Blvd	2	1,080	**	200	1,240	1,560	1,640	C	2	1,100	**	200	1,240	1,560	1,640	C	1,020	**	200	1,240	1,560	1,640	C			
N King St	2	1,110	**	**	1,020	1,480	1,560	D	2	1,560	**	**	1,020	1,480	1,560	D	1,420	**	**	1,020	1,480	1,560	D			
Olomea St	2	1,670	**	**	1,220	1,770	1,870	D	2	1,890	**	**	1,220	1,770	1,870	F	1,670	**	**	1,220	1,770	1,870	D			
H-1 Fwy	4	7,320	2,210	3,580	5,180	6,710	7,620	E	5	8,040	2,800	4,540	6,570	8,490	9,660	D	7,980	2,800	4,540	6,570	8,490	9,660	D			
School St	2	990	**	**	1,020	1,480	1,560	C*	2	1,210	**	**	1,020	1,480	1,560	D	1,160	**	**	1,020	1,480	1,560	D			
Total		14,940						E		18,050						D	16,530						D	NO	NO	
G. Ward Avenue 'Ewa bound																										
H-1 Fwy	3	6,790	1,620	2,630	3,800	4,920	5,590	F	3	7,130	1,620	2,630	3,800	4,920	5,590	F	6,920	1,620	2,630	3,800	4,920	5,590	F			
Beretania St	5	2,510	**	**	3,170	4,450	4,690	C*	5	3,020	**	**	3,170	4,450	4,690	C*	2,800	**	**	3,170	4,450	4,690	C*			
Kapiolani Blvd	2	1,420	**	**	1,020	1,480	1,560	D	2	1,620	**	**	1,020	1,480	1,560	F	1,460	**	**	1,020	1,480	1,560	D			
Ala Moana Blvd	3	1,650	**	310	1,920	2,340	2,460	C	3	2,190	**	310	1,920	2,340	2,460	D	1,780	**	310	1,920	2,340	2,460	C			
Total		12,370						E		13,960						E	12,960						E	NO	NO	
Ward Avenue Koko Head bound																										
H-1 Fwy	3	6,150	1,620	2,630	3,800	4,920	5,590	F	4	7,370	2,210	3,580	5,180	6,710	7,620	E	7,330	2,210	3,580	5,180	6,710	7,620	E			
Kinau St	4	1,870	**	**	2,540	3,560	3,750	C*	4	1,800	**	**	2,540	3,560	3,750	C*	1,770	**	**	2,540	3,560	3,750	C*			
S King St	6	3,370	**	**	3,800	5,340	5,630	C*	6	3,710	**	**	3,800	5,340	5,630	C*	3,370	**	**	3,800	5,340	5,630	C*			
Kapiolani Blvd	4	1,840	**	**	2,110	2,970	3,130	C*	4	2,550	**	**	2,110	2,970	3,130	D	2,280	**	**	2,110	2,970	3,130	D			
Ala Moana Blvd	3	2,120	**	310	1,920	2,340	2,460	D	3	2,330	**	310	1,920	2,340	2,460	D	2,270	**	310	1,920	2,340	2,460	D			
Total		15,350						D		17,760						D	17,020						D	NO	NO	

Notes:
 [a] Peak hour traffic count data was obtained from the State of Hawaii Department of Transportation (2005).
 [b] LOS thresholds were adapted from *Quality Level of Service Handbook (2002)* by the State of Florida's Department of Transportation (FDOT). The Handbook provides the Generalized Peak Hour Two-Way Volumes for Florida's Urbanized Areas (2002). A directional split of 50% was applied to the two-way volumes to generate the peak hour direction volume thresholds for the purpose of this analysis.
 * The reported level of service "C*" means C or better and "B*" means B or better.
 ** Level of Service thresholds not reported due to type of facility.