

Draft Travel Demand Model Elements and Preferred ORTP 2035 Scenario Analysis Report Oahu Regional Transportation Plan 2035 Project

Deliverables 10.2.2 and 10.3.2



July 2011
Prepared for the
Oahu Metropolitan Planning Organization

Prepared by
Parsons Brinckerhoff

This report was funded in part through grants from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation. The views and opinions of the agency expressed herein do not necessarily state or reflect those of the U. S. Department of Transportation.

Table of Contents

EXECUTIVE SUMMARY	S-1
1 INTRODUCTION	1-1
1.1 Report Purpose	1-1
1.2 Report Overview.....	1-1
2 ORTP 2035 OVERVIEW.....	2-1
3 TRAVEL DEMAND FORECASTING RESULTS	3-1
3.1 Person Trips by Purpose and Mode	3-1
3.2 Highway Assignment Results	3-4
3.2.1 Vehicle Miles of Travel.....	3-4
3.2.2 Vehicle Hours of Travel.....	3-5
3.2.3 Vehicle Hours of Delay	3-6
3.3 Transit Assignment Results.....	3-8
3.4 ORTP 2035 Travel Patterns	3-9
3.4.1 Screenline Person Trips.....	3-9
3.4.2 Mode Share	3-12
3.4.3 Average Vehicle Occupancy.....	3-13
4 ORTP 2035 CONDITIONS AND PERFORMANCE: TRANSIT	4-1
4.1 System Characteristics.....	4-1
4.2 System Performance	4-1
5 ORTP 2035 CONDITIONS AND PERFORMANCE: STREETS AND HIGHWAYS... 5-1	5-1
5.1 System Characteristics.....	5-1
5.1.1 Roadway System.....	5-1
5.2 System Performance	5-1
5.2.1 Highway and Arterial Level of Service	5-1
5.2.2 Auto Travel Times to Selected Destinations	5-8
5.2.3 Intermodal Freight Connections.....	5-9
5.2.4 Freight Travel Times for Selected Origin-Destination Pairs	5-9
5.2.5 Accident Risks	5-17
6 ORTP 2035 CONDITIONS AND PERFORMANCE: BICYCLE AND PEDESTRIAN FACILITIES	6-1
7 NATURAL AND HUMAN ENVIRONMENT	7-1
7.1 Susceptibility to Climate Change.....	7-1
7.2 Air Quality and Fuel Consumption.....	7-1
7.3 Title VI/Environmental Justice (T6/EJ).....	7-2
7.3.1 Accessibility	7-2

Table of Contents (Continued)

<u>Section</u>	<u>Page</u>
7.3.2 Equity	7-5
7.3.3 Mobility	7-5
8 PERFORMANCE EVALUATION SUMMARY	8-1
9 BIBLIOGRAPHY	9-1
APPENDIX A: AREA TYPE DEFINITIONS	
APPENDIX B: ENVIRONMENTAL AND COMMUNITY CONSIDERATIONS MATRIX	

List of Tables

Table 2-1. ORTP 2035 Preferred Scenario Projects and Programs	2-1
Table 2-2. ORTP 2035 Preferred Scenario Added Project Lane-Miles by Facility Type and Area Type	2-10
Table 3-1. ORTP 2035 Preferred Scenario Mode Choice Summary Results by Trip Purpose for Residents and Percent	3-2
Table 3-2. Comparison of ORTP 2035 Preferred Scenario to 2035 Baseline Mode Choice Results by Purpose for Residents (Change and Percent Change)	3-3
Table 3-3. Daily Vehicle Miles Traveled (2035 Baseline and ORTP 2035)	3-4
Table 3-4. ORTP 2035 VMT by Facility Type and Area Type and Percent Change from 2035 Baseline	3-5
Table 3-5. Daily Vehicle Hours Traveled (2035 Baseline and ORTP 2035)	3-6
Table 3-6. ORTP 2035 VHT by Facility Type and Area Type and Percent Change from 2035 Baseline	3-6
Table 3-7. AM Two-Hour Peak Period Vehicle Hours of Delay (2035 Baseline and ORTP 2035)	3-7
Table 3-8. Daily Vehicle Hours of Delay (2035 Baseline and ORTP 2035)	3-7
Table 3-9. ORTP 2035 VHD by Facility Type and Area Type and Percent Change from 2035 Baseline	3-8
Table 3-10. ORTP 2035 Transit Boardings by Period and Mode and Percent Change from 2035 Baseline	3-9
Table 3-11. ORTP 2035 Daily Screenline Person Trips and Change and Percent Change from 2035 Baseline	3-12
Table 3-12. Mode Share Estimates (2035 Baseline and ORTP 2035)	3-13

Table 5-1. AM Two-Hour Peak Period Arterial LOS (lane-miles) – 2035 Baseline and ORTP 2035	5-2
Table 7-1. T6/EJ TAZs within 20 minutes of Selected Destinations – AM Peak Period ...	7-3
Table 7-2. T6/EJ TAZs within 20 minutes of Selected Destinations –Off Peak	7-4
Table 7-3. T6/EJ Equity Analysis – Distribution of Total ORTP 2035 Dollars.....	7-5
Table 7-4. T6/EJ Mobility – Average Travel Time to Employment Centers (AM Peak)	7-5
Table 8-1. ORTP 2035 Preferred Scenario Evaluation Summary	8-2

List of Figures

Figure 3-1: Screenline Locations (Islandwide)	3-10
Figure 3-2: Screenline Locations (Honolulu and Surrounding Areas).....	3-11
Figure 5-1: ORTP 2035 AM Two-Hour Peak Period LOS – Islandwide.....	5-3
Figure 5-2: ORTP 2035 AM Two-Hour Peak Period LOS – Kapolei and Ewa Area	5-4
Figure 5-3: ORTP 2035 AM Two-Hour Peak Period LOS – H-1/H-2 Merge.....	5-5
Figure 5-4: ORTP 2035 AM Two-Hour Peak Period LOS – H-1/H-201/H-3	5-6
Figure 5-5: ORTP 2035 AM Two-Hour Peak Period LOS – H-1 Downtown	5-7
Figure 5-6: ORTP 2035 AM Two-Hour Peak Period Auto Travel Times to Downtown Honolulu	5-10
Figure 5-7: Travel Time Difference to Downtown Honolulu – 2035 Baseline and ORTP 2035	5-11
Figure 5-8: ORTP 2035 AM Two-Hour Peak Period Auto Travel Times to Kapolei.....	5-12
Figure 5-9: Travel Time Difference to Kapolei – 2035 Baseline and ORTP 2035	5-13
Figure 5-10: ORTP 2035 AM Two-Hour Peak Period Auto Travel Times to Waikiki	5-14
Figure 5-11: ORTP 2035 AM Two-Hour Peak Period Auto Travel Times to Mililani.....	5-15
Figure 5-12: ORTP 2035 AM Two-Hour Peak Period Auto Travel Times to Honolulu International Airport.....	5-16

Acronyms Used in this Document

ADA	Americans with Disabilities Act of 1990
AVO	Average Vehicle Occupancy
DTA	Dynamic Traffic Assignment
EJ	Environmental Justice, as defined by Executive Order 12898 issued on February 11, 1994
HHCTCP	Honolulu High-Capacity Transit Corridor Project
HOV	High Occupancy Vehicle
HSIP	Highway Safety Improvement Program
ITS	Intelligent Transportation System
LOS	Level-of-Service
OD	Origin-Destination
ORTP	Oahu Regional Transportation Plan
SMP	Special Maintenance Program
T6	Title VI of the Civil Rights Act of 1964
TAA	Transportation Analysis Area
TAZ	Traffic Analysis Zone
TDM	Transportation Demand Management
TIP	Transportation Improvement Program
TSM	Transportation System Management
VMT	Vehicle Miles of Travel
VHT	Vehicle Hours of Travel
VHD	Vehicle Hours of Delay
\$YOE	Year-of-Expenditure Dollars

Executive Summary

This report provides information regarding the performance of the ORTP 2035 preferred scenario multi-modal transportation system on the island of Oahu in the year 2035. This information identifies and discusses project performance measures, which are associated with five overarching goals that address the topics of transportation facilities, transportation operations and services, natural environment, human environment and quality of life, and land use and transportation integration. Performance of the ORTP 2035 preferred scenario is compared to the 2035 baseline. Because both forecasts are based on the same year 2035 land use forecasts, there are no socioeconomic comparisons to be made.

Information on forecasted travel patterns includes daily screenline person trips, mode share, average vehicle occupancy, vehicle miles of travel, vehicle hours of travel, and vehicle hours of delay. Transit system performance measures include system characteristics, transit travel times to selected destinations, and system-wide transit ridership. Information on roadways includes facility level-of-service, auto travel times, accident risks, freight connections, and freight travel times. Anticipated changes to bicycle and pedestrian facilities are also described. Finally, information related to the natural and human environment includes a discussion of transportation facilities that could be susceptible to the impacts of global climate change, the anticipated effect of forecasted vehicle miles of travel in terms of air quality, and results of environmental justice analyses for accessibility and mobility.

Key findings documented in this memorandum include the following:

- Transit mode share for total daily trips is projected to remain essentially the same, at six percent for both the 2035 Baseline and ORTP 2035 scenarios.
- Related to overall trips, total vehicle miles traveled (VMT) is forecasted to increase slightly, up one percent from the 2035 Baseline. Most of this slight increase was the result of induced demand and occurred on expressways as portions of Farrington Highway and Kamehameha Highway were widened, which provided more capacity and relieved congestion in those areas. Freeways and arterials saw the largest VMT increases, of 39.2 and 32.6 percent, respectively.
- In the ORTP 2035, daily vehicle hours of travel (VHT) are anticipated to decline by 3.3 percent overall compared to the 2035 Baseline. Vehicle Hours of Delay (VHD) between the 2035 Baseline and ORTP 2035 are projected to decrease noticeably, by 15.7 percent overall. Expressways experienced the largest decrease, of 33.6 percent, or 3,900 hours of delay less daily. The decrease in VHT and VHD, despite the slight increase in VMT, illustrates a less congested system with the ORTP 2035 preferred scenario.
- Travel times are projected to improve throughout the island with the ORTP 2035 preferred scenario as compared to the 2035 baseline. This is

particularly true for trips from the Waianae Coast to key destinations including Kapolei, Downtown Honolulu, and Waikiki.

- The highway improvements in the ORTP 2035 preferred scenario are anticipated to benefit freight mobility on Oahu. For example, improvement and modification of the freeway access to Interstate Route H-1 between Makakilo Interchange and Palailai Interchange (Kapolei Interchange Complex) will improve the ability of freight to move to and from Kalaeloa Barbers Point Harbor and Campbell Industrial Park. Congestion mitigation projects in the ORTP 2035 are likewise anticipated to benefit freight mobility by improving the flow of traffic, specifically by reducing VHD and VHT.
- The ORTP 2035 preferred scenario includes projects that would improve the conditions of bicycle and pedestrian facilities on the island for users of all experience and comfort levels. These include the implementation of Oahu elements of the State's *Bike Plan Hawaii* and the City's *Oahu Bike Plan*. Also included is the development and future implementation of the *Statewide Pedestrian Master Plan*.
- Census block groups designated as Title VI/Environmental Justice (T6/EJ) would, on average, receive about 40 percent more investment dollars than non T6/EJ designated block groups in the ORTP 2035 preferred scenario. Also, while T6/EJ block groups combined would receive fewer dollars overall than non T6/EJ block groups (because there are a lot fewer T6/EJ blocks), the average per capita investment for T6/EJ groups would be slightly higher.
- When evaluated across the 36 identified project performance measures, the ORTP 2035 preferred scenario results in improvement over the 2035 baseline for a majority of the performance measures (24 out of 36); is similar to the 2035 baseline in performance for 8 of the 36 measures; and may perform worse than the 2035 baseline for 4 of the 36 measures (cost, disruption during construction, and effects on the natural and built environment). The latter three measures would be addressed through mitigation identified during the environmental process for specific elements of the preferred scenario. Overall however, the ORTP 2035 preferred scenario has a very positive effect on the Oahu transportation system.

1.1 Report Purpose

This report includes documentation of the projects in the preferred ORTP 2035 scenario that were included in the travel demand model along with the subsequent travel demand forecasting results. The performance of the multi-modal ORTP 2035 preferred scenario is also described in terms of the project performance measures identified in Deliverable 9.1.2 *ORTP Scenarios Evaluation Methodology Technical Memorandum* in comparison to the 2035 Baseline scenario.

1.2 Report Overview

This report provides a review of the ORTP 2035 preferred scenario travel demand forecast results affecting the transportation system on the island of Oahu and an evaluation of that scenario against identified performance measures. Socio-economic and demographic data are the same for the 2035 baseline and the ORTP 2035 scenarios, and were presented in Deliverable 7.1.1, *Socioeconomic Data Reasonableness Report*. These data are not presented again in this report. The remainder of the document discusses the following:

- Section 2 provides an overview of the ORTP 2035 projects and which ones were used for modeling.
- Section 3 summarizes the travel demand forecasting results such as trip distribution and mode choice.
- Section 4 discusses the ORTP 2035 performance with regard to transit.
- Section 5 discusses the ORTP 2035 performance with regard to streets and highways.
- Section 6 discusses the ORTP 2035 performance with regard to bicycle and pedestrian facilities.
- Section 7 discusses the ORTP 2035 performance with regard to the natural and human environment.
- Section 8 presents a performance evaluation summary of the ORTP 2035 in comparison to the 2035 Baseline in relation to the project performance measures. There are five overarching goals, with 31 individual performance measures.

The ORTP 2035 preferred scenario contains a total of 69 projects and programs worth a total of roughly \$23.8 billion meant to sustain, improve, and expand Oahu's transportation system with support for all the various users and modes. This fiscally constrained plan was developed in coordination with various Federal, State, and City agencies, stakeholders, and residents from around the island. The ORTP 2035 is intended to integrate Oahu's transportation system with the various land uses expected for each of the eight planning districts, while supporting anticipated growth and development. The projects and programs included in the Plan were selected based on their effectiveness and efficiency in addressing the various needs of the transportation system with regard to all user groups.

The projects and programs contained in the ORTP 2035 preferred scenario are shown in Table 2-1. Of the 69 mid-range and long-range projects shown, 28 of them were included in the travel demand model. The travel demand forecasting model does not have the capability to model pedestrian or bikeway facility projects, or strategies such as intelligent transportation system (ITS) techniques, vanpool programs, travel demand management, or operations and maintenance programs. The table shown here identifies the source of the project (e.g., as coming from the Transportation Improvement Program (TIP), the ORTP 2030 Plan, etc.), the project sponsor (i.e., City or State), project title, project description, whether the project was included in the travel demand forecasting model, and estimated capital cost in year-of-expenditure dollars (\$YOE). As described in one of the footnotes to the table, it should be noted that the TIP project(s) listed may comprise only selected portion(s) or phase(s) of a multi-phase project or program.

Table 2-2 shows the lane-miles by facility type and area type added to the islandwide transportation system by the ORTP 2035 preferred scenario projects and programs. See Appendix A for area type definitions. Overall, the ORTP 2035 adds over 2,300 lane-miles of roadway facilities to the islandwide transportation system ranging from new local streets to additional freeway lanes.

Table 2-1. ORTP 2035 Preferred Scenario Projects and Programs

Source	City/State	Facility/Project Title	Project Description	Included in Travel Demand Model	Estimated Cost in \$M (\$YOE)
ISLANDWIDE PROJECTS – 2011 TO 2020					
ORTP 2030	S	<i>Bike Plan Hawaii - Oahu</i>	Implement Oahu elements of the State of Hawaii's <i>Bike Plan Hawaii</i> (2003).		\$40.0
ORTP 2030	C/S	Enhancement Projects	Implement enhancement projects, including, but not limited to, projects from the Transportation Enhancement Program for Oahu.		\$8.7
New Federally-required program	C	Human Services Transportation Coordination Program	Provide a range of transportation services targeted to disadvantaged populations under the Human Services Transportation Coordination Program.		\$16.5

Source	City/State	Facility/Project Title	Project Description	Included in Travel Demand Model	Estimated Cost in \$M (\$YOE)
ORTP 2030	C/S	Intelligent Transportation Systems (ITS)	Implement ITS projects including, but not limited to, those identified in the Oahu Regional ITS Architecture.		\$50.8
ORTP 2030	C	Joint Traffic Management Center	Construct a transportation management center behind the Alapai Transit Center that will combine transportation management with City, State, and emergency response agencies.		\$68.9
Updated Bike Plan	C	<i>Oahu Bike Plan</i>	Implement City and County Bike Projects.		\$22.5
ORTP 2030	S	Transportation Demand Management (TDM) Program	Develop an aggressive TDM program that could include, but is not limited to: 1. Free real-time online carpool matching, 2. Outreach promotion and marketing of alternative transportation, 3. Emergency ride home program, 4. Major special events, 5. Employer based commuter programs, 6. Emerging and innovative strategies (e.g., car sharing).		\$10.0
ORTP 2030	S	Vanpool Program	Continue implementation and expansion of the State's Vanpool Hawaii program.		\$26.1
SAFETY AND OPERATIONAL IMPROVEMENT PROJECTS – 2011 TO 2020					
HSIP	S	Highway Safety Improvement Program	Comprehensive program to fund safety improvements to reduce collisions and damage to property. Strategies may include installation of left turn lanes, roadway widening, traffic signal modifications, installation of rumble strips and crash attenuators, installation of guardrails and bridge railings and others.		\$27.4
ORTP 2030	S	Kamehameha Highway, Safety Improvements, Haleiwa to Kahaluu	Construct safety improvements along Kamehameha Highway, from Haleiwa to Kahaluu. Safety improvements include turn lanes, guardrails, signage, crosswalks, etc. to improve safety. Widening of Kamehameha Highway will only be in areas where needed for storage/turn lanes safety improvements.		\$49.5
ORTP 2030	S	Kamehameha Highway, Safety & Operational Improvements, Kaalaea Stream to Hygienic Store	Construct safety and operational improvements along Kamehameha Highway, between Kaalaea Stream and Hygienic Store. Safety and operational improvements include passing and turning lanes, modification of signals, and installation of signs, flashers, and other warning devices. This project also includes replacement of Kaalaea Stream Bridge and Haiamoa Stream Bridge with structures that meet current design standards.		\$17.0
ORTP 2030	S	Kalaniana'ole Highway, Safety & Operational Improvements, Olomana Golf Course to Waimanalo Beach Park	Construct safety and operational improvements along Kalaniana'ole Highway between the Olomana Golf Course and Waimanalo Beach Park. Specific safety and operational improvements include construction of turning lanes, sidewalks, wheelchair ramps, bike paths or bike lanes, traffic signal upgrades, utility relocation, and drainage improvements.		\$41.0

Source	City/State	Facility/Project Title	Project Description	Included in Travel Demand Model	Estimated Cost in \$M (\$YOE)
ORTP 2030	S	Rockfall Protection, Various Locations	Install rockfall protection or mitigation measures along various state highways at various locations.		\$50.0
ORTP 2030	S	Shoreline Protection Program	Protect shoreline along Kamehameha Highway and other locations.		\$20.0
CONGESTION RELIEF PROJECTS – 2011 TO 2020					
ORTP 2030	S	Interstate Route H-1, New Interchange, Kapolei Interchange	Construct new Interstate Route H-1 Kapolei Interchange for Kapolei between the Palailai Interchange and Makakilo Interchange. Project to be constructed in multiple phases.	✓	\$47.7
ORTP 2030	S	Hanua Street Extension, Farrington Highway to Malakole Street; Interstate Route H-1, New On- & Off-Ramps, Palailai Interchange	Hanua Street: • Extend Hanua Street from Malakole Street to Farrington Highway. This new four-lane roadway will provide access to Kalaeloa Harbor. Interstate Route H-1, Palailai Interchange: • Construct new on- and off-ramps at Interstate Route H-1 Palailai Interchange to Hanua Street extension.	✓	\$120.0
n/a	C	Kalaeloa Boulevard, Reconstruction and Widening; Lauwiliwili Street to Olai Street	Improve and reconstruct Kalaeloa Boulevard between Lauwiliwili Street and Olai Street.	✓	\$30.0
ORTP 2030	C	Kapolei Parkway, Extension & Widening, Aliinui Drive to Kalaeloa Boulevard	Extend the existing four-lane Kapolei Parkway, from Aliinui Drive to Hanua Street. This project includes widening of Kapolei Parkway from four to six lanes from Hanua Street to Kalaeloa Boulevard.	✓	\$44.1
ORTP 2030	C	Kapolei Parkway, Extension, Kamokila Boulevard to Kamaaha Avenue	Complete the extension of the existing four-lane Kapolei Parkway.	✓	\$13.3
ORTP 2030	C	Farrington Highway, Widening, Golf Course Road to west of Fort Weaver Road	Widen Farrington Highway from two to four lanes, from Golf Course Road to just west of Fort Weaver Road.	✓	\$33.0
ORTP 2030	S	Fort Barrette Road, Widening, Farrington Highway to Barber's Point Gate	Widen Fort Barrette Road from two to four lanes from Farrington Highway to Barber's Point Gate.	✓	\$23.5
ORTP 2030	S	Kualakai Parkway, Widening & Extension, Interstate Route H-1 to Franklin D. Roosevelt Avenue	Widen and extend Kualakai Parkway as follows: • From three to six lanes from Kapolei Parkway to Interstate Route H-1, • Extend from Kapolei Parkway to Franklin D. Roosevelt Avenue (six lanes).	✓	\$200.0
ORTP 2030	S	Keoneula Boulevard, Extension, Kapolei Parkway to Franklin D. Roosevelt Avenue	Extend Keoneula Boulevard from Kapolei Parkway to Franklin D. Roosevelt Avenue.	✓	\$209.5
ORTP 2030	S	Interstate Route H-1, Widening, Waipahu Off-Ramp	Widen the Interstate Route H-1 Waipahu Street off-ramp from one to two lanes, in the westbound direction, at the Waiawa Interchange.	✓	\$28.8
ORTP 2030	S	Interstate Route H-1, Widening, Waiawa Interchange	Widen the Interstate Route H-1 by one lane in each direction through the Waiawa Interchange. This project will begin in the vicinity of the Waiawa Interchange and end at the Paiwa Interchange.	✓	\$16.2

Source	City/State	Facility/Project Title	Project Description	Included in Travel Demand Model	Estimated Cost in \$M (\$YOE)
ORTP 2030	S	Kamehameha Highway, Widening, Lanikuhana Avenue to Ka Uka Boulevard	Widen Kamehameha Highway from a three-lane to a four-lane divided facility between Lanikuhana Avenue and Ka Uka Boulevard. This project includes shoulders for bicycles and disabled vehicles, bridge crossing replacement, bikeways, etc.	✓	\$130.0
ORTP 2030	S	Interstate Route H-2, Widening, Waipio Interchange	Widen both on- and off-ramps on Interstate Route H-2, at the Waipio Interchange. This project includes the widening of the Ka Uka Boulevard overpass and intersection improvements to facilitate movement to and from the on- and off-ramps.	✓	\$30.6
ORTP 2030	S	Interstate Route H-1, Contra Flow Lane extension (PM), Waiawa Interchange to Kunia Interchange and Keehi Interchange to Radford Drive	This project would construct an extension of the PM contra-flow lane on the Interstate Route H-1, in the westbound direction, on the west end from Waiawa Interchange to Kunia Interchange and on the east end from the Keehi Interchange to Radford Drive.	✓	\$165.0
n/a	S	Interstate Route H-1, Pearl City and Waimalu Viaduct Improvements, Phase 2	Replace, repair, and/or strengthen the Pearl City and Waimalu Viaduct concrete deck and other structural components, including guardrails. Project will be implemented in five phases.		\$100.0
n/a	S	Interstate Route H-1, Waiawa Interchange to Halawa Interchange, Widening, Eastbound	Widen the H-1 Freeway to six lanes from the Waiawa Interchange to the Halawa Interchange in the eastbound direction, and restore the current freeway lane width and shoulder standards. Project may be phased due to high cost.	✓	\$100.0
FFY 2011-2014 TIP	C	Salt Lake Boulevard Widening Project	Widen Salt Lake Boulevard from two to six lanes, between Maluna Street and Ala Liliiko Street.	✓	\$66.0
ORTP 2030	S	Interstate Route H-1, Widening, Ola Lane to Vineyard Boulevard	Widen the Interstate Route H-1 by one lane, in the eastbound direction, from Ola Lane to Vineyard Boulevard as identified below: <ul style="list-style-type: none"> • From two to three lanes from Ola Lane/Middle Street to Likelike Highway off-ramp, • From three to four lanes from Likelike Highway off-ramp to Vineyard Boulevard. This project also includes the widening of: <ul style="list-style-type: none"> • Gulick Avenue overpass to allow five lanes to pass under it, • Kalihi Interchange overcrossings to allow four lanes to pass under it. 	✓	\$104.0
ORTP 2030	S	Interstate Route H-1, Operational Improvements, Lunalilo Street Off-Ramp and On-Ramp (Between Lunalilo Street on-ramp and Vineyard Boulevard off-ramp)	Improve operation and capacity on the westbound H-1 Freeway by modifying weaving movements between the Lunalilo Street on-ramp and Vineyard Boulevard off-ramp.		\$6.0

Source	City/State	Facility/Project Title	Project Description	Included in Travel Demand Model	Estimated Cost in \$M (\$YOE)
ORTP 2030	S	Interstate Route H-1, Operational Improvements, Ward Avenue On-Ramp to University Avenue Interchange	Improve traffic flow on the Interstate Route H-1, in the eastbound direction, from the Ward Avenue on-ramp to the University Avenue Interchange through operational improvements.		\$65.0
SECOND ACCESS PROJECTS – 2011 TO 2020					
ORTP 2030	C	Makakilo Drive, Second Access, Makakilo Drive to Kualakai Parkway / Interstate Route H-1 Interchange	Extend Makakilo Drive (vicinity Pueonani Street) south to the Interstate Route H-1 Freeway Interchange as four-lane roadway, connecting Makakilo Drive to Kualakai Parkway.	✓	\$69.1
TRANSIT PROJECTS – 2011 TO 2020					
ORTP 2030	C	Honolulu High-Capacity Transit Corridor Project	Plan, design, and construct a fixed guideway system between East Kapolei and Ala Moana Center. This project includes intermodal connections with TheBus system to provide feeder services to fixed guideway stations.	✓	\$5,532.5
ORTP 2030	C	TheBus Service, Expansion, Islandwide	Expand the bus service through increase of capacity of the existing system to accommodate population growth. Expanded service will be ADA-compliant. This includes: <ul style="list-style-type: none"> • Expansion of services to and within Ewa, Kapolei, Central, and Windward Oahu, • Expansion through increase of express service to the North Shore, Waianae, and Windward Oahu, • Restructure of service in urban Honolulu. 		\$10.0
ORTP 2030	C	Transit Centers, Various Locations	Construct transit centers at various locations islandwide to support transit operations.		\$70.0
OPERATIONS, MAINTENANCE & SYSTEM PRESERVATION – 2011 TO 2020					
ORTP 2030	C	City Operations and Maintenance: Roadways	Maintain and operate the City's existing and future roadway. Includes, but is not limited to, resurfacing, guardrail and shoulder improvements, lighting improvements, drainage improvements, signal and sign upgrades and replacement, etc.		\$537.1
ORTP 2030	C	City Operations and Maintenance: Transit	Maintain and operate the City's existing and future transit, and paratransit operations and routine maintenance. Includes, but is not limited to, operation of the transit system (including bus, rail, and paratransit), plan, design and construct a third bus operating facility, etc.		\$2,900.1
ORTP 2030	S	State Operations and Maintenance	Maintain and operate the State's existing and future highway operations and routine maintenance. Special Maintenance Program (SMP) Projects include, but are not limited to, pavement repair, preventative maintenance, resurfacing and rehabilitation, etc.		\$380.00

Source	City/State	Facility/Project Title	Project Description	Included in Travel Demand Model	Estimated Cost in \$M (\$YOE)
ORTP 2030	S	System Preservation	Preserve the highway system through projects including, but not limited to, bridge replacement and seismic retrofit, guardrail and shoulder improvements, lighting improvements, drainage improvements, sign upgrades and replacement, traffic signal upgrade and retrofit, etc.		\$150.7
COST SUBTOTALS: MID-RANGE PLAN (2011 TO 2020)					
				CATEGORIES	SUBTOTALS
				Islandwide Projects	\$243.5
				Safety and Operational Improvement Projects	\$204.9
				Congestion Relief Projects	\$1,532.7
				Second Access Projects	\$69.1
				Transit Projects	\$5,612.5
				Operations, Maintenance & System Preservation	\$3,967.9
				All Categories	\$11,630.6
SUBTOTALS BY JURISDICTION					
				City & County of Honolulu Share of Project Costs	\$9,422.6
				State of Hawaii Share of Project Costs	\$2,208.0
				Total: All Shares	\$11,630.6
ISLANDWIDE PROJECTS – 2021 TO 2035					
ORTP 2030	S	Bike Plan Hawaii - Oahu	Implement Oahu elements of the State of Hawaii's Bike Plan Hawaii.		\$100.0
ORTP 2030	S	Enhancement Projects	Implement enhancement projects, including, but not limited to, projects from the Transportation Enhancement Program for Oahu.		\$50.0
FFY 2011-2014 TIP	C	Human Services Transportation Coordination Program	Provide a range of transportation services targeted to disadvantaged populations under the Human Services Transportation Coordination Program.		\$33.2
ORTP 2030	C/S	Intelligent Transportation Systems (ITS)	Implement ITS projects including, but not limited to, those identified in the Oahu Regional ITS Architecture.		\$138.0
New Bike Plan	C	Oahu Bike Plan	Implement City and County Bike Projects		\$37.5
ORTP 2030	S	Transportation Demand Management (TDM) Program	Develop an aggressive TDM program that could include, but is not limited to: 1. Free real-time online carpool matching, 2. Outreach promotion and marketing of alternative transportation, 3. Emergency ride home program, 4. Major special events, 5. Employer based commuter programs, 6. Emerging and innovative strategies (e.g., car sharing).		\$20.0
ORTP 2030	S	Vanpool Program	Continue implementation and expansion of the State's Vanpool Hawaii Program.		\$88.1

SAFETY AND OPERATIONAL IMPROVEMENT PROJECTS – 2021 TO 2035					
ORTP 2030	S	Farrington Highway, Safety Improvements, Makua Valley Road to Aliinui Drive	Construct safety improvements on Farrington Highway along the Waianae Coast, from Makua Valley Road (Kaena Point) to Aliinui Drive (Kahe Point). This project includes realignment around Makaha Beach Park, between Makau Street and Water Street.		\$209.0
HSIP	S	Highway Safety Improvement Program	Comprehensive program to fund safety improvements to reduce collisions and damage to property. Strategies may include installation of left turn lanes, roadway widenings, traffic signal modifications, installation of rumble strips and crash attenuators, installation of guardrails and bridge railings and others. Prepared as part of the Highways Modernization Program (HMP).		\$21.2
ORTP 2030	S	Rockfall Protection, Various Locations	Install rockfall protection or mitigation measures along various state highways at various locations.		\$75.0
ORTP 2030	S	Shoreline protection program	Kamehameha Highway and other locations.		\$30.0
CONGESTION RELIEF PROJECTS – 2021 TO 2035					
ORTP 2030	S	Farrington Highway, Widening, Hakimo Road to Kalaeloa Boulevard	Widen Farrington Highway from four to six lanes, from Hakimo Road to Kalaeloa Boulevard, including the intersection of Luualalei Naval Road.	✓	\$233.1
Ewa Roadway Connectivity Study	C	Kamokila Boulevard	Extend as four-lane roadway between Franklin D. Roosevelt Avenue and Saratoga Street.	✓	\$24.2
Ewa Roadway Connectivity Study	C	Fort Barrette Road	Extend as four-lane roadway between Franklin D. Roosevelt Avenue and Saratoga Street.	✓	\$10.7
ORTP 2030	S	Kalaeloa East-West Spine Road, New Roadway, Kalaeloa Boulevard to Geiger Road	Construct a new four-lane east-west spine road within Kalaeloa by realigning and connecting portions of the existing Saratoga Avenue from Kalaeloa Boulevard in the west and to Geiger Road in the east.	✓	\$271.1
ORTP 2030	S	Makakilo Mauka Frontage Road, New Roadway, Kalaeloa Boulevard to Makakilo Drive	Construct a new two-lane Makakilo Mauka Frontage Road, mauka of Interstate Route H-1, from Kalaeloa Boulevard to Makakilo Drive.	✓	\$18.2
ORTP 2030	S	Farrington Highway, Widening, west of Fort Weaver Road to Waiawa Interchange	Widen Farrington Highway from Kunia to Waiawa by one lane in each direction, from west of Fort Weaver Road to Waiawa Interchange.	✓	\$130.8
ORTP 2030	S	Interstate Route H-2, New Interchange, Pineapple Road Overpass	Construct a new full-service freeway interchange on Interstate Route H-2, between Meheula Parkway and Ka Uka Boulevard, to accommodate future developments in Central Oahu. This project includes the widening of the existing Pineapple Road Overpass from two to four lanes, and the addition of new on- and off-ramps to and from Interstate Route H-2 at Pineapple Road Overpass.	✓	\$102.5

ORTP 2030	S	Interstate Route H-1, Widening, Waiawa Interchange to Halawa Interchange	Widen the Interstate Route H-1 by one lane in the eastbound direction, from the Waiawa Interchange to the Halawa Interchange.	✓	\$540.3
ORTP 2030	S	Kahekili Highway, Widening, Kamehameha Highway to Haiku Road	Widen Kahekili Highway from two to four lanes, from Kamehameha Highway to Haiku Road. This project also includes the following improvements: <ul style="list-style-type: none"> • Contraflow in existing right-of-way between Hui Iwa Street and Haiku Road, • Intersection improvements at Hui Iwa Street and Kamehameha Highway. 	✓	\$75.0
TRANSIT PROJECTS – 2021 TO 2035					
ORTP 2030	C	City Rail Rehabilitation and Fleet Expansion	Provide for rehabilitation of track and expansion of rail fleet.		\$203.0
ORTP 2030	C	TheBus Service, Expansion, Islandwide	Expand the bus service through increase of capacity of the existing system to accommodate population growth. Expanded service will be ADA-compliant. This includes: <ul style="list-style-type: none"> • Expansion of Services to and within Ewa, Kapolei, Central, and Windward Oahu, • Expansion through increase of Express service to the North Shore, Waianae, and Windward Oahu, • Restructure of service in urban Honolulu. 		\$848.0
ORTP 2030	C	Transit Centers, Various Locations	Construct transit centers at various locations islandwide to support transit operations.		\$9.0
OPERATIONS, MAINTENANCE & SYSTEM PRESERVATION – 2021 TO 2035					
ORTP 2030	C	City Operations and Maintenance: Roadways	Maintain and operate the City's existing and future roadway. Includes, but is not limited to, resurfacing, guardrail and shoulder improvements, lighting improvements, drainage improvements, signal and sign upgrades and replacement, etc.		\$800.3
ORTP 2030	C	City Operations and Maintenance: Transit	Maintain and operate the City's existing and future transit, and paratransit operations and routine maintenance. Includes, but is not limited to, operation of the transit system (including bus, rail, paratransit, and ferry), replacement of existing fleet, plan, design and construct a third bus operating facility, etc.		\$6,872.1
ORTP 2030	S	State Operations and Maintenance	Maintain and operate the State's existing and future highway operations and routine maintenance. Special Maintenance Program (SMP) Projects include, but is not limited to, pavement repair, preventative maintenance, resurfacing and rehabilitation, etc.		\$704.4
ORTP 2030	S	System Preservation	Preserve the highway system through projects including, but not limited to, bridge replacement and seismic retrofit, guardrail and shoulder improvements, lighting improvements, drainage improvements, sign upgrades and replacement, traffic signal upgrade and retrofit, etc.		\$517.7
COST SUBTOTALS: LONG-RANGE PLAN (2020 TO 2035)					
				CATEGORIES	SUBTOTALS
				Islandwide Projects	\$466.8
				Safety and Operational Improvement Projects	\$335.2
				Congestion Relief Projects	\$1,405.9
				Transit Projects	\$1,060.0
				Operations, Maintenance & System Preservation	\$8,894.5

		All Categories		\$12,162.4
SUBTOTALS BY JURISDICTION				
		City & County of Honolulu Share of Project Costs		\$9,113.6
		State of Hawaii Share of Project Costs		\$3,048.8
		Total: All Shares		\$12,162.4
ORTP 2035 COST TOTALS: 2011 TO 2035				
		CATEGORIES		SUBTOTALS
		Islandwide Projects		\$710.3
		Safety and Operational Improvement Projects		\$540.1
		Congestion Relief Projects		\$2,938.6
		Second Access Projects		\$69.1
		Transit Projects		\$6,672.5
		Operations, Maintenance & System Preservation		\$12,862.4
		All Categories		\$23,793.0
SUBTOTALS BY JURISDICTION				
		City & County of Honolulu Share of Project Costs		\$18,536.2
		State of Hawaii Share of Project Costs		\$5,256.8
		Total: All Shares		\$23,793.0
NOTE: Illustrative projects listed below are not included in the financially constrained plan due to funding limitations. If additional funding becomes available, they may be considered for amendment to the plan. These projects were not included in the travel demand model.				
ILLUSTRATIVE PROJECTS				
ORTP 2030	S	Interstate Route H-1, On- & Off-Ramp Modifications, Various Locations	Modify and/or close various on- and off-ramps on the Interstate Route H-1.	\$108.0
ORTP 2030	S	Kunia Road, Widening and Interchange Improvement, Wilikina Drive to Farrington Highway	Widen Kunia Road as follows: <ul style="list-style-type: none"> • From two to four lanes, from Wilikina Drive to Anonui Street, • From two to four lanes, from Anonui Street to Kupuna Loop, • From four to six lanes, from Kupuna Loop to Farrington Highway. •Also, add one-lane eastbound loop on-ramp at Kunia Road & Interstate Route H-1.	\$348.9
ORTP 2030	S	Interstate Route H-1, Widening, Waiau Interchange to Waiawa Interchange	Widen Interstate Route H-1 in the westbound direction by one lane from the Waiau Interchange to the Waiawa Interchange.	\$338.9
ORTP 2030	S	Interstate Routes H-1 and H-2, Operational Improvements, Waiawa Interchange	Modify the Interstate Routes H-1 and H-2 Waiawa Interchange, to improve merging characteristics through operational improvements (e.g., additional transition lanes).	\$112.1
ORTP 2030	S	Interstate Route H-1, Widening, Vineyard Boulevard to Middle Street	Widen the Interstate Route H-1 by one lane in the westbound direction, from Vineyard Boulevard to Middle Street.	\$200.0
ORTP 2030	S	Nimitz Highway, High Occupancy Vehicle (HOV) Flyover, Keehi Interchange to Pacific Street	Construct a new two-lane elevated and reversible HOV flyover above Nimitz Highway, from the Keehi Interchange to Pacific Street. This project includes the removal of the existing eastbound contraflow lane in the AM peak and restoration of all turning movements on the at-grade portion of Nimitz highway.	\$537.5
ORTP 2030	S	Interstate Route H-1, Widening, Ward Avenue to Punahou Street	Widen the existing Interstate Route H-1 by one lane in the eastbound direction, from Ward Avenue to Punahou Street.	\$100.0

ORTP 2030	S	Waianae, Second Access, Farrington Highway to Kunia Road	Construct a new two-lane second access road to Waianae from Farrington Highway in the vicinity of Maili, over the Waianae Mountain Range, to Kunia Road. Requires Kunia Road, Widening and Interchange Improvement, Wilikina Drive to Farrington Highway (#71) to ensure benefit; priority for new administration.		\$1,269.0
ORTP 2030	C	Fixed Guideway, West Kapolei to East Kapolei	Plan, design, and construct a fixed guideway system between West Kapolei to East Kapolei.		\$2,031.6
ORTP 2030	C	Fixed Guideway, Ala Moana to UH Manoa and Waikiki	Plan, design, and construct a fixed guideway system between Ala Moana and UH Manoa and Waikiki.		\$1,828.4
n/a	C	Fixed Guideway, Pearl City to Mililani	Plan, design, and construct a fixed guideway system between Pearl City and Mililani.		\$1,268.4
Ewa Roadway Connectivity Study	C	East-West Road	Construct as four-lane roadway between Farrington Highway and Fort Weaver Road		\$57.3

n/a = Not Applicable (e.g., project not listed in current TIP).

Table 2-2. ORTP 2035 Preferred Scenario Added Project Lane-Miles by Facility Type and Area Type

Facility Type	Area Type*								All Areas
	1	2	3	4	5	6	7	8	
Freeways**	0	6	17	69	156	35	53	20	355
Expressways	0	0	3	15	35	32	42	13	140
Class I arterials	11	16	36	54	112	7	73	17	326
Class II arterials	6	15	37	26	55	20	71	40	272
Class III arterials	4	5	24	36	112	4	37	1	223
Class I collectors	2	6	14	69	92	3	44	6	237
Class II collectors	1	4	26	47	209	11	127	16	442
Local Streets	4	2	11	48	78	5	68	10	227
High Speed Ramps	0	0	1	6	21	3	9	1	42
Low Speed Ramps	0	3	4	21	24	1	12	1	65
Rail	0	0	0	0	0	0	0	0	0
All Facility Types	28	57	173	391	894	121	536	125	2,329

*Please see Appendix A for area type definitions.

**The zipper lane (both AM and planned PM) and HOV lanes are included under the freeway facility type. When in operation, a zipper lane takes away one lane from the general purpose lanes traveling in the opposite direction. In the AM period, there are 43 HOV lane miles, while the PM period has HOV 40 lane miles.

3 Travel Demand Forecasting Results

This section describes the basic travel demand forecasting model results such as person trips and mode choice associated with the ORTP 2035 preferred scenario, comparing it to the 2035 baseline scenario results.

3.1 Person Trips by Purpose and Mode

As compared to the 2035 baseline, total system-wide daily person trips combined across all trip purposes and modes are projected to remain the same for the ORTP 2035 preferred scenario at just over four million trips. Table 3-1 shows the ORTP 2035 preferred scenario estimated mode choice results by purpose for residents. The results indicate that 82 percent of all resident trips were made by private vehicles (single, 2, and 3+ occupants), while six percent of all resident trips were made by transit (express, local, fixed guideway, park-and-ride, or kiss-and-ride), and 11 percent of the resident trips were made with the walk or bike mode. For the journey-to-work/home-based work trip purpose, however, 14 percent of the trips are made by transit, while home-based college trips reflect a 25 percent transit mode share. These purposes show a much higher percentage of trips on transit compared to the overall percentage of six percent.

Table 3-2 shows the comparison of the ORTP 2035 mode choice results by purpose to the 2035 Baseline results. This table shows the change and the percent change between the 2035 Baseline and the ORTP 2035 scenarios. For total trips across all trip purposes, the drive modes remained relatively the same, with small increases in single-occupant vehicle and 2-person vehicle trips and a decrease in 3+ high-occupancy vehicle trips, though none of the changes were large enough to make a percentage difference. The walk-to-express bus mode increased 5 percent in the ORTP 2035 scenario, while the kiss-and-ride transit mode decreased 5 percent. The informal park-and-ride mode decreased two percent from the 2035 Baseline alternative and the formal park-and-ride mode remained essentially the same for both. Walking and biking also experienced slight decreases of two and one percent, respectively.

Table 3-1. ORTP 2035 Preferred Scenario Mode Choice Summary Results by Trip Purpose for Residents and Percent

Mode	Purpose											Total
	Journey-to-Work / Home-Based-Work	Journey-to-Work / Home-Based-Other	Journey-to-Work / Work-Based	Journey-to-Work / Non-Home-Based	Journey-at-Work / Work-Based	Journey-at-Work / Non-Home-Based	Non-Work-Related / Home-Based-School (K-12)	Non-Work-Related / Home-Based-College	Non-Work-Related / Home-Based-Shopping	Non-Work-Related / Home-Based-Other	Non-Work-Related / Non-Home-Based	
Single-occupant vehicle	541,674	82,031	162,822	29,299	116,197	2,944	8,357	36,171	112,646	264,727	142,328	1,499,196
	60%	37%	67%	33%	53%	24%	3%	49%	29%	27%	23%	37%
Double-occupant vehicle	152,930	74,528	42,628	33,898	30,024	1,714	66,424	8,604	131,875	301,162	221,834	1,065,621
	17%	34%	17%	38%	14%	14%	24%	12%	34%	31%	35%	26%
Three-or-more occupant vehicle	38,045	45,613	12,020	15,931	11,686	428	105,491	2,716	95,430	247,606	204,849	779,815
	4%	21%	5%	18%	5%	4%	37%	4%	25%	25%	33%	19%
Walk to express transit	3,652	232	3	518	0	0	261	217	0	0	0	4,883
	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
Walk to local bus transit	55,459	4,328	7,149	5,208	4,487	4,561	16,336	9,590	9,864	25,950	3,674	146,606
	6%	2%	3%	6%	2%	38%	6%	13%	3%	3%	1%	4%
Walk to fixed guideway transit	27,716	1,845	5,072	1,901	1,691	1,124	3,135	5,661	1,295	10,380	1,844	61,664
	3%	1%	2%	2%	1%	9%	1%	8%	0%	1%	0%	2%
Informal Park-and-ride transit	1,081	47	0	7	0	0	261	95	139	217	0	1,847
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Formal Park-and-ride transit	12,713	0	0	0	0	0	4	1,487	12	542	0	14,758
	1%	0%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%
Kiss-and-ride transit	9,832	247	14	0	1	1	1,542	1,710	750	1,616	3	15,716
	1%	0%	0%	0%	0%	0%	1%	2%	0%	0%	0%	0%
Auxiliary walk	49,682	10,491	13,232	2,974	52,484	1,233	71,910	4,118	29,816	121,858	50,704	408,502
	5%	5%	5%	3%	24%	10%	25%	6%	8%	12%	8%	10%
Auxiliary bike	12,177	1,847	921	32	2,109	12	8,570	3,403	2,528	11,376	2,536	45,511
	1%	1%	0%	0%	1%	0%	3%	5%	1%	1%	0%	1%
Total	904,961	221,209	243,861	89,768	218,679	12,017	282,291	73,772	384,355	985,434	627,772	4,044,119

Table 3-2. Comparison of ORTP 2035 Preferred Scenario to 2035 Baseline Mode Choice Results by Purpose for Residents (Change and Percent Change)

Mode	Purpose												Total
	Journey-to-Work / Home-Based-Work	Journey-to-Work / Home-Based-Other	Journey-to-Work / Work-Based	Journey-to-Work / Non-Home-Based	Journey-at-Work / Work-Based	Journey-at-Work / Non-Home-Based	Non-Work-Related / Home-Based-School (K-12)	Non-Work-Related / Home-Based-College	Non-Work-Related / Home-Based-Shopping	Non-Work-Related / Home-Based-Other	Non-Work-Related / Non-Home-Based		
Single-occupant vehicle	3,533	620	590	51	385	-14	98	271	204	623	103	6,464	
	1%	1%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	
Double-occupant vehicle	1,723	671	434	156	127	6	1,021	75	4	574	338	5,129	
	1%	1%	1%	0%	0%	0%	2%	1%	0%	0%	0%	0%	
Three-or-more occupant vehicle	-2,219	-687	-484	-29	46	1	734	-90	13	379	263	-2,073	
	-6%	-1%	-4%	0%	0%	0%	1%	-3%	0%	0%	0%	0%	
Walk to express transit	213	10	1	-9	0	0	24	14	0	0	0	253	
	6%	5%	50%	-2%	0%	0%	10%	7%	0%	0%	0%	5%	
Walk to local bus transit	40	80	57	68	24	21	226	147	-26	-146	4	495	
	0%	2%	1%	1%	1%	0%	1%	2%	0%	-1%	0%	0%	
Walk to fixed guideway transit	138	-9	1	59	12	10	-44	-120	-26	-194	-15	-188	
	1%	0%	0%	3%	1%	1%	-1%	-2%	-2%	-2%	-1%	0%	
Informal Park-and-ride transit	-48	-1	0	0	0	0	2	-1	1	2	0	-45	
	-4%	-2%	0%	0%	0%	0%	1%	-1%	1%	1%	0%	-2%	
Formal Park-and-ride transit	17	0	0	0	0	0	-1	-101	1	10	0	-74	
	0%	0%	0%	0%	0%	0%	-20%	-6%	9%	2%	0%	0%	
Kiss-and-ride transit	-731	-5	-1	0	0	0	-1	-103	1	-6	0	-846	
	-7%	-2%	-7%	0%	0%	0%	0%	-6%	0%	0%	0%	-5%	
Auxiliary walk	-2,192	-336	-564	-142	-307	-8	-2,439	1	-340	-874	-426	-7,627	
	-4%	-3%	-4%	-5%	-1%	-1%	-3%	0%	-1%	-1%	-1%	-2%	
Auxiliary bike	-463	-13	-31	-1	4	0	74	-27	-34	-31	-3	-525	
	-4%	-1%	-3%	-3%	0%	0%	1%	-1%	-1%	0%	0%	-1%	
Total	11	330	3	153	291	16	-306	66	-202	337	264	963	
	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	

3.2 Highway Assignment Results

Highway assignment results include the metrics of vehicle miles traveled, vehicle hours traveled, and vehicle hours of delay. These results are summarized for the ORTP 2035 and compared to the 2035 Baseline results.

3.2.1 Vehicle Miles of Travel

Table 3-3 summarizes the total islandwide daily VMT by motorized vehicles (automobiles, buses, and commercial vehicles), as estimated by the travel demand forecasting model for the 2035 Baseline and ORTP 2035. There was a slight overall increase of approximately 147,100 (one percent) daily VMT forecasted between the 2035 Baseline and the ORTP 2035. Most of the increase occurred on expressways as portions of Farrington Highway and Kamehameha Highway were widened, which provided more capacity and relieved congestion in those areas.

Table 3-3. Daily Vehicle Miles Traveled (2035 Baseline and ORTP 2035)

Facility Type	Daily VMT				VMT Change (2035 Baseline to ORTP 2035)	
	2035 Baseline	Percent	ORTP 2035	Percent	Difference	Percent Difference
Freeways	5,959,300	39.2%	5,975,300	38.9%	16,000	0.3%
Expressways	1,707,700	11.2%	1,780,100	11.6%	72,400	4.2%
Ramps	791,300	5.2%	804,000	5.2%	12,700	1.6%
Arterials	4,963,300	32.6%	5,015,000	32.7%	51,700	1.0%
Collectors	1,787,300	11.8%	1,781,600	11.6%	-5,700	-0.3%
Total	15,208,900	100.0%	15,356,000	100.0%	147,100	1.0%

Note: VMT by facility type may not sum to totals due to rounding.

Table 3-4 shows the summary of the daily VMT by facility type and area type for the ORTP 2035 preferred scenario, as well as the percent change from the 2035 Baseline VMT. Area types used in the travel demand forecasting model range from 1 to 8, with 1 being the most rural, and 8 being the most dense and urbanized. More specific definition of area types can be found in Appendix A. Of the more than 15.36 million daily VMT projected, approximately 39 percent are estimated to occur on the Interstate freeway system (e.g., Interstate Routes H-1, H-2, H-3, and Moanalua Freeways), while the estimated percentages of VMT on the expressways (e.g., Likelike Highway and Pali Highway), ramps, arterials (e.g., Nimitz Highway, Dillingham Boulevard, and Moanalua Road) and collectors (e.g., Kaahumanu Street and Waipahu Street) would be 11.6 percent, five percent, 33 percent, and 11.6 percent, respectively.

Table 3-4. ORTP 2035 VMT by Facility Type and Area Type and Percent Change from 2035 Baseline

Facility Type	Area Type*								All Areas
	1	2	3	4	5	6	7	8	
Freeways									
ORTP 2035	0	149,200	513,880	1,195,562	2,701,251	368,809	813,057	233,503	5,975,262
% Change	0%	-1%	1%	2%	0%	0%	0%	0%	0%
Expressways									
ORTP 2035	0	0	37,516	186,239	493,917	378,677	517,320	166,385	1,780,054
% Change	0%	0%	0%	9%	10%	2%	0%	4%	4%
Ramps									
ORTP 2035	0	16,675	35,878	164,111	371,005	28,865	169,483	18,016	804,033
% Change	0%	-2%	1%	-2%	1%	1%	7%	1%	2%
Arterials									
ORTP 2035	125,935	256,010	618,844	714,602	1,563,870	263,233	1,080,688	391,793	5,014,975
% Change	-1%	1%	0%	-1%	3%	1%	3%	-2%	1%
Collectors									
ORTP 2035	14,543	32,019	140,138	361,349	797,787	18,537	377,591	39,602	1,781,566
% Change	0%	-4%	0%	-3%	2%	-3%	-3%	0%	0%
Total									
ORTP 2035	140,478	453,904	1,346,256	2,621,863	5,927,830	1,058,121	2,958,139	849,299	15,355,890
% Change	-1%	0%	1%	0%	2%	1%	1%	0%	1%

* See Appendix A for area type definitions.

3.2.2 Vehicle Hours of Travel

Table 3-5 lists the total duration of islandwide daily trips by motorized vehicles as estimated by the 2035 Baseline and ORTP 2035 travel demand forecasting models. The travel demand forecasting model estimates an overall decrease in daily VHT of approximately 15,500 hours (-3.3 percent) between the 2035 Baseline and ORTP 2035. There is a small percentage decrease across all facility types with expressways having the largest percentage decrease at -6.5 percent. This overall decrease in hours of travel indicates that even though slightly more miles are being driven (i.e., higher VMT) in the ORTP 2035, the reduction in congestion on the roadways being traveled results in increased average speeds and faster travel times.

Table 3-5. Daily Vehicle Hours Traveled (2035 Baseline and ORTP 2035)

Facility Type	VHT				VHT Change (2035 Baseline to ORTP 2035)	
	2035 Baseline	Percent	ORTP 2035	Percent	Difference	Percent Difference
Freeways	128,600	27.8%	125,900	28.1%	-2,700	-2.1%
Expressways	39,900	8.6%	37,300	8.3%	-2,600	-6.5%
Ramps	40,500	8.7%	39,500	8.8%	-1,000	-2.5%
Arterials	178,000	38.4%	171,200	38.2%	-6,800	-3.8%
Collectors	76,400	16.5%	74,000	16.5%	-2,400	-3.1%
Total	463,400	100.0%	447,900	100.0%	-15,500	-3.3%

Note: VHT by facility type may not sum to totals due to rounding.

Table 3-6 shows Vehicle Hours of Travel (VHT) by facility type and area type for ORTP 2035, as well as the percent change in VHT from the 2035 Baseline to the ORTP 2035 conditions.

Table 3-6. ORTP 2035 VHT by Facility Type and Area Type and Percent Change from 2035 Baseline

Facility Type	Area Type*								All Areas
	1	2	3	4	5	6	7	8	
Freeways									
ORTP 2035	0	3,762	15,444	25,020	54,776	6,940	15,427	4,506	125,875
% Change	0%	-1%	-6%	-2%	-2%	1%	-1%	-3%	-2%
Expressways									
ORTP 2035	0	0	860	4,166	10,748	7,966	10,297	3,228	37,265
% Change	0%	0%	0%	-21%	1%	-13%	-5%	3%	-7%
Ramps									
ORTP 2035	0	1,389	2,692	9,344	17,071	675	7,566	806	39,543
% Change	0%	-15%	5%	-9%	-2%	3%	4%	1%	-2%
Arterials									
ORTP 2035	5,703	12,383	28,820	26,386	52,062	7,577	29,217	9,103	171,251
% Change	-1%	-3%	0%	-7%	-6%	1%	-3%	-3%	-4%
Collectors									
ORTP 2035	720	2,176	7,292	15,579	34,747	598	11,920	1,008	74,040
% Change	0%	-17%	1%	-11%	2%	-12%	-5%	0%	-3%
Total									
ORTP 2035	6,423	19,710	55,108	80,495	169,404	23,756	74,427	18,651	447,974
% Change	-1%	-5%	-1%	-7%	-2%	-5%	-3%	-1%	-3%

*See Appendix A for area type definitions.

3.2.3 Vehicle Hours of Delay

Table 3-7 shows the AM two-hour peak period hours of delay experienced by all vehicles as indicated by the 2035 Baseline and the ORTP 2035 travel demand forecasting models. The VHD is project to decrease for all facility types, but most significantly for expressways (37 percent) and arterials (31 percent). The total decrease in VHD for all facilities in the AM two-hour peak period is 8,400 hours,

roughly 24 percent. Table 3-8 shows the daily estimated islandwide total hours of delay experienced by all vehicles as indicated by the 2035 Baseline and ORTP 2035 travel demand forecasting models. The VHD is projected to decrease by about 18,700 hours (16 percent) daily from the 2035 Baseline to the ORTP 2035. The largest forecasted decreases in daily delay are expected on expressways (34 percent), arterials (23 percent), and collectors (13 percent). VHD is often considered to be a direct indicator of overall levels of congestion. The sizable reduction in VHD for the ORTP 2035 in comparison to the Baseline indicates that it is expected to have a significant effect on reducing congestion. This is in spite of the projection that more travel (i.e., higher VMT) will occur with the ORTP 2035.

Table 3-7. AM Two-Hour Peak Period Vehicle Hours of Delay (2035 Baseline and ORTP 2035)

Facility Type	VHD				VHD Change (2035 Baseline to ORTP 2035)	
	2035 Baseline	Percent	ORTP 2035	Percent	Difference	Percent Difference
Freeways	10,300	29%	8,500	32%	-1,800	-18%
Expressways	5,100	14%	3,200	12%	-1,900	-37%
Ramps	3,800	11%	3,500	13%	-300	-8%
Arterials	11,800	33%	8,100	30%	-3,700	-31%
Collectors	4,400	12%	3,700	14%	-700	-16%
Total	35,400	100%	27,000	100%	-8,400	-24%

Note: VHD by facility type may not sum to totals due to rounding.

Table 3-8. Daily Vehicle Hours of Delay (2035 Baseline and ORTP 2035)

Facility Type	VHD				VHD Change (2035 Baseline to ORTP 2035)	
	2035 Baseline	Percent	ORTP 2035	Percent	Difference	Percent Difference
Freeways	33,400	28.1%	30,400	30.4%	-3000	-9.0%
Expressways	11,600	9.8%	7,700	7.7%	-3900	-33.6%
Ramps	21,300	17.9%	20,000	20.0%	-1300	-6.1%
Arterials	35,100	29.5%	26,900	26.9%	-8200	-23.4%
Collectors	17,400	14.6%	15,100	15.1%	-2300	-13.2%
Total	118,800	100.0%	100,100	100.0%	-18,700	-15.7%

Note: VHD by facility type may not sum to totals due to rounding.

Table 3-9 shows the ORTP 2035 scenario forecasted Vehicle Hours of Delay (VHD) by facility type and area type, along with the percent change in VHD between the 2035 Baseline and ORTP 2035 conditions.

Table 3-9. ORTP 2035 VHD by Facility Type and Area Type and Percent Change from 2035 Baseline

Facility Type	Area Type*								All Areas
	1	2	3	4	5	6	7	8	
Freeways									
ORTP 2035	0	1,315	7,020	5,736	11,898	1,086	2,521	800	30,376
% Change	0%	0%	-13%	-11%	-7%	3%	-8%	-13%	-9%
Expressways									
ORTP 2035	0	0	214	1,008	2,516	1,654	1,816	500	7,708
% Change	0%	0%	-1%	-57%	-19%	-44%	-24%	-2%	-33%
Ramps									
ORTP 2035	0	845	1,657	4,840	8,415	93	3,774	426	20,050
% Change	0%	-22%	7%	-14%	-5%	15%	2%	2%	-6%
Arterials									
ORTP 2035	664	2,141	4,064	6,153	7,884	987	4,200	765	26,858
% Change	-3%	-18%	1%	-22%	-35%	0%	-29%	-8%	-23%
Collectors									
ORTP 2035	138	895	1,686	3,221	6,960	45	2,066	130	15,141
% Change	-1%	-30%	2%	-31%	0%	-57%	-15%	-2%	-13%
Total									
ORTP 2035	802	5,196	14,641	20,958	37,673	3,865	14,377	2,621	100,133
% Change	-3%	-17%	-6%	-22%	-14%	-26%	-16%	-7%	-16%

*See Appendix A for area type definitions.

3.3 Transit Assignment Results

Table 3-10 shows the ORTP 2035 preferred scenario transit boardings by period (peak versus off-peak) and mode for residents, visitors, and ground access air passengers as well as the percent change from the 2035 Baseline. The ORTP 2035 shows a very slight decrease in daily transit boardings when compared to the Baseline. The total number of daily transit boardings as estimated for the ORTP 2035 is about 388,100, which though similar to, is slightly less than the 388,700 boardings estimated for the 2035 Baseline. The total number of daily rail boardings is forecasted at roughly 99,900 for the ORTP 2035, while 100,800 is forecasted for the 2035 Baseline.

Table 3-10. ORTP 2035 Transit Boardings by Period and Mode and Percent Change from 2035 Baseline

Period/Mode	Boardings By Mode					Total
	Local	Express	Limited	Guideway	Ferry	
Peak						
ORTP 2035	174,695	7,687	6,990	72,453	342	262,166
% Change	-0.1%	2.4%	2.0%	-1.2%	0.0%	-0.1%
Off-Peak						
ORTP 2035	93,624	0	4,912	27,427	0	125,963
% Change	0.0%	0.0%	-3.4%	-0.3%	0.0%	-0.2%
Total						
ORTP 2035	268,318	7,687	11,902	99,880	342	388,129
% Change	0.0%	2.4%	-0.3%	-0.9%	0.0%	-0.2%

3.4 ORTP 2035 Travel Patterns

This section discusses the ORTP 2035 travel patterns and conditions on Oahu and compares them to the established 2035 Baseline performance in order to measure growth and/or changes associated with the ORTP 2035 preferred scenario.

3.4.1 Screenline Person Trips

Figure 3-1 and Figure 3-2 show the locations of the screenlines that were used to analyze person trips for both the ORTP 2035 and 2035 Baseline conditions. A screenline is an imaginary line drawn within the study area that intersects a given set transportation facilities. Trips and/or vehicles crossing this line are measured and can then be used to compare to other transportation system alternatives and/or conditions to assess changes in travel volumes and patterns.

Table 3-11 shows the daily person trips estimated for the ORTP 2035 and the total percent change from the 2035 Baseline.

As in the 2035 Baseline, Screenline 5 (Kalauao), near Aiea, which captures person trips traveling between Downtown Honolulu and Pearl City, Waipahu, Central Oahu, Ewa, and Kapolei, is estimated to have the maximum number of daily person trips for the ORTP 2035. Screenline 18 (Sandy Beach Park), near Hawaii Kai, has the least number of daily person trips out of the 22 screenlines chosen for this analysis.

In comparison to the 2035 Baseline, the Kalauao, Kahe Point, Ewa, Waipahu, and Waikele screenlines would experience an increase in SOV person trips as the H-1 and Farrington Highway widening projects would improve throughput in these areas. The Kalaeloa/Kapolei screenline (22) illustrated the greatest change between the ORTP 2035 and 2035 Baseline alternatives. Here, the 2035 Baseline had 26,700 more daily person trips than the ORTP 2035, as well as 9,000 more SOV trips, 13,000 more HOV2+ trips, and 14,800 more transit trips than the ORTP 2035.

Figure 3-1: Screenline Locations (Islandwide)

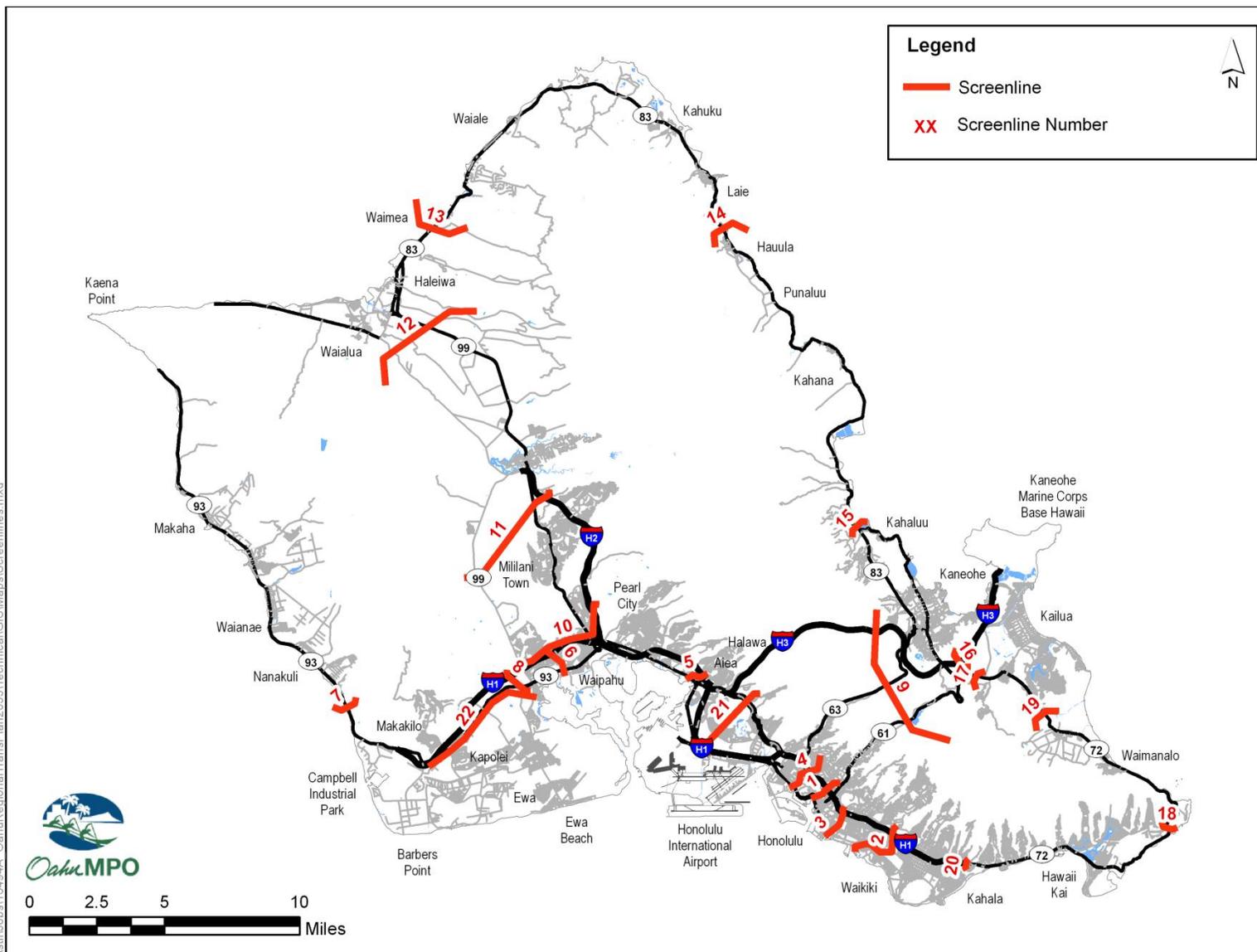
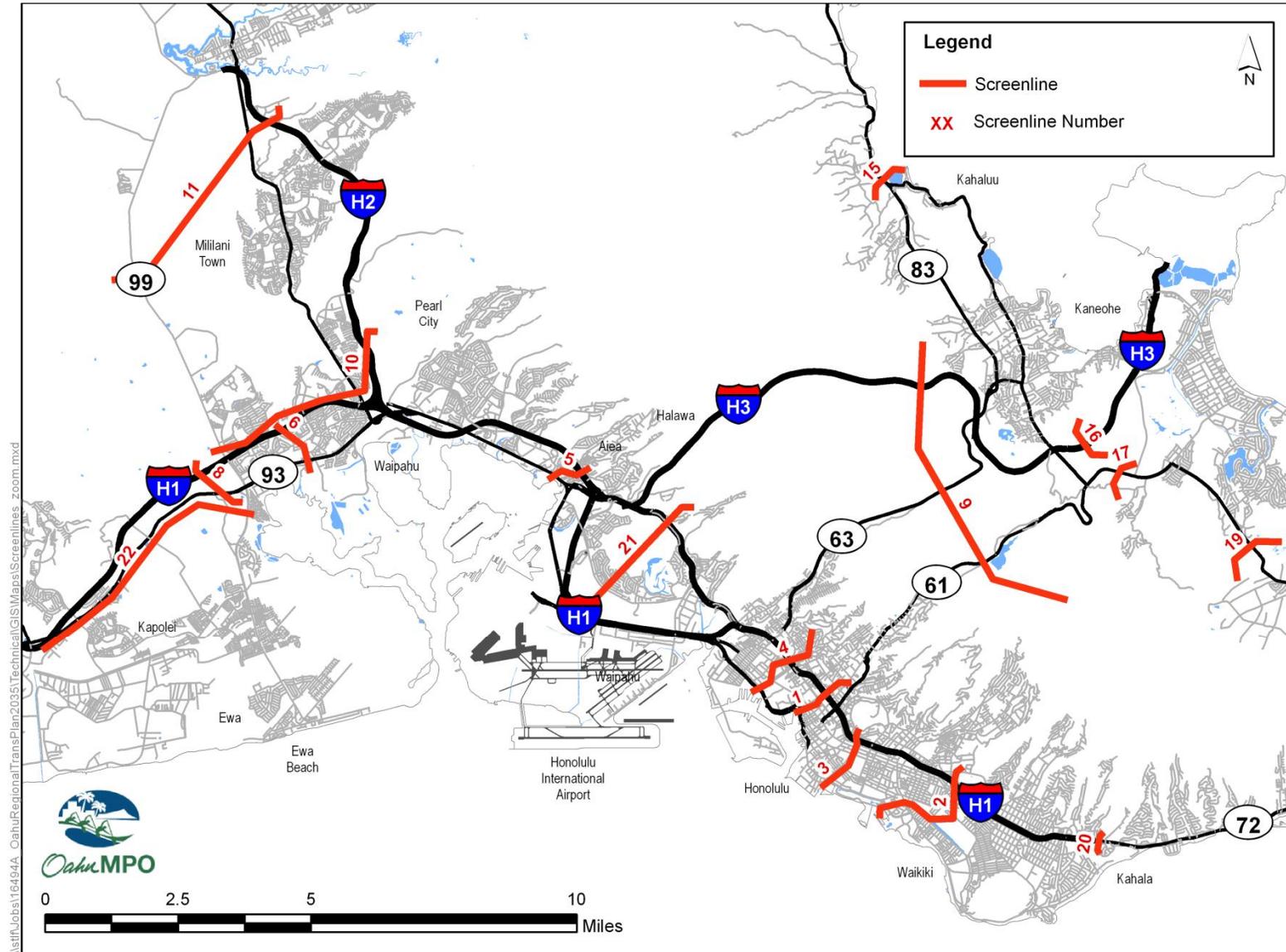


Figure 3-2: Screenline Locations (Honolulu and Surrounding Areas)



The new facilities added in the ORTP 2035 allowed traffic to take alternate routes, some of which did not cross the screenline. Hence, trips crossing this screenline were lower, even though trips in the greater vicinity remained the same.

Table 3-11. ORTP 2035 Daily Screenline Person Trips and Change and Percent Change from 2035 Baseline

Screenline	SOV	HOV 2+	Transit	Total	Difference from 2035 Baseline	Percent Difference
1. Nuuanu Stream Bridge	254,000	179,400	73,200	506,600	-5,300	-1%
2. Manoa Palolo/Ala Wai Canal	266,200	173,300	57,700	497,200	-2,200	0%
3. East of Ward Ave	268,900	187,400	67,600	523,900	-5,600	-1%
4. Kapalama Drainage Canal	251,800	180,100	123,200	555,100	-6,000	-1%
5. Kalauao	318,100	241,900	56,900	616,900	4,800	1%
6. Waikele	136,600	121,500	33,500	291,600	4,100	1%
7. Kahe Point	39,800	45,300	11,200	96,300	2,800	3%
8. Ewa	117,600	105,800	31,400	254,800	13,500	6%
9. Trans Koolau	88,500	75,200	13,400	177,100	-1,200	-1%
10. Waipahu	155,900	155,300	21,500	332,700	10,000	3%
11. Wahiawa/Mililani	69,200	66,700	9,500	145,400	-300	0%
12. Haleiwa	17,500	18,300	2,900	38,700	-700	-2%
13. Waimea	9,900	9,800	1,400	21,100	-400	-2%
14. Hauula	12,900	9,300	2,300	24,500	-100	0%
15. Kahaluu	17,000	13,300	2,900	33,200	700	2%
16. Kailua/Kaneohe	42,900	39,700	6,800	89,400	-200	0%
17. Maunawili	30,000	28,000	6,200	64,200	-200	0%
18. Sandy Beach Park	3,700	3,000	1,100	7,800	0	0%
19. Waimanalo	11,100	11,600	1,400	24,100	0	0%
20. Kahala	61,900	56,400	8,600	126,900	-300	0%
21. Salt Lake	203,800	170,200	57,700	431,700	400	0%
22. Kalaheo/Kapolei	166,100	158,700	50,200	375,000	-26,700	-7%

3.4.2 Mode Share

Table 3-12 details the mode share as estimated by the 2035 Baseline and ORTP 2035 travel demand forecasting models. SOV and HOV person trips are projected to increase very slightly as a result of the widening projects and new roadways in the ORTP 2035, while person trips for other modes are forecasted to decrease slightly in the ORTP 2035.

Table 3-12. Mode Share Estimates (2035 Baseline and ORTP 2035)

Mode	2035 Baseline Daily Person Trips	Percent	ORTP 2035 Daily Person Trips	Percent	Difference	Percent Difference
SOV	1,492,700	36.9%	1,499,200	37.1%	6,500	0.4%
HOV	1,842,400	45.6%	1,845,400	45.6%	3,000	0.2%
Transit	245,900	6.1%	245,500	6.1%	-400	-0.2%
Bicycle	46,000	1.1%	45,500	1.1%	-500	-1.1%
Pedestrian	416,100	10.3%	408,500	10.1%	-7,600	-1.8%
Total	4,043,100	100.0%	4,044,100	100.0%	1,000	0.0%

Note: Mode share may not sum to totals due to rounding.

3.4.3 Average Vehicle Occupancy

Based on output from the ORTP 2035 alternative travel demand modeling results, the average occupancy for motorized vehicles on Oahu (excluding buses and commercial vehicles) is forecasted at 1.90 persons per vehicle. This AVO is across all trip purposes and remains similar to the 2035 Baseline.

This section discusses the ORTP 2035 transit system characteristics and system performance on Oahu, and compares them to the 2035 Baseline conditions.

4.1 System Characteristics

The 2035 Baseline transit system included the construction of the Honolulu High-Capacity Transit Corridor Project (HHCTCP) fixed-guideway system. Additionally, it includes a continued effort toward expanding and supporting the existing bus transit system by funding increased service levels and constructing transit centers and park-and-ride lots in various locations around the island to increase transit accessibility. As stated earlier, some of TheBus' transit routes would be restructured to integrate with and serve a more complementary role to the fixed-guideway system.

4.2 System Performance

Implementation of the HHCTCP will help to increase transit usage on Oahu significantly. As discussed in Chapter 3, daily transit boardings are anticipated to increase by almost 70 percent between 2007 conditions and the 2035 Baseline scenario. The ORTP 2035 shows a very slight decrease in daily transit boardings when compared to the Baseline. The total number of daily transit boardings as estimated by the ORTP 2035 is 388,100, which though similar to, is slightly less than the 388,700 boardings estimated for the 2035 Baseline. The total number of daily rail boardings is forecasted at 99,900 for the ORTP 2035, while 100,800 is forecasted for the 2035 Baseline.

5

ORTP 2035 Conditions and Performance: Streets and Highways

This section discusses the ORTP 2035 roadway system characteristics and system performance on Oahu, and compares them to the 2035 Baseline conditions.

5.1 System Characteristics

5.1.1 Roadway System

The ORTP 2035 travel demand forecasting model included numerous projects and programs aimed at improving the performance of the roadway system. The roadway projects included in the ORTP 2035 are primarily aimed at congestion relief and safety and operational improvements. Also included in the ORTP 2035 is the implementation of the TDM Program and ITS projects that would serve to improve the performance of the roadway system, either by encouraging travelers to share a ride or to provide traveler information that would give drivers the option of finding an alternative to using the most seriously congested roadways.

The congestion mitigation projects consist largely of efforts aimed at reducing congestion on the most heavily-utilized highways and roadways, including the Interstate Route H-1 freeway, Farrington Highway, and Kamehameha Highway. There are also multiple new interchanges slated to be constructed along the Interstate Routes H-1 and H-2, as well as various widening projects to address some of the most congested portions of those routes.

The safety and operational improvements projects focus mainly on improving the safety and operations on key roadways, including Farrington Highway, Kalanianaʻole Highway, and Kamehameha Highway.

There is also a roadway improvement intended to provide a second access to the Makakilo area by extending Makakilo Drive south to the Interstate Route H-1 freeway interchange to connect Makakilo Drive to Kualakai Parkway.

5.2 System Performance

5.2.1 Highway and Arterial Level of Service

Table 5-1 provides Level-of-Service (LOS) summaries for all major roadways in lane-miles by LOS category for the AM two-hour peak period (6:00 a.m. to 8:00 a.m.) for the 2035 Baseline and ORTP 2035, respectively. Approximately 75 percent of all roadway lane-miles islandwide are estimated to operate at LOS A during the AM two-hour peak period in the ORTP 2035 as opposed to just over 73 percent in the 2035 Baseline. Under the ORTP 2035, roughly ten percent are projected to operate under congested conditions (i.e., LOS E or F), as compared to 12 percent in the 2035 Baseline. Approximately 24 percent of freeways,

expressways, and ramps are estimated to operate under congested conditions in the ORTP 2035, as compared to 25 percent in the 2035 Baseline alternative. For both alternatives, this is a significantly higher percentage than arterials and collectors, which have just over four percent operating under congested conditions in the ORTP 2035 and approximately six percent in the Baseline. This reflects the fact that freeways, expressways, and ramps serve a proportionately higher level of commute trips.

Table 5-1. AM Two-Hour Peak Period Arterial LOS (lane-miles) – 2035 Baseline and ORTP 2035

Facility Type	LOS A	LOS B	LOS C	LOS D	LOS E	LOS F	Total Lane-Miles
Freeways							
2035 Baseline	202	24	25	23	33	41	348
ORTP 2035	221	31	15	27	31	39	364
Expressways							
2035 Baseline	64	6	8	9	19	23	129
ORTP 2035	62	9	10	12	30	17	140
Ramps							
2035 Baseline	56	5	4	7	6	25	103
ORTP 2035	58	4	8	7	6	24	107
Arterials							
2035 Baseline	595	56	35	34	28	34	782
ORTP 2035	645	63	36	34	25	26	829
Collectors							
2035 Baseline	559	35	14	12	13	15	648
ORTP 2035	609	33	17	10	7	12	688
Total							
2035 Baseline	1,476	126	86	85	99	138	2,010
ORTP 2035	1,595	140	86	90	99	118	2,128
Percentage							
2035 Baseline	73.4%	6.3%	4.3%	4.2%	4.9%	6.9%	100.0%
ORTP 2035	75.0%	6.6%	4.0%	4.2%	4.7%	5.5%	100.0%

Figure 5-1 graphically maps LOS for the ORTP 2035 for all the modeled highway segments throughout the island for the AM two-hour peak period. The majority of congested conditions can be seen in the Interstate H-1 corridor between Ewa and Downtown Honolulu. Other highly congested facilities of note include Farrington Highway accessing Waianae, Kamehameha Highway between Mililani Town and the Honolulu International Airport, Pali Highway, and a small section of Fort Weaver Road in Ewa.

Figure 5-1: ORTP 2035 AM Two-Hour Peak Period LOS – Islandwide

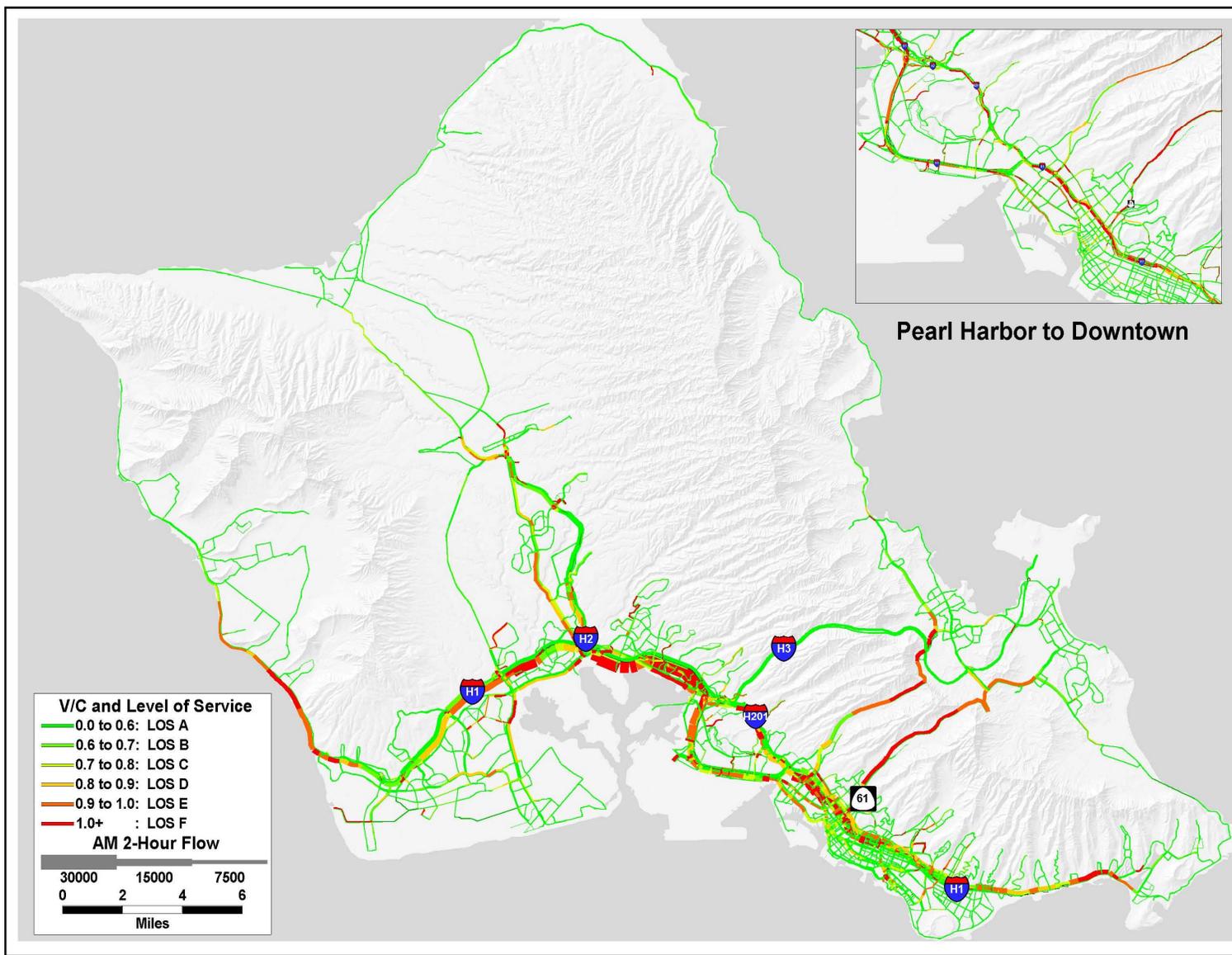


Figure 5-2: ORTP 2035 AM Two-Hour Peak Period LOS – Kapolei and Ewa Area

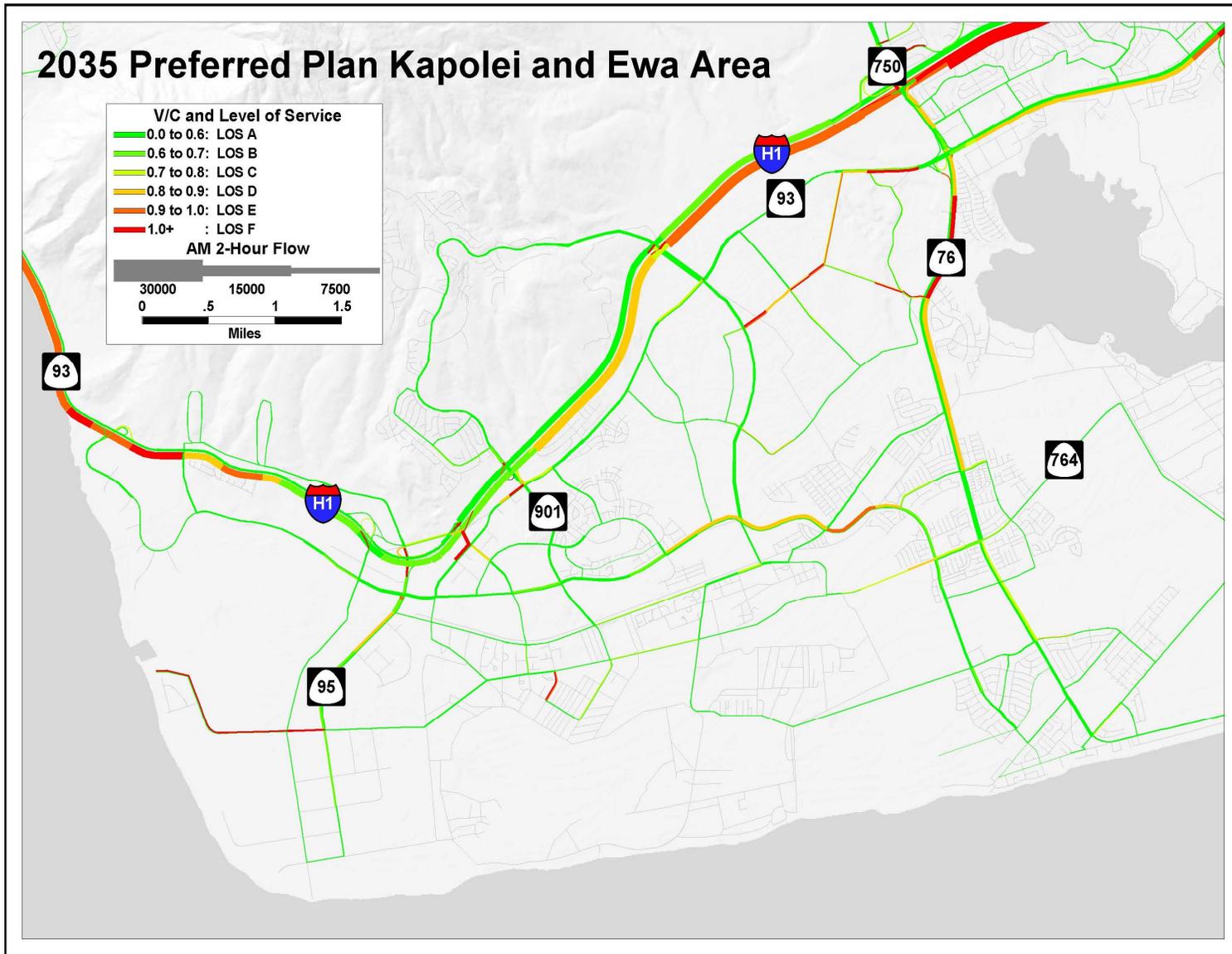


Figure 5-3: ORTP 2035 AM Two-Hour Peak Period LOS – H-1/H-2 Merge

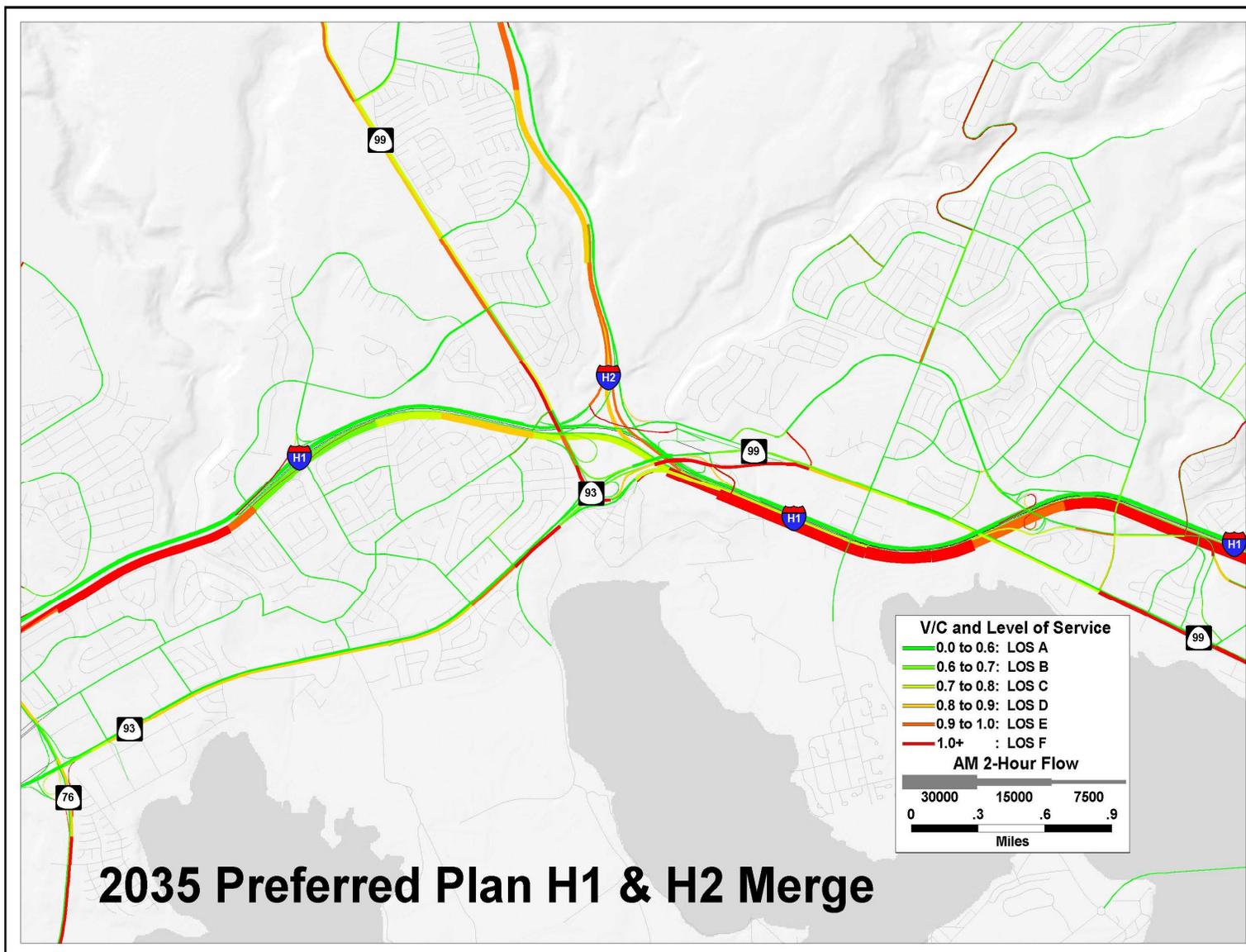


Figure 5-4: ORTP 2035 AM Two-Hour Peak Period LOS – H-1/H-201/H-3

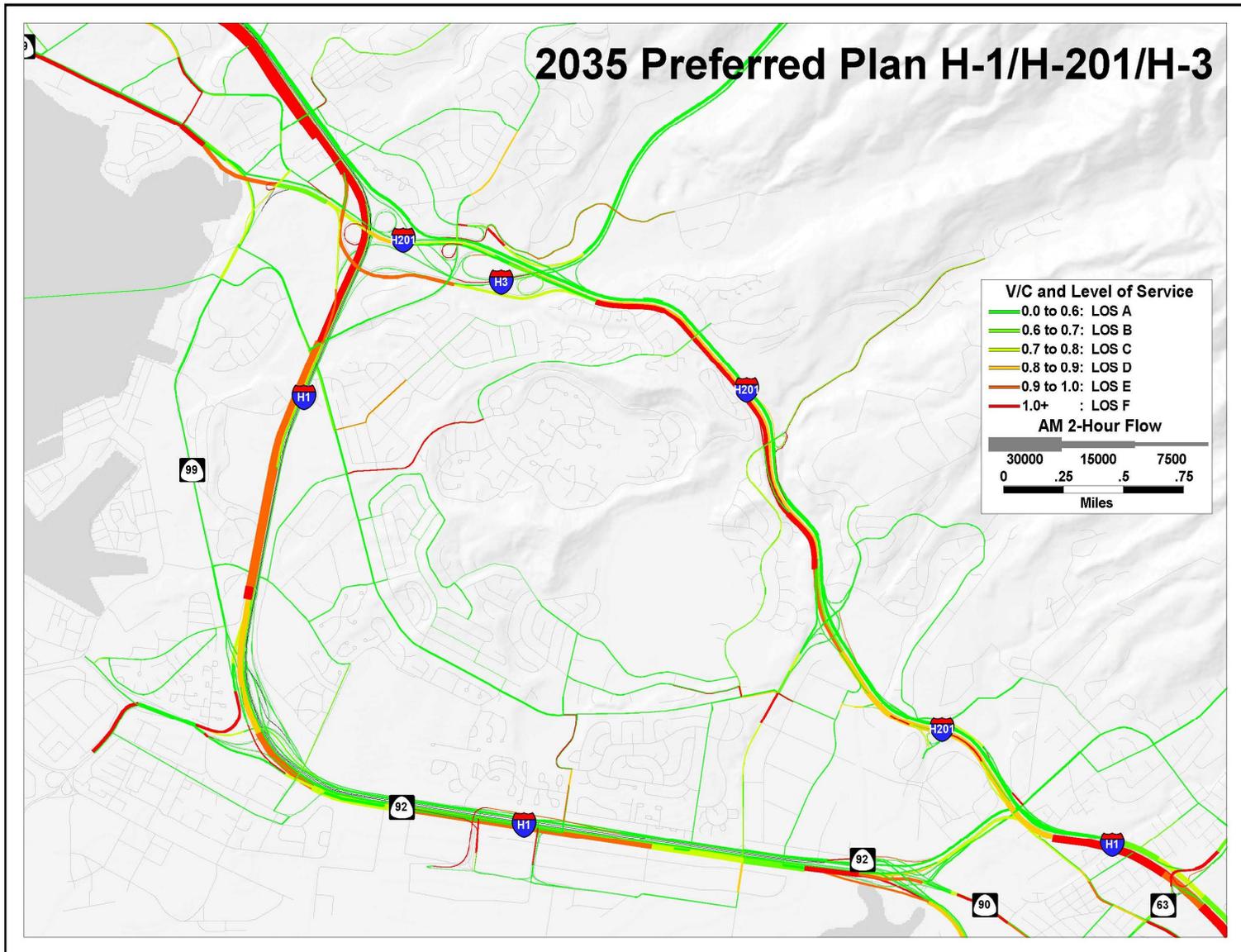
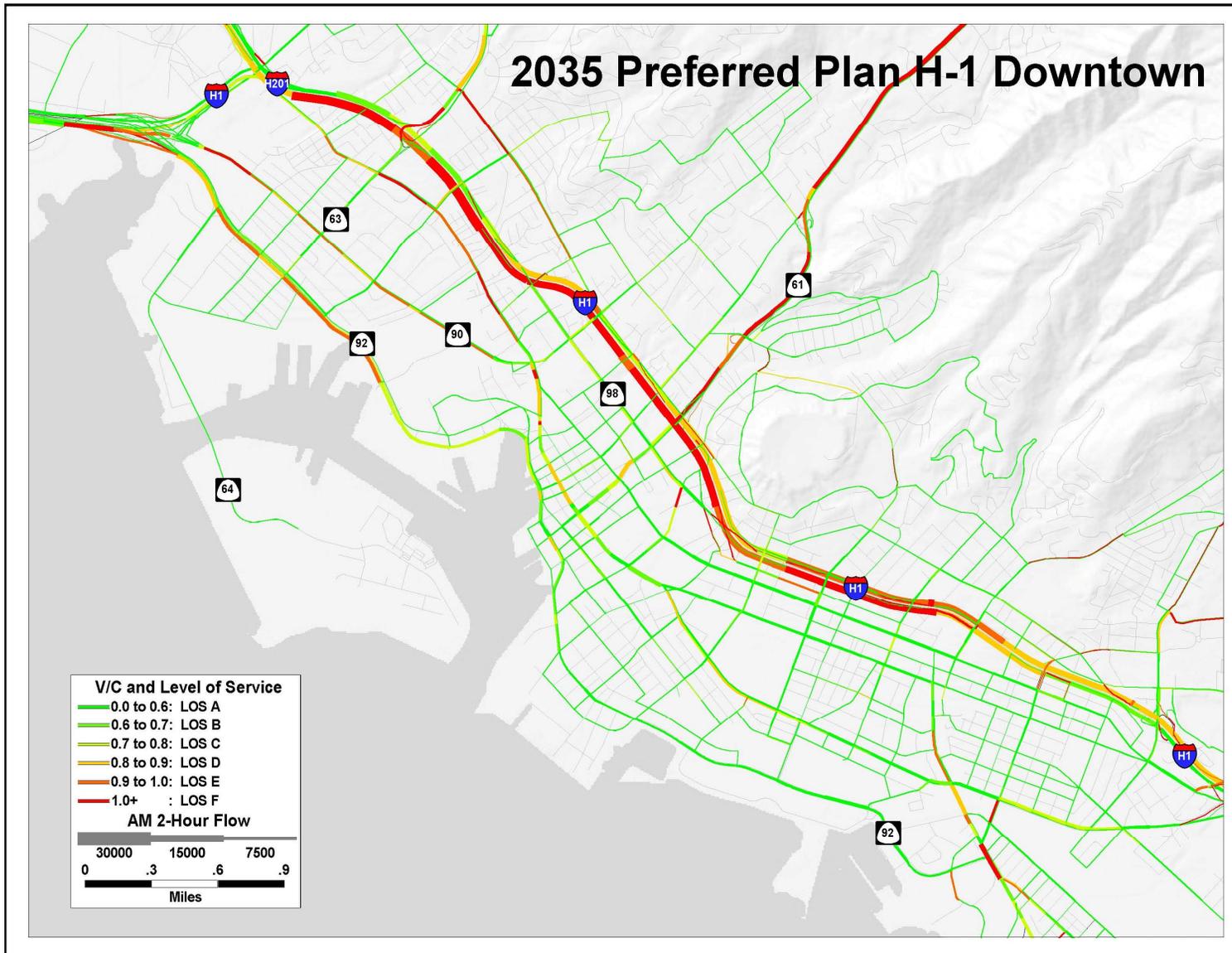


Figure 5-5: ORTP 2035 AM Two-Hour Peak Period LOS – H-1 Downtown



5.2.2 Auto Travel Times to Selected Destinations

Travel times from each Traffic Analysis Zone (TAZ) on Oahu to key destinations across the island were calculated for the AM peak hour using the Dynamic Traffic Assignment (DTA) function in the OahuMPO travel demand forecasting model and are discussed and illustrated below.

Downtown Honolulu

Travel times improved from 60 to 160 minutes estimated for the 2035 Baseline to 45 to 120 for the ORTP 2035 from the Waianae Coast to Downtown Honolulu. Travel times for zones in Central Oahu are also forecasted to improve between the 2035 Baseline and the ORTP 2035. There is very little change in travel times projected from areas Koko Head of the Interstate Routes H-1/H-2 merge to Downtown. Figure 5-6 shows the travel times to Downtown Honolulu in the ORTP 2035. Figure 5-7 shows the difference in auto travel times to Downtown Honolulu between the 2035 Baseline and ORTP 2035.

Kapolei

Travel times are projected to improve significantly along the Waianae Coast to Kapolei during the AM peak for the 2035 ORTP 2035, from roughly 30 to 120 minutes in the Baseline to 20 to 60 minutes. From Downtown Honolulu to Kapolei, travel times remain close to those of the Baseline and range from 20 to 30 minutes. Figure 5-8 shows the travel times to Kapolei in the ORTP 2035. Figure 5-9 shows the difference in auto travel times to Kapolei between the 2035 Baseline and ORTP 2035.

Waikiki

Travel time patterns for trips to Waikiki from Waianae Coast improve from 120 to 180 minutes for the 2035 Baseline to 60 to 120 minutes in the 2035 ORTP 2035. Travel times for some areas in Kapolei and Central Oahu improve slightly but remain similar to the Baseline. Travel times from all other areas to Waikiki remain similar to those of the Baseline. Figure 5-10 shows the travel times to Waikiki in the ORTP 2035.

Mililani

Mililani, located centrally on Oahu, is accessible within 30 minutes from most areas on the island. The Waianae Coast was the exception, with travel times between 120 and 160 minutes for the 2035 Baseline; it remains the exception, but with improved travel times of 45 to 120 minutes for the ORTP 2035. Figure 5-11 shows the travel times to Mililani in the ORTP 2035.

Honolulu International Airport

Travel times ranged from 60 to 160 minutes in the 2035 Baseline from the Waianae Coast and improved to 60 to 120 minutes in the ORTP 2035. Some areas in Kapolei and Central Oahu also saw improved travel times in the ORTP 2035 over the Baseline. From the Downtown Honolulu, Kakaako, and Waikiki areas, estimated travel times to the Airport remain similar to the Baseline with travel times approaching 30 minutes. Figure 5-12 shows the travel times to the Honolulu International Airport in the ORTP 2035.

5.2.3 Intermodal Freight Connections

The planned highway improvements in the ORTP 2035 are anticipated to benefit freight mobility on Oahu. For example, improvement and modification of the freeway access to Interstate Route H-1 between Makakilo Interchange and Palailai Interchange (Kapolei Interchange Complex) will improve the ability of freight to move to and from Kalaeloa Barbers Point Harbor. Congestion relief projects in the ORTP 2035 are likewise anticipated to benefit freight mobility by improving the flow of traffic, specifically by reducing VHD and VHT.

5.2.4 Freight Travel Times for Selected Origin-Destination Pairs

Oahu does not have dedicated freight routes, therefore, peak period travel times between key freight destinations are anticipated to be similar to those estimated for automobile travel, as discussed above. For example, freight travel times from various parts of Oahu to Honolulu Harbor are anticipated to be similar to those for automobile travel to Downtown Honolulu. In addition, estimated automobile travel times to Waikiki and Honolulu International Airport are expected to be similar for freight.

Figure 5-6: ORTP 2035 AM Two-Hour Peak Period Auto Travel Times to Downtown Honolulu

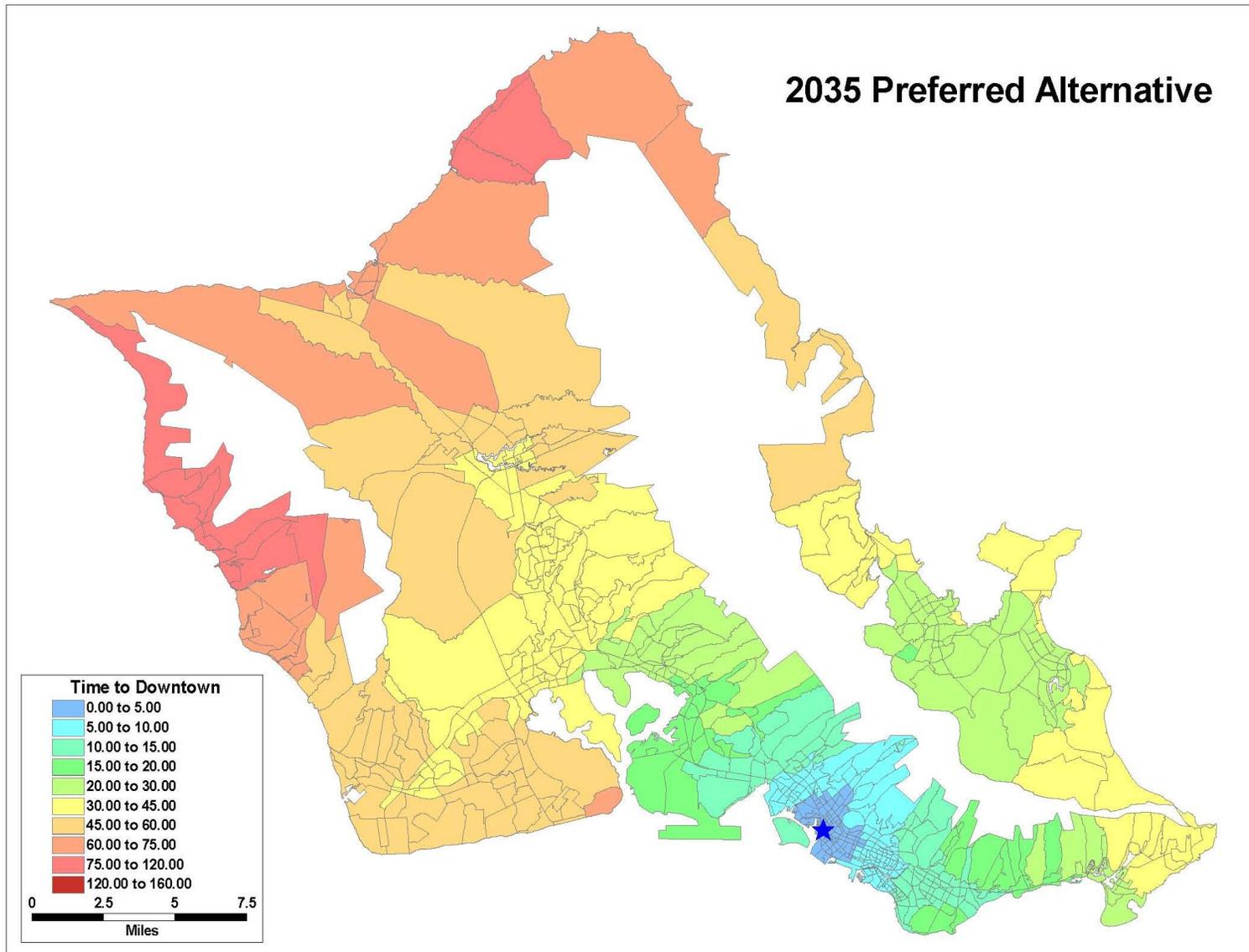


Figure 5-7: Travel Time Difference to Downtown Honolulu – 2035 Baseline and ORTP 2035

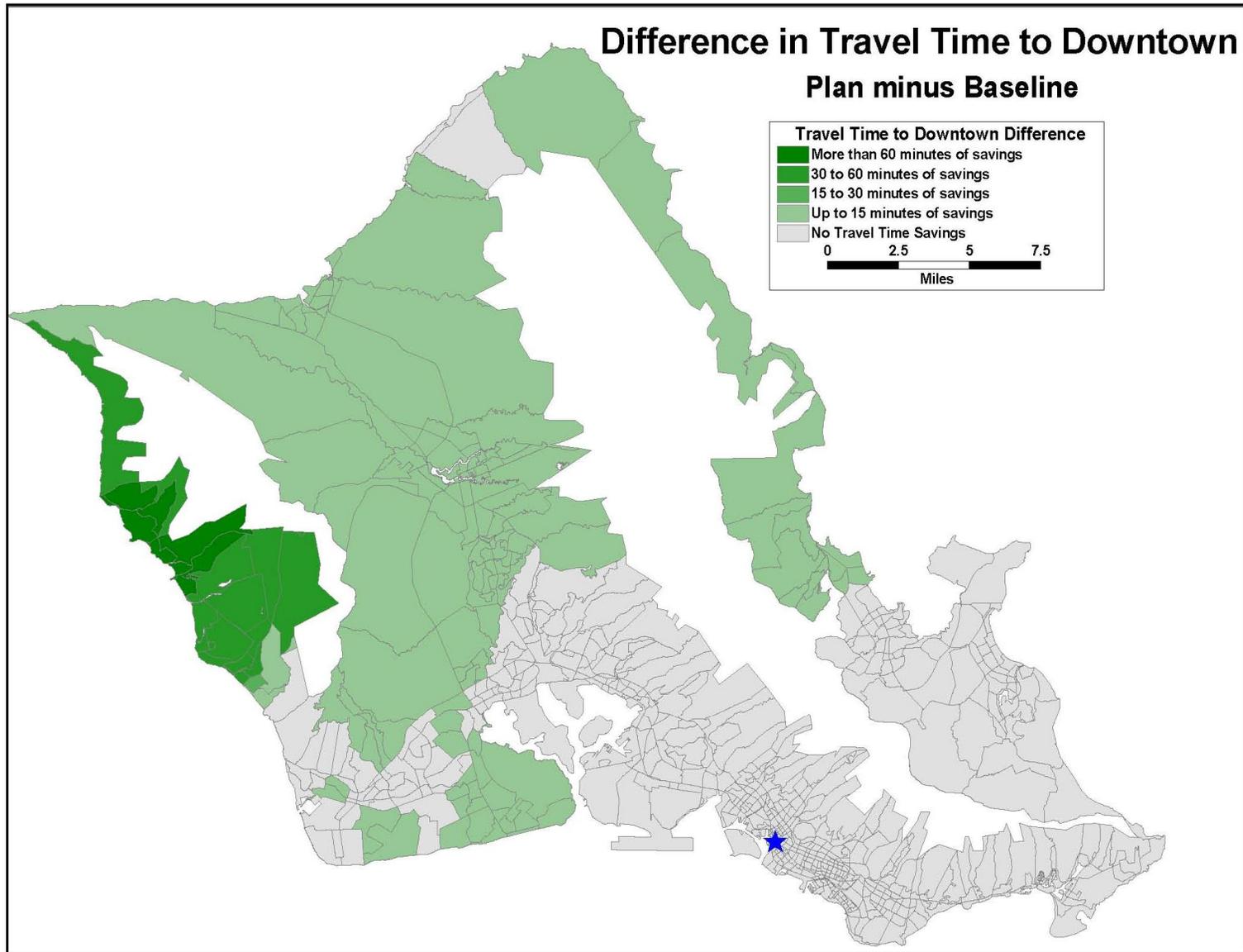


Figure 5-8: ORTP 2035 AM Two-Hour Peak Period Auto Travel Times to Kapolei

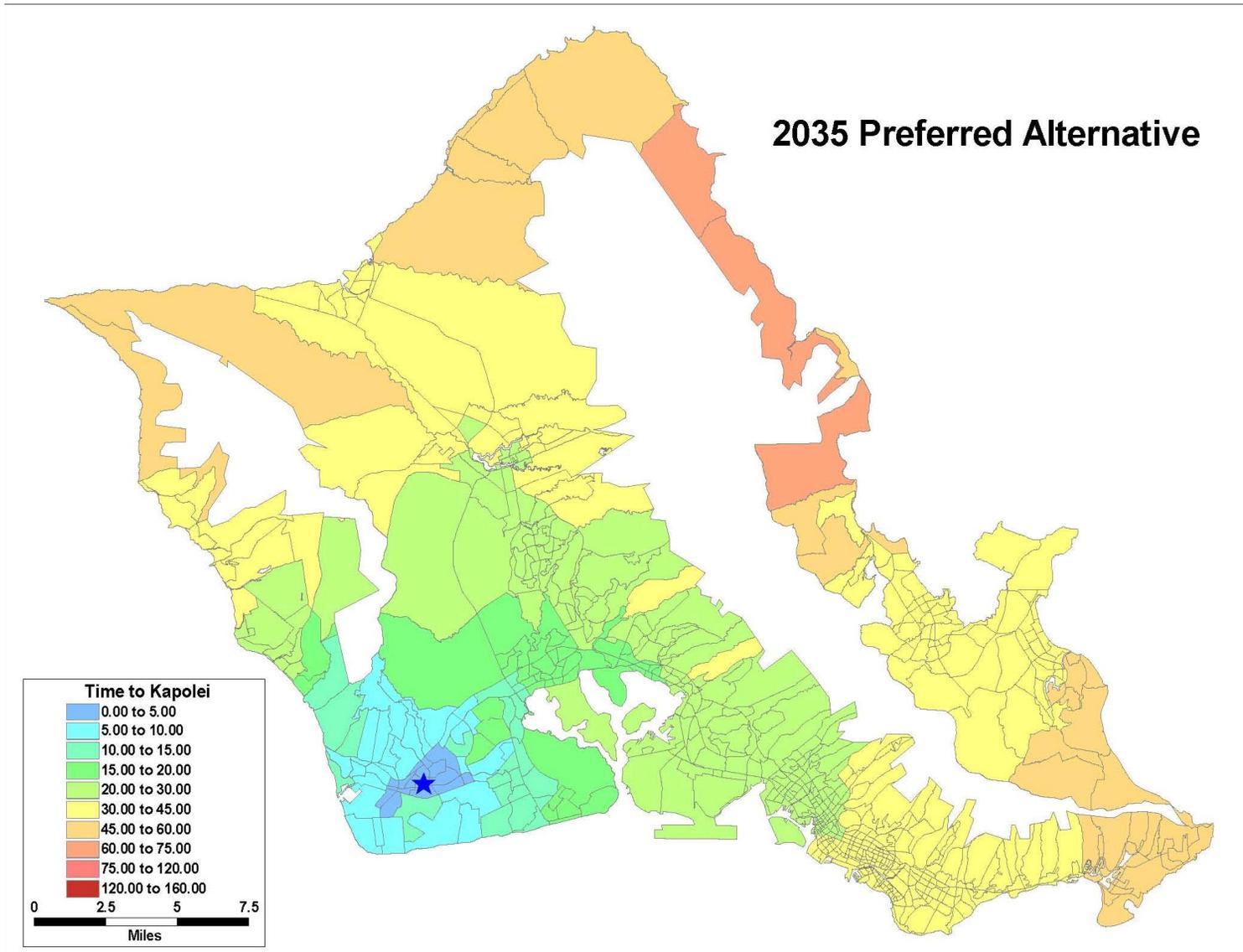


Figure 5-9: Travel Time Difference to Kapolei – 2035 Baseline and ORTP 2035

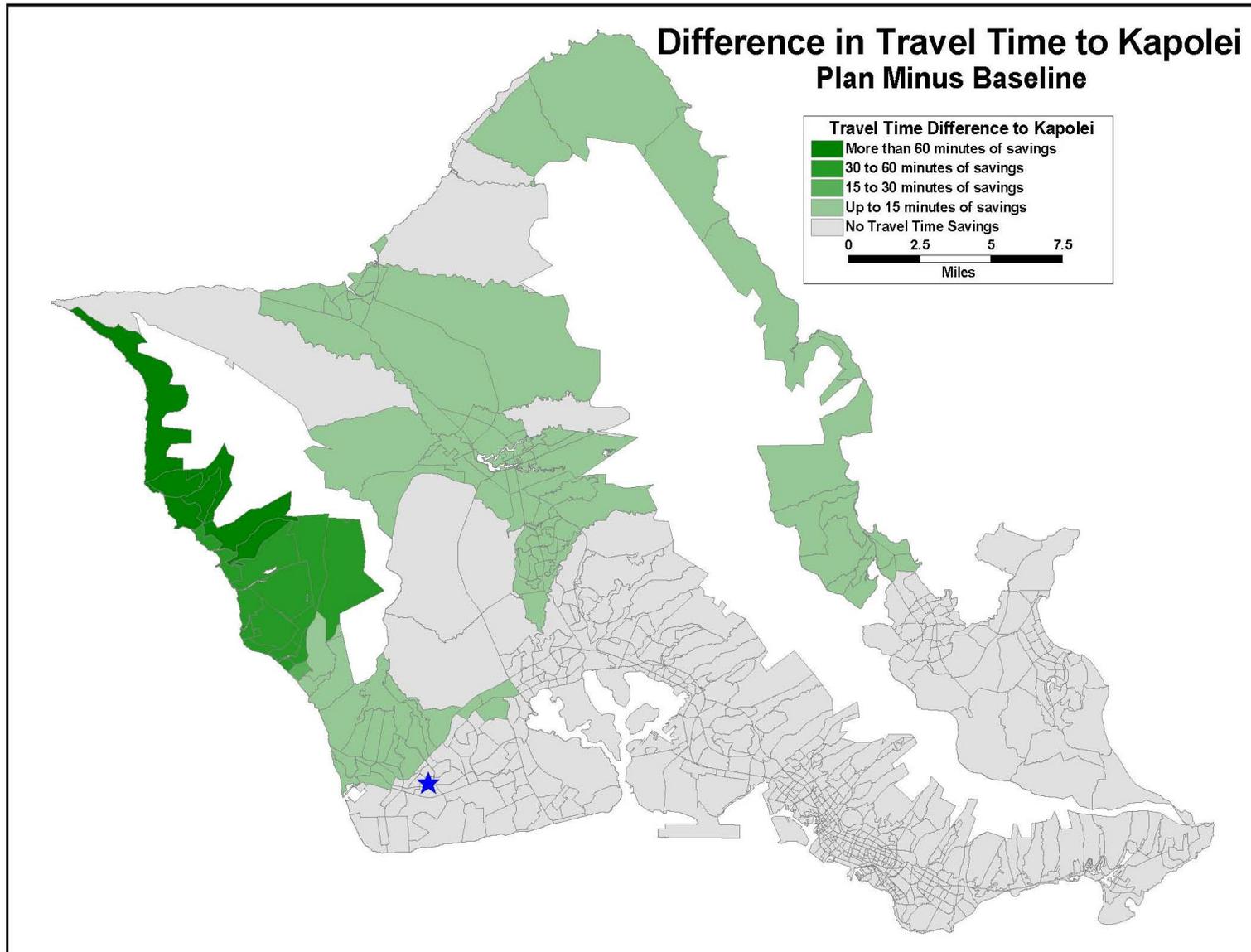


Figure 5-10: ORTP 2035 AM Two-Hour Peak Period Auto Travel Times to Waikiki

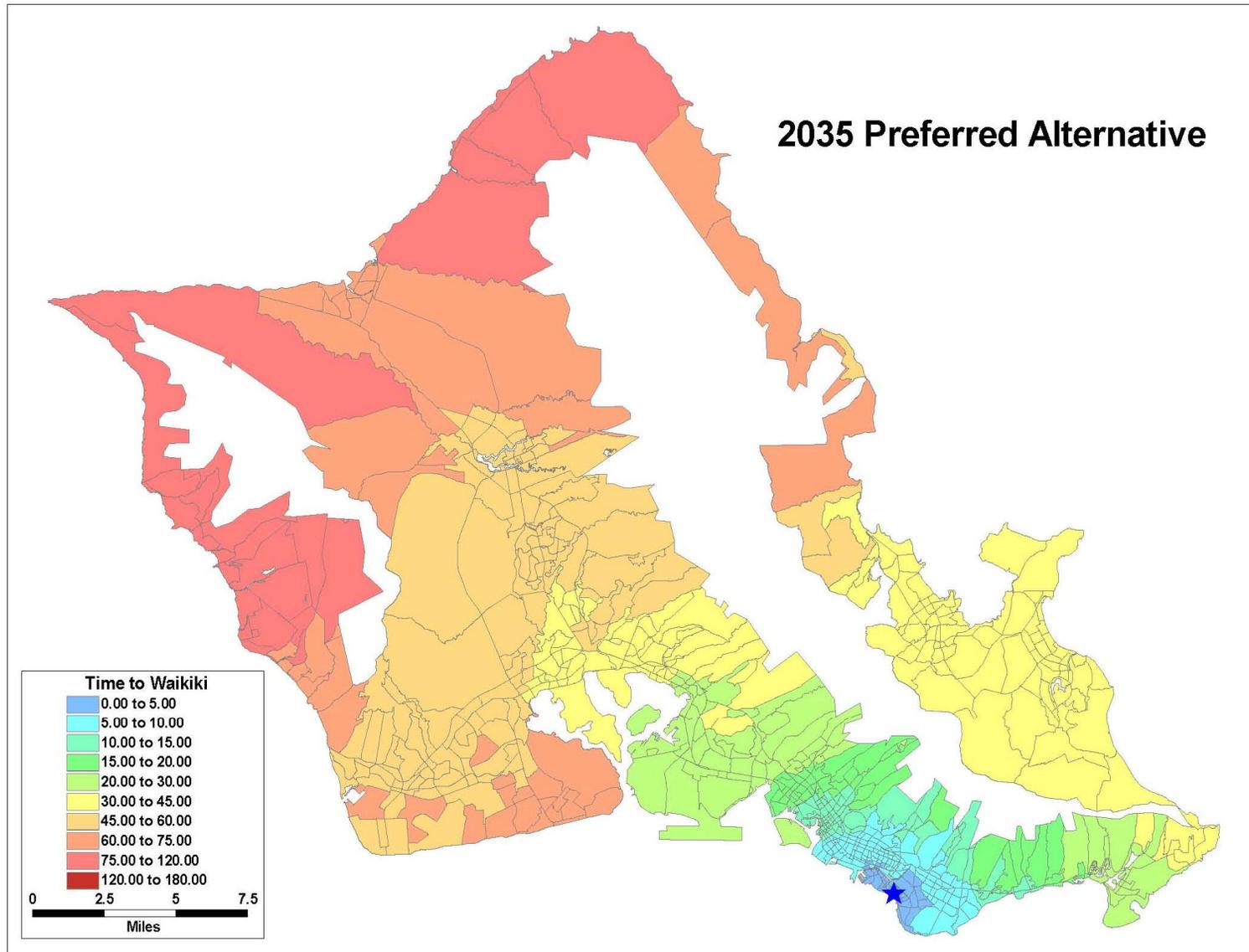


Figure 5-11: ORTP 2035 AM Two-Hour Peak Period Auto Travel Times to Mililani

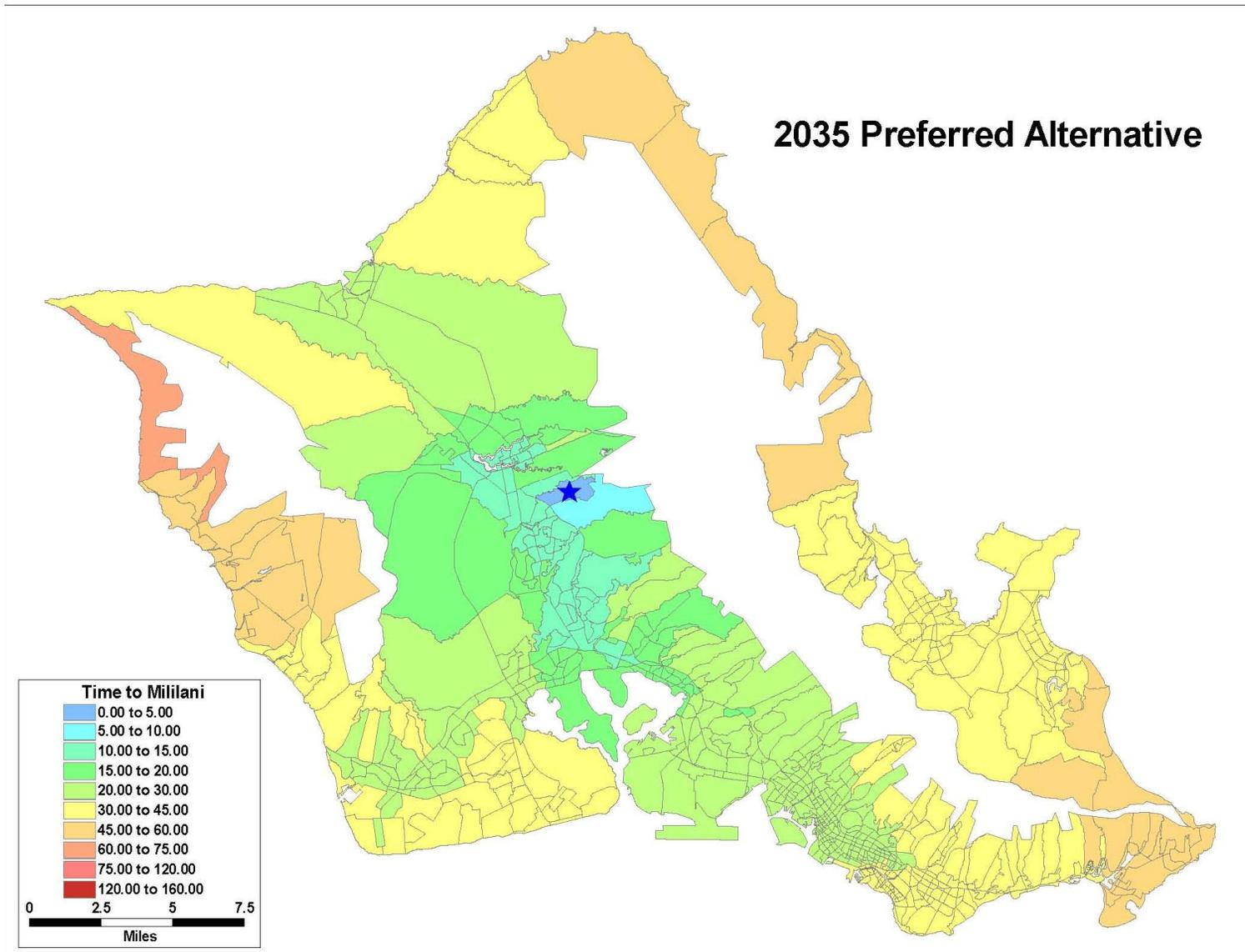
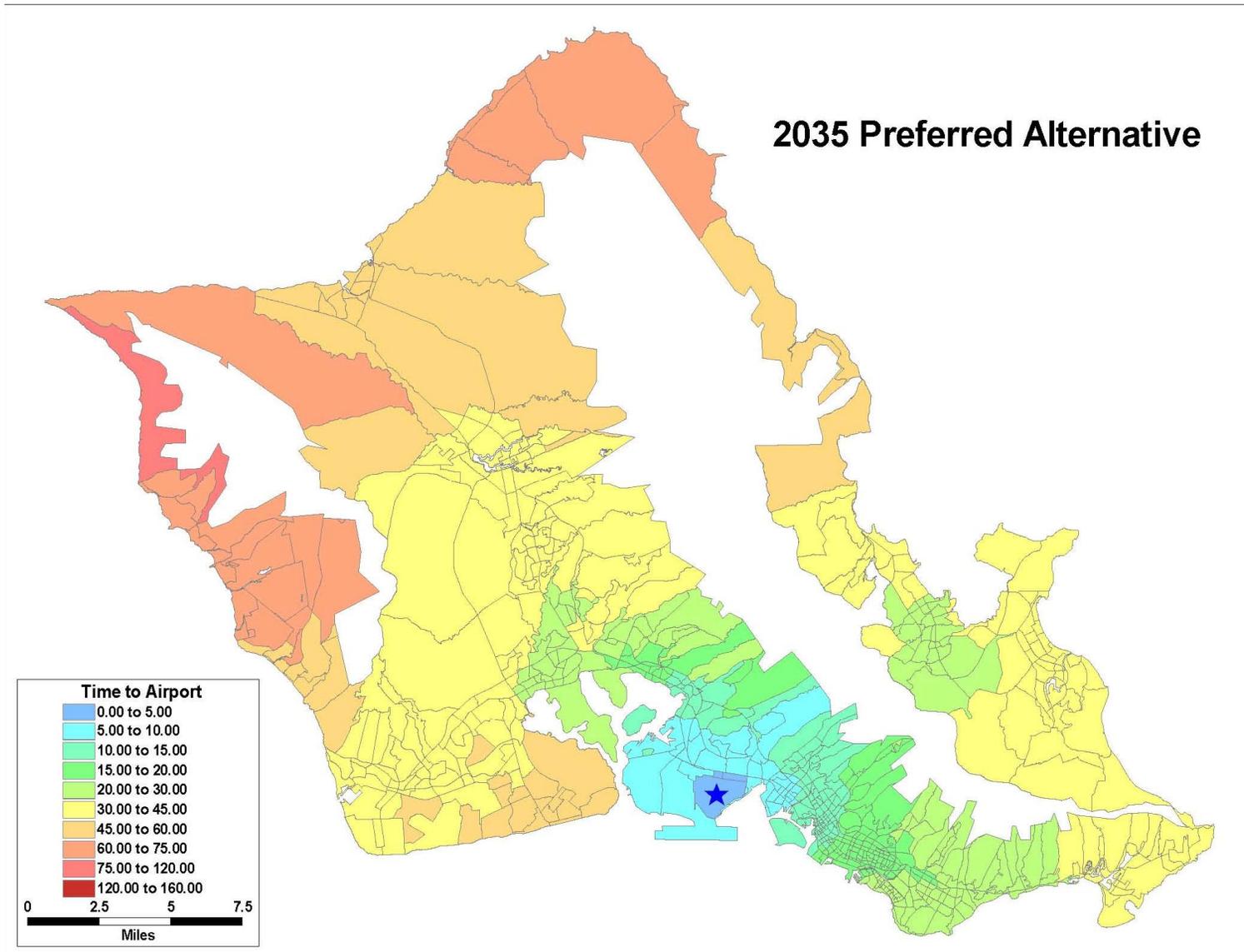


Figure 5-12: ORTP 2035 AM Two-Hour Peak Period Auto Travel Times to Honolulu International Airport



5.2.5 Accident Risks

There are three programs aimed at improving safety along the island's roadways: the Highway Safety Improvement Program, Shoreline Protection Program, and Rockfall Protection Program. Also included are four projects along three highways that would include realignment, widening, improved lighting and signage, and other safety improvement measures. These projects are as follows:

- Kamehameha Highway Safety Improvements, Haleiwa to Kahaluu. Construct safety improvements along Kamehameha Highway, from Haleiwa to Kahaluu. Safety improvements include turn lanes, guardrails, signage, crosswalks, etc. to improve safety. Widening of Kamehameha Highway will only be in areas where needed for storage/turn lanes safety improvements.
- Kamehameha Highway, Safety and Operational Improvements, Kaalaea Stream to Hygienic Store. Construct safety and operational improvements along Kamehameha Highway, between Kaalaea Stream and Hygienic Store. Safety and operational improvements include passing and turning lanes, modification of signals, and installation of signs, flashers, and other warning devices. This project also includes replacement of Kaalaea Stream Bridge and Haiamoa Stream Bridge with structures that meet current design standards.
- Kalaniana'ole Highway, Safety and Operational Improvements, Olomana Golf Course to Waimanalo Beach Park. Construct safety and operational improvements along Kalaniana'ole Highway between the Olomana Golf Course and Waimanalo Beach Park. Specific safety and operational improvements include construction of turning lanes, sidewalks, wheelchair ramps, bike paths or bike lanes, traffic signal upgrades, utility relocation, and drainage improvements.
- Farrington Highway, Safety Improvements, Makua Valley Road to Aliinui Drive. Construct safety improvements on Farrington Highway along the Waianae Coast, from Makua Valley Road at Kaena Point to Aliinui Drive at Kahe Point. This project includes realignment around Makaha Beach Park, between Makau Street and Water Street.

6

ORTP 2035 Conditions and Performance: Bicycle and Pedestrian Facilities

The adoption of the State's Complete Streets Policy, along with voter support for changing the City's Charter concerning the priority of pedestrian and bicycle facilities, are major milestones guiding future development of all roadway infrastructure on Oahu.

The ORTP 2035 includes projects that would improve the conditions of bicycle and pedestrian facilities on the island for users of all experience and comfort levels. These include the implementation of Oahu elements of the State's *Bike Plan Hawaii* and the City and County's *Oahu Bike Plan*. Also to be considered is HDOT's existing policy that when a new roadway is built or an existing roadway widened a bicycle facility shall be built, when feasible. Lastly, included in the islandwide projects is the development and future implementation of the *Pedestrian Master Plan*. These commitments illustrate that the level of awareness regarding such projects is heightened in the ORTP 2035 as compared to existing conditions and the Baseline scenario.

This section discusses the ORTP 2035 in relation to the natural and human environment, and compares the ORTP 2035 to the 2035 Baseline as appropriate.

7.1 Susceptibility to Climate Change

The fact that Oahu is an island makes it susceptible to many of the anticipated impacts of global climate variability. The most significant among them are expected to be from sea-level rise, flooding, and increased storm severity, including tidal surges, and their impacts to transportation infrastructure. Therefore, it is anticipated that transportation facilities that are located within close proximity to coastal zones and other areas prone to flooding could be at risk. These include the two commercial harbors on the island, Honolulu Harbor and Kalaeloa Barbers Point Harbor, Honolulu International Airport, and various roadways, but particularly Farrington Highway, Kalanianaʻole Highway, Kamehameha Highway, and Nimitz Highway.

Current estimates provided by climate scientists from the University of Hawaii at Manoa as well as the National Oceanic Atmospheric Administration indicate it is likely Hawaii will experience a one foot increase in sea level by 2050 and an increase between 2.5 and 6.2 feet by 2100. This will affect not only shoreline areas but, given the islands' permeable soils, may cause inland inundation as well. The resulting higher water table may undermine the stability of certain existing roadways. In addition, there is anticipated to be more periods of extended drought followed by relatively short, intense rainfall events. The concern is destabilization of slopes and increased erosion that may affect existing transportation infrastructure.

The ORTP 2035 includes the Shoreline Protection Program, Rockfall Protection Program, and various other safety and operational improvement projects that would assist in addressing some of these anticipated impacts. Also, the ORTP 2035 states that future transportation facilities should be designed and located in such a manner as to protect them from significant damage or disruption due to global climate variability.

7.2 Air Quality and Fuel Consumption

The State of Hawaii is currently in attainment for air quality. The 2035 Baseline resulted in a daily total of 422,000 gallons of fuel consumed and 5,000 tons of carbon dioxide emissions from over 15.2 million vehicle miles traveled on the roadways modeled for Oahu.

The ORTP 2035 resulted in a daily total of 420,000 gallons of fuel consumed and 5,000 tons of carbon dioxide emissions from over 15.4 million vehicle miles traveled on the roadways modeled for Oahu. This represents a decrease of almost half of one percent in fuel consumption over the 2035 Baseline scenario, while vehicle miles traveled would increase by just over one percent compared to the Baseline.

7.3 Title VI/Environmental Justice (T6/EJ)

This discussion of the 2035 Baseline in comparison to the ORTP 2035 assesses the sub-measures of accessibility, equity, and mobility.

7.3.1 Accessibility

Accessibility can be defined as the ease of reaching opportunities using surface (ground) transportation. Travel time thresholds were used to measure accessibility. A travel time threshold of 20 minutes was used for all trips to calculate the number of people within that predetermined travel time to those travel destination opportunities represented by specific trip generator zones, including selected employment, college, regional shopping center, and hospital trip generators.

Table 7-1 and Table 7-2 below show the accessibility to the selected trip generators for both T6/EJ and non-T6/EJ TAZs for the 2035 Baseline and the ORTP 2035 during both the AM Peak Period and Off-Peak conditions. The ratio in the table describes the ratio of percent of T6/EJ TAZs to percent of non-T6/EJ TAZs that are within 20 minutes travel time of the destinations. The magnitude of this ratio describes the degree of advantage that either the T6/EJ TAZs or the non-T6/EJ TAZs have over each other. If the ratio is less than one then the advantage lies with the non-T6/EJ TAZs, while if the number is greater than one then the advantage lies with the T6/EJ TAZs. A value equal to one indicates parity between the TAZs.

The analysis demonstrated that, for AM peak period auto trips, 20-minute accessibility to hospitals and regional shopping centers is very high and comparable for both the T6/EJ and non-T6/EJ populations, with results generally improved (i.e., more T6/EJ and non-T6/EJ TAZs within 20 minutes of destinations) compared with 2035 Baseline conditions. Non-T6/EJ populations continue to have better accessibility to colleges and employment centers than T6/EJ populations under the ORTP 2035. Similar patterns can be seen for transit trips during the AM peak period¹.

¹ For the off-peak period however, travel time analyses for T6/EJ populations showed that 20-minute accessibility to employment centers via transit decreased slightly for the ORTP 2035 as compared to the Baseline conditions. However, to be consistent with previous analyses (e.g., ORTP 2030) this analysis only took into account “in-vehicle” transit travel time, and did not incorporate transit access times (e.g., walk times to transit), or transit wait times. A check of the T6/EJ areas where in-vehicle transit times increased for ORTP 2035 showed that either service frequency was increased (hence average wait times decreased) and/or transit routes were located closer to the T6/EJ users (hence walk times decreased). In all cases, *total* transit travel times to employment centers for T6/EJ populations *decreased* for ORTP 2035 as compared to the Baseline conditions, even though in some cases the *in-vehicle* transit travel time slightly increased.

Table 7-1. T6/EJ TAZs within 20 minutes of Selected Destinations – AM Peak Period

Measure	To Colleges			To Hospitals			To Regional Shopping Centers			To Employment Centers		
	T6/EJ	Non-T6/EJ	Ratio	T6/EJ	Non-T6/EJ	Ratio	T6/EJ	Non-T6/EJ	Ratio	T6/EJ	Non-T6/EJ	Ratio
Auto Trips												
Number of TAZs												
2035 Baseline	61	521	N/A	103	645	N/A	102	638	N/A	75	584	N/A
ORTP 2035	69	552	N/A	105	646	N/A	102	639	N/A	83	601	N/A
Percent of All TAZs												
2035 Baseline	56.0%	79.5%	0.70	94.5%	98.5%	0.96	93.6%	97.4%	0.96	68.8%	89.2%	0.77
ORTP 2035	63.3%	84.3%	0.75	96.3%	98.6%	0.98	93.6%	97.6%	0.96	76.1%	91.8%	0.83
Number of People												
2035 Baseline	90,519	681,329	N/A	191,496	900,713	N/A	181,122	895,437	N/A	123,170	809,905	N/A
ORTP 2035	110,387	726,035	N/A	195,874	900,260	N/A	181,122	898,855	N/A	141,603	852,165	N/A
Percent of All People												
2035 Baseline	45.2%	74.6%	0.61	95.6%	98.6%	0.97	90.4%	98.0%	0.92	61.5%	88.7%	0.69
ORTP 2035	55.1%	79.5%	0.69	97.8%	98.6%	0.99	90.4%	98.4%	0.92	70.7%	93.3%	0.76
Transit Trips												
Number of TAZs												
2035 Baseline	61	505	N/A	89	567	N/A	90	586	N/A	65	494	N/A
ORTP 2035	64	522	N/A	89	577	N/A	92	588	N/A	74	511	N/A
Percent of All TAZs												
2035 Baseline	56.0%	77.1%	0.73	81.7%	86.6%	0.94	82.6%	89.5%	0.92	59.6%	75.4%	0.79
ORTP 2035	58.7%	79.7%	0.74	81.7%	88.1%	0.93	84.4%	89.8%	0.94	67.9%	78.0%	0.87
Number of People												
2035 Baseline	94,017	632,247	N/A	155,598	791,986	N/A	153,578	787,435	N/A	95,731	662,343	N/A
ORTP 2035	101,921	672,942	N/A	158,082	812,981	N/A	156,425	794,252	N/A	122,676	713,261	N/A
Percent of All People												
2035 Baseline	46.9%	69.2%	0.68	77.7%	86.7%	0.90	76.7%	86.2%	0.89	47.8%	72.5%	0.66
ORTP 2035	50.9%	73.7%	0.69	78.9%	89.0%	0.89	78.1%	87.0%	0.90	61.2%	78.1%	0.78

Table 7-2. T6/EJ TAZs within 20 minutes of Selected Destinations –Off Peak

Measure	To Colleges			To Hospitals			To Regional Shopping Centers			To Employment Centers		
	T6/EJ	Non-T6/EJ	Ratio	T6/EJ	Non-T6/EJ	Ratio	T6/EJ	Non-T6/EJ	Ratio	T6/EJ	Non-T6/EJ	Ratio
Auto Trips												
Number of TAZs												
2035 Baseline	85	630	N/A	108	654	N/A	102	649	N/A	93	642	N/A
ORTP 2035	87	634	N/A	108	654	N/A	103	649	N/A	94	643	N/A
Percent of All TAZs												
2035 Baseline	78.0%	96.2%	0.81	99.1%	99.8%	0.99	93.6%	99.1%	0.94	85.3%	98.0%	0.87
ORTP 2035	79.8%	96.8%	0.82	99.1%	99.8%	0.99	94.5%	99.1%	0.95	86.2%	98.2%	0.88
Number of People												
2035 Baseline	154,474	889,300	N/A	198,864	912,994	N/A	181,122	906,374	N/A	162,199	900,424	N/A
ORTP 2035	158,943	896,323	N/A	198,864	912,994	N/A	182,546	906,374	N/A	164,725	900,546	N/A
Percent of All People												
2035 Baseline	77.1%	97.4%	0.79	99.3%	100.0%	0.99	90.4%	99.2%	0.91	81.0%	98.6%	0.82
ORTP 2035	79.4%	98.1%	0.81	99.3%	100.0%	0.99	91.1%	99.2%	0.92	82.2%	98.6%	0.83
Transit Trips												
Number of TAZs												
2035 Baseline	68	565	N/A	85	603	N/A	97	597	N/A	84	562	N/A
ORTP 2035	68	571	N/A	88	607	N/A	97	598	N/A	82	569	N/A
Percent of All TAZs												
2035 Baseline	62.4%	86.3%	0.72	78.0%	92.1%	0.85	89.0%	91.1%	0.98	77.1%	85.8%	0.90
ORTP 2035	62.4%	87.2%	0.72	80.7%	92.7%	0.87	89.0%	91.3%	0.97	75.2%	86.9%	0.87
Number of People												
2035 Baseline	114,607	773,028	N/A	149,066	845,112	N/A	163,887	818,287	N/A	135,137	773,373	N/A
ORTP 2035	116,024	786,751	N/A	162,130	845,455	N/A	163,887	822,634	N/A	128,043	790,301	N/A
Percent of All People												
2035 Baseline	57.2%	84.6%	0.68	74.4%	92.5%	0.80	81.8%	89.6%	0.91	67.5%	84.7%	0.80
ORTP 2035	57.9%	86.1%	0.67	80.9%	92.6%	0.87	81.8%	90.1%	0.91	63.9%	86.5%	0.74

7.3.2 Equity

Equity can be defined as the equitable distribution of transportation investments. To assess the equity of funding allocations across the T6/EJ and non-T6/EJ neighborhoods, it was necessary to allocate the expenditures of the ORTP 2035 to different geographical areas within the community. Some of the projects and programs in the ORTP 2035 are islandwide and/or programmatic in nature and therefore could not be specifically located and were not included in the equity analysis. Table 7-3 below shows the results of the equity analysis for both T6/EJ and non-T6/EJ block groups for those location-specific projects that could be analyzed.

Table 7-3. T6/EJ Equity Analysis – Distribution of Total ORTP 2035 Dollars

	ORTP 2035		
	T6/EJ	Non-T6/EJ	Total
Number of Block Groups	58	374	432
Average Investment by Block Group (\$Million)	\$10	\$7	\$8
Total Cost of Projects (\$Million)*	\$577	\$2,664	\$3,241
Percent Project Investment	18%	82%	100%
Total Population	152,112	724,044	876,156
Average Per Capita Investment (\$Million)	\$3,790	\$3,680	\$3,699

*In year of expenditure dollars.

Note: Population and block group information contained in this table is based on data from the 2000 United States Census.

Block groups designated as T6/EJ would, at \$10 million on average, receive about 40 percent more investment dollars than non-T6/EJ designated block groups (\$7 million on average) in the ORTP 2035. It should also be noted that while T6/EJ block groups combined would receive fewer total dollars than non-T6/EJ block groups combined, the average per capita investment would be similar.

7.3.3 Mobility

Mobility can be defined as the ease of movement of people, goods, and services. The mobility evaluation calculates the average travel time from both T6/EJ and non-T6/EJ designated areas to selected employment centers during the AM peak period.

As shown in Table 7-4 below, the analysis demonstrates that the difference in average auto travel time to employment centers between T6/EJ TAZs and non-T6/EJ TAZs is anticipated to decrease from 19 minutes to 11 minutes with implementation of the ORTP 2035 compared to the 2035 Baseline. Similarly, the difference in average transit travel times between T6/EJ TAZs and non-T6/EJ TAZs to employment centers would decrease from 26 minutes to 18 minutes.

Table 7-4. T6/EJ Mobility – Average Travel Time to Employment Centers (AM Peak)

Mode	2035 Baseline		ORTP 2035	
	T6/EJ	Non-T6/EJ	T6/EJ	Non-T6/EJ
Auto (minutes)	48	29	38	27
Transit (minutes)	76	50	64	46
Average by Auto or Transit (minutes)	62	40	51	37

Based on the information presented in Chapters 3 through 7, this chapter summarizes the performance of the ORTP 2035 preferred scenario in regards to the 36 identified performance measures outlined in Deliverable 9.1.2 *ORTP Scenarios Evaluation Methodology Technical Memorandum*. The evaluation consolidates quantitative results from the travel demand forecasting model (reflecting the effects of the projects that could be modeled) with qualitative assessments of the effects of components of the ORTP 2035 preferred scenario that were not modeled (e.g., bicycle and pedestrian improvements, operations and maintenance programs, and travel demand management strategies). The result is a ranking of the ORTP 2035 preferred scenario in comparison to the 2035 Baseline across each performance measure as shown in Table 8-1. The final column is meant to illustrate whether the ORTP 2035 results in an improvement over (5), decrease in (1), or generally the same performance (3) when compared to the Baseline.

Generally, the ORTP 2035 preferred scenario results in improvement over the 2035 Baseline for a majority of the performance measures (24 out of 36); is similar to the 2035 Baseline in performance for eight of the 36 measures; and may perform worse than the 2035 Baseline for four of the 36 measures (cost, disruption during construction, and effects on the natural and built environment). The latter three measures would be addressed through mitigation identified during the environmental process for specific elements of the preferred scenario. Overall, however, the ORTP 2035 preferred scenario has a positive effect on the Island of Oahu's transportation system.

Table 8-1. ORTP 2035 Preferred Scenario Evaluation Summary

Performance Measure	Description	2035 Baseline Performance	ORTP 2035 Performance	ORTP 2035 Performance in Relation to Baseline
Transportation Facilities Overarching Goal: Provide an inclusive, multi-modal transport system whose connectedness provides efficient means for users desiring to move about this island by bicycle, freight carrier, pedestrian facility, road, transit service, and intermodal connectors.				
Bicycle and Pedestrian Facilities	Compares the level of investment in new or improved non-motorized transportation elements as well as potential impacts to existing bicycle and pedestrian facilities, and assesses how the scenario affects continuity of and accessibility to the bicycle/pedestrian network.	Adds some bicycle and pedestrian facilities.	Adds additional bicycle and pedestrian facilities on top of what the Baseline would.	5
Intermodal Freight Connections	Assesses the quality of connections between freight modes (highway, air and seaports) based on quality (suitable routes, design standards, conflicts, etc.) and redundancy of connections.	Contains some improvements to the Interstate system.	Contains additional improvements to the Interstate system and substantial interchange improvements in key areas.	5
Modal Conflicts	Assesses the candidate improvements' affect(s) on the potential for modal conflicts by assessing the negative effect(s) on other travel modes.	Contains some new bicycle and pedestrian facilities, and improves others.	Contains a greater amount of new bicycle and pedestrian facilities, leading to better separation of non-motorized from motorized modes.	5
Mode Share	Measures the share (as a percentage) of person-trips carried by travel modes (e.g., single-occupant vehicle [SOV], high-occupant vehicle [HOV], transit, bicycle, pedestrian) based on travel demand model output.	4,043,100 total daily person trips: 36.9% SOV; 45.6% HOV; 6.1% transit; 1.1% bicycle; 10.3% pedestrian.	4,044,100 total daily person trips: 37.1% SOV; 45.6% HOV; 6.1% transit; 1.1% bicycle; 10.1% pedestrian.	3

Key: 1 =Decrease in performance compared to baseline, 3 =Similar to baseline, 5 =Improvement over baseline

Performance Measure	Description	2035 Baseline Performance	ORTP 2035 Performance	ORTP 2035 Performance in Relation to Baseline
Regional Transportation Linkages	Assesses whether the candidate improvements provide connections between regional transportation facilities or services.	Includes the HHCTC Project.	Includes substantial investment in the transit system, including construction of additional transit centers. Also includes many more improvements in the Interstate system and other regional roadways.	5
Improved Accessibility to the Transportation System for Persons with Disabilities	Assesses the level of investment in the proposed project or program that supports the <i>Americans with Disabilities Act Accessibility Guidelines</i> .	Contains some projects that would result in improved sidewalk facilities.	Contains the Human Services Transportation Coordination Program, and numerous improvements to TheBus and paratransit operations.	5
Transportation Operations and Services Overarching Goal: Develop, operate, and maintain Oahu's islandwide transportation system to ensure the efficient, dependable, safe, secure, convenient, and economical movement of people and goods.				
Economic Vitality	Assesses the contribution of candidate improvements to the economic development and vitality of the region in terms of both job creation and reducing the costs associated with congestion.	Compared to 2007, the Baseline would result in overall decrease in LOS and substantial increases in VHD for all facility types measured.	Results in general overall improvement in LOS and noticeable decreases in VHD for all facility types measured. Also improves access to port facilities.	5
Average Vehicle Occupancy	Measures the average number of occupants per automobile based on travel demand model output, excluding buses and commercial vehicles.	Forecasted at 1.90 persons per vehicle, across all trip purposes.	Forecasted at 1.90 persons per vehicle, across all trip purposes.	3

Key: 1 =Decrease in performance compared to baseline, 3 =Similar to baseline, 5 =Improvement over baseline

Performance Measure	Description	2035 Baseline Performance	ORTP 2035 Performance	ORTP 2035 Performance in Relation to Baseline
Condition and/or Life Span of Transportation Infrastructure	Assesses whether the candidate improvements upgrade the condition and/or life span of transportation infrastructure and the degree to which strategies balance resources for construction, rehabilitation, and maintenance.	Generally contains projects soon to be or currently under construction, or recently completed.	Contains substantial investment in operations, maintenance, and system preservation projects.	5
Highway and Arterial Level-of-Service (LOS)	Measures (in lane-miles) and maps LOS for all major highway and arterial segments based on travel demand model Volume/Capacity ratios.	Total of all facility types operating at LOS A=73.4%; LOS B=6.3%; LOS C=4.3%; LOS D=4.2%; LOS E=4.9%; LOS F=6.9%.	Total of all facility types operating at LOS A=75.0%; LOS B=6.6%; LOS C=4.0%; LOS D=4.2%; LOS E=4.7%; LOS F=5.5%. Noticeable decrease in facilities operating at LOS F.	5
Historical Accident Risks	Assesses whether candidate improvements address existing high-accident locations and maps those locations based on compiled accident data for available modes.	Contains two projects that would include construction of some safety improvements.	Contains three programs aimed at improving safety, and four projects along three highways that include safety improvements.	5
Homeland Security, Personal Security, and All-Hazards Preparedness	Assesses whether candidate strategies are consistent with and support Homeland Security initiatives, personal security concerns, and all-hazards preparedness.	Contains some projects that would widen, reconstruct, and/or realign roadways that could result in improved access/egress in case of emergency.	Contains one second-access project, and additional projects that would widen, reconstruct, and/or realign roadways on top of those considered in the Baseline.	5
Operations Management Strategies	Assesses whether the candidate improvements effectively employ ITS, TSM, and/or TDM techniques.	Contains the Freeway Management System, an ITS investment of \$55 M; also includes the Computerized Traffic Control System that would improve connectivity to the Traffic Control Center, \$17.9 M.	Contains substantial investment in ITS (\$158.8 M total) and TDM (\$30 M total) measures; also includes the Joint Traffic Management Center.	5

Key: 1 =Decrease in performance compared to baseline, 3 =Similar to baseline, 5 =Improvement over baseline

Performance Measure	Description	2035 Baseline Performance	ORTP 2035 Performance	ORTP 2035 Performance in Relation to Baseline
Screenline Person-Trips	Measures the person-trips (all modes) crossing study area screenlines based on travel demand model output.	The total number of person trips islandwide is expected to increase by 26 percent between Year 2007 conditions and the 2035 Baseline.	Daily screenline person trips remain steady or decrease for all but six screenlines: Kalauao, Waikele, Kahe Point, Ewa, Waipahu, and Salt Lake – areas that contain substantial roadway improvements.	3
Total Annual System Costs	Estimates annualized transportation costs (capital, operating, and maintenance) over a predetermined span of time based on available cost information.	Total annual system costs were not calculated for the Baseline.	The ORTP 2035 preferred scenario projects cost \$23.8 billion, in total.	1
Transit Ridership	Measures number of transit patrons based on travel demand model output.	Estimated daily boardings of 388,700, of which 100,800 are for rail.	Estimated daily boardings of 388,100, of which 99,900 are for rail.	3
Travel Demand Management	Assesses the degree to which candidate improvements employ or support TDM techniques to reduce travel demand based on the potential to reduce vehicle trips.		Includes a comprehensive travel demand management (TDM) program beyond what is part of the 2035 baseline.	5
Travel Times [Selected Origin-Destination (OD) Pairs]: Auto	Measures and maps the average peak period travel time between key destinations based on travel demand model output.	Contains some improvements to the Interstate system.	Contains additional improvements to the Interstate system and substantial interchange improvements in key areas, resulting in travel time improvements over the 2035 baseline between key destinations (e.g., to downtown from Waianae, Kapolei, and Mililani).	5

Key: 1 =Decrease in performance compared to baseline, 3 =Similar to baseline, 5 =Improvement over baseline

Performance Measure	Description	2035 Baseline Performance	ORTP 2035 Performance	ORTP 2035 Performance in Relation to Baseline
Travel Times [Selected Origin-Destination (OD) Pairs]: Freight	Measures and maps the average peak period travel time between key freight destinations based on travel demand model output.	Contains some improvements to the Interstate system.	Contains additional improvements to the Interstate system and substantial interchange improvements in key areas facilitating freight movements such as between Barbers Point and H-1.	5
Travel Times [Selected Origin-Destination (OD) Pairs]: Public Transit	Measures and maps the average peak period travel time between key destinations on transit based on travel demand model output.	Contains the HHCTC Project. Also contains some improvements for the Interstate system, which would improve travel times for all modes.	Contains substantial investment in the transit system, including construction of additional transit centers providing better access for many riders, hence improving access times. Also includes considerable investment in the Interstate system, which improves travel times for all modes.	5
Vehicle Hours of Delay (VHD)	Measures the total hours of delay (daily and peak period) experienced by all vehicles on the network based on travel demand model output. Delay is the difference between predicted travel times and travel time under free-flow (uncongested) conditions.	2035 Baseline results in a substantial increase in VHD over the Year 2007 conditions for all facility types measured (27,900, or 30.7%).	Results in noticeable decrease (-18,700 hours, or -15.7%) in VHD for all facility types measured.	5
Vehicle Hours of Travel (VHT)	Measures the total duration of trips by motorized vehicles (automobiles, buses, trucks) based on travel demand model output.	2035 Baseline results in a noticeable increase in VHT over the Year 2007 conditions for all facility types measured (80,200, or 20.9%).	Results in decrease (-15,500 hours, or -3.3%) in VHT for all facility types measured.	5
Vehicle Miles of Travel (VMT)	Measures the total length of trips by motorized vehicles (automobiles, buses, trucks) based on travel demand model output.	2035 Baseline results in a noticeable increase in VMT over the Year 2007 conditions for all facility types measured (2,066,300, or 15.7%).	Results in slight increase (147,100 miles, or 1%) in VMT for all facility types measured.	3

Key: 1 =Decrease in performance compared to baseline, 3 =Similar to baseline, 5 =Improvement over baseline

Performance Measure	Description	2035 Baseline Performance	ORTP 2035 Performance	ORTP 2035 Performance in Relation to Baseline
Natural Environment Overarching Goal: Develop, operate, and maintain Oahu's transportation system in a manner that sustains environmental quality.				
Natural Resource/ Environment Effects	Assesses potential disruption or other impacts to natural areas such as animal habitats, open spaces, beaches, archeological sites, and forested areas/vegetation based on the mapped location of sensitive areas and potential footprint changes associated with proposed projects.	Due to the scale of the HHCTC Project, there will be some natural resource and environmental impacts. This project, like the others contained in the Baseline, has been evaluated and appropriate mitigation measures identified to be implemented as necessary.	Due to the large number of projects in the ORTP 2035, there is the potential for natural resource and environmental impacts. Individual projects will be evaluated and appropriate mitigation measures will be implemented as necessary.	1
Reliance on Renewable and Sustainable Energy Sources	Assesses the degree to which candidate actions promote the use of renewable and sustainable energy sources for transportation (over non-renewable sources).	Contains two bicycle projects and construction of the HHCTC Project.	Contains a greater amount of new and improved bicycle facilities and numerous improvements to TheBus transit system.	5
Susceptibility to Climate Change	Evaluates the effects of global climate change, including rising sea level, on transportation infrastructure.	Does not contain any particular projects or programs to address the transportation system's susceptibilities.	Contains the Shoreline Protection Program, Rockfall Protection Program, and other safety and operational improvements.	5
Human Environment and Quality of Life Overarching Goal: Develop, operate, and maintain Oahu's transportation system in a manner that supports community-wide values related to health, safety, and civil rights.				
Disruption during Construction	Assesses potential disruption to neighborhoods (access, mobility, noise, dust, etc.) during construction of candidate improvements based on degree of travel disruption, availability of suitable alternate routes, and proximity to sensitive neighborhoods.	Due to the scale of the HHCTC Project, there will be noticeable disruption during construction. However, this project, like the others contained in the Baseline, has been evaluated and appropriate mitigation measures identified and implemented as necessary.	Due to the large number of projects in the ORTP 2035, there is the potential for noticeable disruption during construction. Individual projects will be evaluated and appropriate mitigation measures will be implemented as necessary.	1

Key: 1 =Decrease in performance compared to baseline, 3 =Similar to baseline, 5 =Improvement over baseline

Performance Measure	Description	2035 Baseline Performance	ORTP 2035 Performance	ORTP 2035 Performance in Relation to Baseline
Energy Consumption	Assesses whether candidate actions reduce energy consumption based on VMT, presumed fuel efficiency assumptions, and mix of fuel/power sources.	Results in a daily total of 422,000 gallons of fuel consumed for over 15.2 million miles traveled on the roadways modeled.	Results in a daily total of 420,000 gallons of fuel consumed for over 15.4 million miles traveled on the roadways modeled. This represents a decrease of almost one-half of 1% in fuel consumption, despite an increase over just over 1% in VMT.	3
Air Quality	The State of Hawaii is in attainment for air quality. Assesses the level of GHG emissions as the result of proposed projects based on VMT, presumed fuel efficiency assumptions, and mix of fuel/power sources.	Results in a daily total of 5,000 tons of carbon dioxide emissions from over 15.2 million miles traveled on the roadways modeled.	Results in a daily total of 5,000 tons of carbon dioxide emissions from over 15.4 million miles traveled on the roadways modeled. Emissions remain steady despite an increase of just over 1% in VMT.	3
Title VI/Environmental Justice (T6/EJ) : - Accessibility	Compares share of people within T6/EJ and non-T6/EJ Traffic Analysis Zones (TAZs) who are within a 20-minute trip of selected work, shopping, education, and healthcare destinations based on travel demand model output.	For peak-period auto trips, 20-minute accessibility to destinations is very high and comparable for both the T6/EJ and non-T6/EJ populations, similar to Year 2007 conditions. In contrast, non-T6/EJ populations have better accessibility to colleges and employment centers than T6/EJ populations. Similar patterns can be seen for off-peak auto trips and transit trips during both peak and off-peak periods.	For AM peak period auto trips, 20-minute accessibility to destinations is very high and comparable for both the T6/EJ and non-T6/EJ populations, with results generally improved (i.e., more T6/EJ and non-T6/EJ TAZs within 20 minutes of destinations) compared with 2035 Baseline conditions. Non-T6/EJ populations continue to have better accessibility to colleges and employment centers than T6/EJ populations under the ORTP 2035. Similar patterns can be seen for transit trips during the AM peak period.	3

Key: 1 =Decrease in performance compared to baseline, 3 =Similar to baseline, 5 =Improvement over baseline

Performance Measure	Description	2035 Baseline Performance	ORTP 2035 Performance	ORTP 2035 Performance in Relation to Baseline
Title VI/Environmental Justice (T6/EJ) : - Equity	Compares transportation funding allocations for T6/EJ and non-T6/EJ areas needs based on available cost information.	This measure does not require a baseline performance analysis.*	Census block groups designated as T6/EJ would, on average, receive about 40 percent more investment dollars than non-T6/EJ designated block groups in the ORTP 2035. Also, while T6/EJ block groups combined would receive fewer dollars overall than non-T6/EJ block groups (because there are a lot fewer T6/EJ blocks), the average per capita investment would be slightly higher.	5
Title VI/Environmental Justice (T6/EJ) : - Mobility	Compares travel times for work trips from T6/EJ and non-T6/EJ TAZs based on travel demand model output.	The analysis demonstrated that the difference in average auto travel time to employment centers between T6/EJ TAZs and non-T6/EJ TAZs is forecasted to increase from 15 minutes in Year 2007 to 19 minutes for 2035 Baseline conditions. Similarly, the difference in average transit travel times to employment centers would increase from 21 minutes in Year 2007 to 26 minutes in 2035.	The difference in average auto travel time to employment centers between T6/EJ TAZs and non-T6/EJ TAZs is anticipated to decrease from 19 minutes to 11 minutes with implementation of the ORTP 2035 compared to the 2035 Baseline. Similarly, the difference in average transit travel times between T6/EJ TAZs and non-T6/EJ TAZs to employment centers would decrease from 26 minutes to 18 minutes.	5
Title VI/Environmental Justice (T6/EJ) : - Public Involvement and Outreach	Assesses concerns and issues of T6/EJ populations regarding transportation system performance and plan project selection based on feedback from focus groups, telephone surveys, and other public outreach initiatives. Assesses the degree to which outreach was done to T6/EJ populations.	This measure does not require a baseline performance analysis.*	In preparing the ORTP 2035, focus groups and telephone surveys specifically targeted both members of T6/EJ population groups as well as interviews of service providers that deliver services to the T6/EJ group.	5

Key: 1 =Decrease in performance compared to baseline, 3 =Similar to baseline, 5 =Improvement over baseline

Performance Measure	Description	2035 Baseline Performance	ORTP 2035 Performance	ORTP 2035 Performance in Relation to Baseline
Land Use and Transportation Integration Overarching Goal: Develop, operate, and maintain Oahu's transportation system in a manner that integrates effective land use and transportation with established sources of funding in a fair and equitable manner.				
Land Use Plans	Assesses whether the candidate improvements serve planned growth areas based on forecast population and employment growth.	Construction of the HHCTC Project will serve the western side of the island, where most of the future growth is projected.	The programs and projects contained in the ORTP 2035 will serve and support the island's communities as identified in their individual Sustainable Communities Plans or Development Plans, as appropriate.	5
Built Environment Effects	Assesses potential displacements of people and/or activities and structures to developed areas.	Due to the scale of the HHCTC Project, there will be some displacements of people and/or activities and structures. This project, like the others contained in the Baseline, has been evaluated and appropriate mitigation measures identified and implemented as necessary.	Due to the large number of projects in the ORTP 2035, there is the potential for displacements of people and/or activities and structures. Individual projects will be evaluated and appropriate mitigation measures will be implemented as necessary.	1
Compact, Mixed-Use Growth	Assesses the degree to which candidate actions would encourage land development that supports more efficient use of transportation services as a result of concentrated growth patterns, mix of uses, and/or development around public transportation facilities.	Contains the HHCTC Project, which will encourage transit-oriented development and other forms of compact, mixed-use growth.	Contains substantial investment in the transit system, and bicycle and pedestrian projects, all of which encourage compact, mixed-use growth.	5

Key: 1 =Decrease in performance compared to baseline, 3 =Similar to baseline, 5 =Improvement over baseline

* For these two T6/EJ measures, although there was no Baseline performance to compare the ORTP 2035 performance to, it can be reasonably assumed that the investment made by the ORTP 2035 will result in an overall benefit to T6/EJ communities and populations. Also, it is reasonable to assume that the public outreach and coordination activities performed had a positive result in allowing their concerns to be voiced and addressed.

City and County of Honolulu Department of Planning and Permitting. 2004. *Primary Urban Center Development Plan*.

City and County of Honolulu Department of Planning and Permitting. 2009. *Socio-economic data tables*.

City and County of Honolulu, Department of Transportation Services. 2009. *Draft Oahu Bike Plan*.

City and County of Honolulu, Department of Transportation Services, Rapid Transit Division, Honolulu High Capacity Transit Corridor Project. 2009. *Final Model Development, Calibration, and Validation Report*.

City and County of Honolulu, Department of Transportation Services, Rapid Transit Division, Honolulu High Capacity Transit Corridor Project. 2010. *Final Environmental Impact Statement/Section 4(f) Evaluation*.

Oahu Metropolitan Planning Organization (OahuMPO). 2007. *Oahu Regional Transportation Plan 2030 with Amendment #1*.

State of Hawaii, Department of Transportation. 2003. *Bike Plan Hawaii*.

State of Hawaii, Department of Transportation. 2010. *Statewide Transportation Improvement Program (STIP) – Fiscal Years 2011-2014 with Revisions*.

Oahu Regional Transportation Plan 2035 Project Documents:

Socioeconomic Data Reasonableness Report. Deliverable 7.1.1.

ORTP Scenarios Evaluation Methodology Technical Memorandum. Deliverable 9.1.2.

Appendix A: Area Type Definitions

Table A-1. Area-Type Definitions Based on Population and Employment Densities

Employment Category (Employees per Square Mile)		1	2	3	4	5	6	7	8
		≤12	≤93	≤397	≤1,615	≤6,202	≤22,630	≤78,500	>78,500
Population Category (Population per Square Mile)									
1	0	8	8	7	6	4	4	2	1
2	≤192	8	8	6	6	4	4	2	1
3	≤1,623	7	7	7	6	4	4	2	1
4	≤4,975	7	7	7	7	4	4	2	1
5	≤11,588	5	5	5	5	5	4	2	1
6	≤24,000	5	5	5	5	5	5	2	1
7	≤42,866	3	3	3	3	3	3	3	1
8	>42,866	3	3	3	3	3	3	3	1

Appendix B: Environmental and Community Considerations Matrix

Table B-1: ORTP 2035 Project List – Environmental and Community Considerations

Project No.	City/ State	Facility / Project Title	Project Description	Strategic Highway Safety Plan	Emergency and Disaster Preparedness	Development and Sustainable Communities Plans	Land Use Sensitivity / Natural Resources
1	S	Bike Plan Hawaii - Oahu	Implement Oahu elements of the State of Hawaii's <i>Bike Plan Hawaii</i> (2003).	Supports strategies for creating a safer environment for bicyclists.	n/a	Consistent with the goals of providing alternate, non-automotive modes of travel found in all Development and Sustainable Communities Plans.	n/a
2	C/S	Enhancement Projects	Implement enhancement projects, including, but not limited to, projects from the Transportation Enhancement Program for Oahu.	The 12 activities eligible for Transportation Enhancement funding support multiple modes of surface transportation projects, including bicycle and pedestrian facilities and highway programs.	n/a	Consistent with the underlying goal of creating safe and enjoyable transportation opportunities for all residents and users within and between communities supported by all Development and Sustainable Communities Plans.	n/a
3	C	Human Services Transportation Coordination Program	Provide a range of transportation services targeted to disadvantaged populations under the Human Services Transportation Coordination Program.	Supports increasing public transit options and accessibility for users of all abilities, ages, incomes, and employment statuses, with the potential to decrease the number of vehicles on Oahu's roadways that could reduce the potential for accidents.	Could assist evacuation efforts for disadvantaged populations.	Consistent with the overarching goal of improving access to and ease of use of the public transit system for all users supported by all Development and Sustainable Communities Plans.	n/a
4	C/S	Intelligent Transportation Systems (ITS)	Implement ITS projects including, but not limited to, those identified in the Oahu Regional ITS Architecture.	Supports the development and implementation of technologies and systems that enable agencies to work together to collectively manage the entire regional transportation network, thereby improving data management systems.	ITS can be implemented to provide emergency vehicles with the right of way, allowing them to access their destination more quickly; and to provide real-time traveler information to assist in evacuation efforts.	Consistent in supporting the goals of providing adequate access to and within communities and various destinations (e.g., hospitals) by making the existing transportation system more efficient and effective in its ability to move people and goods supported by all Development and Sustainable Communities Plans.	n/a
5	C	Joint Traffic Management Center	Construct a transportation management center behind the Alapai Transit Center that will combine transportation management with City, State, and emergency response agencies.	Supports information sharing between agencies, thereby improving data and safety management systems.	Co-locates all emergency response agencies at one location, allowing for more efficient and integrated response.	Consistent in supporting the goals of providing adequate access to and within communities and various destinations (e.g., hospitals) by making the existing transportation system more efficient and effective in its ability to move people and goods supported by all Development and Sustainable Communities Plans.	Planned in an already urbanized environment, near existing transportation uses. Near Dole Community Park and Thomas Square; State Capitol. Flood zone X.
6	C	<i>Oahu Bike Plan</i>	Implement City and County Bike Projects.	Supports strategies for creating a safer environment for bicyclists.	n/a	Consistent with the goals of providing alternate, non-automotive modes of travel found in all Development and Sustainable Communities Plans.	n/a
7	S	Transportation Demand Management (TDM) Program	Develop an aggressive TDM program that could include, but is not limited to: 1. Free real-time online carpool matching, 2. Outreach promotion and marketing of alternative transportation, 3. Emergency ride home program, 4. Major special events, 5. Employer based commuter programs, 6. Emerging and innovative strategies (i.e., car sharing).	Supports strategies to reduce the use of single-occupancy vehicles, with the potential to decrease the number of vehicles on Oahu's roadways that could reduce the potential for accidents.	n/a	Consistent with the goals of decreasing reliance on private passenger and single-occupant vehicle travel found in all Development and Sustainable Communities Plans.	n/a
8	S	Vanpool Program	Continue implementation and expansion of the State's Vanpool Hawaii program	Supports strategies to reduce the use of single-occupancy vehicles, with the potential to decrease the number of vehicles on Oahu's roadways that could reduce the potential for accidents.	n/a	Consistent with the goals of decreasing reliance on private passenger and single-occupant vehicle travel found in all Development and Sustainable Communities Plans.	n/a
9	S	Highway Safety Improvement Program	Comprehensive program to fund safety improvements to reduce collisions and damage to property. Strategies may include installation of left turn lanes, roadway widenings, traffic signal modifications, installation of rumble strips and crash attenuators, installation of guardrails and bridge railings and others.	Addresses multiple strategies for increasing safety for all roadway users.	Projects that help reduce congestion, such as installation of left turn lanes and roadway widening, allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the overarching goals of providing a safe transportation system for all users found in all Development and Sustainable Communities Plans.	Planned to occur along existing roadways.

Project No.	City/ State	Facility / Project Title	Project Description	Strategic Highway Safety Plan	Emergency and Disaster Preparedness	Development and Sustainable Communities Plans	Land Use Sensitivity / Natural Resources
10	S	Kamehameha Highway, Safety Improvements, Haleiwa to Kahaluu	Construct safety improvements along Kamehameha Highway, from Haleiwa to Kahaluu. Safety improvements include turn lanes, guardrails, signage, crosswalks, etc. to improve safety. Widening of Kamehameha Highway will only be in areas where needed for storage/turn lanes safety improvements.	Implements construction of various safety improvements, thereby supporting building safer roadways by design.	Projects that help reduce congestion, such as installation of turning lanes and roadway widening, allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goals of increasing safety while keeping the right-of-way of Kamehameha Highway to a minimum (i.e., not adding multiple lanes) while still allowing for focused improvements where they are necessary and maintaining the rural characters of the communities found in the North Shore, Koolauloa, and Koolaupoko Sustainable Communities Plans.	Planned to occur along an existing highly-utilized highway. Runs through/along Laniakea and Chun's Reef Beach Support Parks; Haleiwa, Kawailoa, Leftovers, Uppers, Waimea Bay, Pupukea, Sunset, Waialea, Kawela Bay, Laie, Kokololio, Hauula, Punaluu, Makaua, Swanzy, and Kaaawa Beach Parks. Runs through/along Kahuku District Park, Malaekahana State Recreation Area, Sacred Falls State Park, Kahana Valley State Park, Kualoa Regional Park, and Kahaluu Regional Park. Crosses 3 waterbodies (2@unnamed, Kaaawa Marsh). 48 water crossings = 16 perennial (Loko Ea, Kawela, Malaekahana, Kahawainui, Waialele, Koloa, Kaluanui, 2@Kahana, Kaaawa, Hakipuu, 2@Waikane, Waiahole, Kaalaea, Haiamoa), 24 non-perennial (Laniakea, Kawailoa, Kaalaea, Kalahopele, Kaunala Gulch, UNNAMED, Waialele Gulch, Pahipahialua Gulch, Hoolapa Gulch, 2@Kii, Kaleokahipa Gulch, Laniloa, Aakakii Gulch, Kokololio Gulch, Hauula, Kapaka, Papaakoko, Halehaa, Kapano, Punaluu<ditch>, Maipuna, Keaniani, Puupiei), 8 intermittent (Waimea, Kalunawaikaala, Pakulena, Paumalu Gulch, Oio Gulch, Kaipapau, Maakua, Makaua). Runs along/through Waiahole/Waikane Nature Preserve. Flood zones D (undetermined); A, AE, AEF, VE, XS, and X.
11	S	Kamehameha Highway, Safety & Operational Improvements, Kaalaea Stream to Hygienic Store	Construct safety and operational improvements along Kamehameha Highway, between Kaalaea Stream and Hygienic Store. Safety and operational improvements include passing and turning lanes, modification of signals, and installation of signs, flashers, and other warning devices. This project also includes replacement of Kaalaea Stream Bridge and Haiamoa Stream Bridge with structures that meet current design standards.	Implements construction of various safety improvements, thereby supporting building safer roadways by design.	Projects that help reduce congestion, such as installation of turning lanes and roadway widening, allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goals of increasing safety while keeping the right-of-way of Kamehameha Highway to a minimum (i.e., not adding multiple lanes) while still allowing for focused improvements where they are necessary and maintaining the rural characters of the communities found in the Koolaupoko Sustainable Communities Plan.	Planned to occur along an existing highly-utilized highway. Runs along Kahaluu Regional Park. 2 water crossings = perennial (Haiamoa, Kahaluu). Flood zones A, AE, AEF, and XS.
12	S	Kalaniana'ole Highway, Safety & Operational Improvements, Olomana Golf Course to Waimanalo Beach Park	Construct safety and operational improvements along Kalaniana'ole Highway between the Olomana Golf Course and Waimanalo Beach Park. Specific safety and operational improvements include construction of turning lanes, sidewalks, wheelchair ramps, bike paths or bike lanes, traffic signal upgrades, utility relocation, and drainage improvements.	Implements construction of various safety improvements, thereby supporting building safer roadways by design.	Projects that help reduce congestion, such as installation of turning lanes and roadway widening, allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goals of increasing safety while keeping the right-of-way of Kalaniana'ole Highway to a minimum (i.e., not adding multiple lanes) while still allowing for focused improvements where they are necessary and maintaining the rural characters of the communities found in the Koolaupoko Sustainable Communities Plan.	Planned to occur along an existing highly-utilized highway. Runs along Waimanalo Bay Beach Park. 3 water crossings = intermittent (2@Waimanalo, Kahawai). Flood zones AE, AEF, AO XS, and X.
13	S	Rockfall Protection, Various Locations	Install rockfall protection or mitigation measures along various state highways at various locations.	Implements measures to increase the safety of state highways on Oahu.	Assists in keeping roadways safe and accessible.	Consistent with the goals of creating and maintaining a safe transportation system for all users found in all Development and Sustainable Communities Plans.	n/a
14	S	Shoreline protection program	Protect shoreline along Kamehameha Highway and other locations.	Implements measures to increase the safety of state highways on Oahu.	Assists in keeping roadways safe and accessible.	Consistent with the goals of creating and maintaining a safe transportation system for all users found in all Development and Sustainable Communities Plans.	n/a
15	S	Interstate Route H-1, New Interchange, Kapolei Interchange	Construct new Interstate Route H-1 Kapolei Interchange for Kapolei between the Palailai Interchange and Makakilo Interchange. Project to be constructed in multiple phases.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly. Also, projects that provide full standard shoulders improve the ability for general traffic to move out of the way of emergency response vehicles.	Consistent with the goal of creating a transportation system with adequate capacity and access to support Ewa's role as the site for the Secondary Urban Center and a major growth area for new residential and employment development found in the Ewa Development Plan.	Planned to occur in the Ewa Development Area, in support of the Secondary Urban Center. Flood zone D (undetermined).
16	S	Hanua Street Extension, Farrington Highway to Malakole Street; Interstate Route H-1, New On- & Off-Ramps, Palailai Interchange	Hanua Street: • Extend Hanua Street from Malakole Street to Farrington Highway. This new four-lane roadway will provide access to Kalaeloa Harbor. Interstate Route H-1, Palailai Interchange: • Construct new on- and off-ramps at Interstate Route H-1 Palailai Interchange to Hanua Street extension.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion and provide network redundancy allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goal of creating a transportation system with adequate capacity and access to support Ewa's role as the site for the Secondary Urban Center and a major growth area for new residential and employment development found in the Ewa Development Plan.	Planned to occur in the Ewa Development Area, in support of the Secondary Urban Center. Within 20' of water feature at north end termini (interchange). Flood zone D (undetermined).

Project No.	City/ State	Facility / Project Title	Project Description	Strategic Highway Safety Plan	Emergency and Disaster Preparedness	Development and Sustainable Communities Plans	Land Use Sensitivity / Natural Resources
17	C	Kalaeloa Boulevard, Reconstruction and Widening; Lauwiliwili Street to Olai Street	Improve and reconstruct Kalaeloa Boulevard between Lauwiliwili Street and Olai Street.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goal of creating a transportation system with adequate capacity and access to support Ewa's role as the site for the Secondary Urban Center and a major growth area for new residential and employment development found in the Ewa Development Plan.	Planned to occur in the Ewa Development Area, in support of the Secondary Urban Center. Flood zone D (undetermined).
18	C	Kapolei Parkway, Extension & Widening, Aliinui Drive to Kalaeloa Boulevard	Extend the existing four-lane Kapolei Parkway, from Aliinui Drive to Hanua Street. This project includes widening of Kapolei Parkway from four to six lanes from Hanua Street to Kalaeloa Boulevard.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goal of creating a transportation system with adequate capacity and access to support Ewa's role as the site for the Secondary Urban Center and a major growth area for new residential and employment development found in the Ewa Development Plan.	Planned to occur in the Ewa Development Area, in support of the Secondary Urban Center. 1 water crossing = non-perennial (Barbers Point). Flood zone D (undetermined).
19	C	Kapolei Parkway, Extension, Kamokila Boulevard to Kamaaha Avenue	Complete the extension of the existing four-lane Kapolei Parkway.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goal of creating a transportation system with adequate capacity and access to support Ewa's role as the site for the Secondary Urban Center and a major growth area for new residential and employment development found in the Ewa Development Plan.	Planned to occur in the Ewa Development Area, in support of the Secondary Urban Center. Flood zone D (undetermined).
20	C	Farrington Highway, Widening, Golf Course Road to west of Fort Weaver Road	Widen Farrington Highway from two to four lanes, from Golf Course Road to just west of Fort Weaver Road.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goal of creating a transportation system with adequate capacity and access to support Ewa's role as the site for the Secondary Urban Center and a major growth area for new residential and employment development found in the Ewa Development Plan.	Planned to occur in the Ewa Development Area, in support of the Secondary Urban Center. Within 100' of West Loch Golf Course at eastern termini. 7 water crossings = 1 intermittent (Honouliuli), 6 non-perennial (2@Kaloi Gulch, Hunehune Gulch, 3@Makakilo Gulch). 1 water feature within 100'. Flood zones D (undetermined); A, AE, AEF and X associated with Honouliuli.
21	S	Fort Barrette Road, Widening, Farrington Highway to Barber's Point Gate	Widen Fort Barrette Road from two to four lanes from Farrington Highway to Barber's Point Gate.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goal of creating a transportation system with adequate capacity and access to support Ewa's role as the site for the Secondary Urban Center and a major growth area for new residential and employment development found in the Ewa Development Plan.	Planned to occur in the Ewa Development Area, in support of the Secondary Urban Center. Within 100' of Kapolei Regional Park. Flood zone D (undetermined).
22	S	Kualakai Parkway, Widening & Extension, Interstate Route H-1 to Franklin D Roosevelt Avenue	Widen and extend Kualakai Parkway as follows: • From three to six lanes from Kapolei Parkway to Interstate Route H-1 • Extend from Kapolei Parkway to Franklin D Roosevelt Avenue (six lanes)	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goal of creating a transportation system with adequate capacity and access to support Ewa's role as the site for the Secondary Urban Center and a major growth area for new residential and employment development found in the Ewa Development Plan.	Planned to occur in the Ewa Development Area, in support of the Secondary Urban Center. Within 100' of Ewa Villages Golf Course. Flood zones D (undetermined) and X.
23	DHHL	Keoneula Boulevard, Extension, Kapolei Parkway to Franklin D. Roosevelt Avenue	Extend Keoneula Boulevard from Kapolei Parkway to Franklin D. Roosevelt Avenue.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goal of creating a transportation system with adequate capacity and access to support Ewa's role as the site for the Secondary Urban Center and a major growth area for new residential and employment development found in the Ewa Development Plan.	Planned to occur in the Ewa Development Area, in support of the Secondary Urban Center. 1 water crossing = non-perennial(Kaloi Gulch). Extends roughly 4,140' into a high-concentration area of threatened and endangered plant species, almost bisects it. Flood zone D (undetermined).
24	S	Interstate Route H-1, Widening, Waipahu Off-Ramp	Widen the Interstate Route H-1 Waipahu Street off-ramp from one to two lanes, in the westbound direction, at the Waiawa Interchange.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly. Also, projects that provide full standard shoulders improve the ability for general traffic to move out of the way of emergency response vehicles.	Consistent with the goal of creating a transportation system with adequate capacity and access between various destinations and adjacent areas found in the Central Oahu Sustainable Communities Plan.	Planned along an existing highly-utilized highway, in support of providing adequate access without substantial new development. 1 water crossing = perennial (Waiawa). Flood zones AEF and X associated with Waiawa.
25	S	Interstate Route H-1, Widening, Waiawa Interchange	Widen the Interstate Route H-1 by one lane, in each direction, through the Waiawa Interchange. This project will begin in the vicinity of the Waiawa Interchange and end at the Paiwa Interchange.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly. Also, projects that provide full standard shoulders improve the ability for general traffic to move out of the way of emergency response vehicles.	Consistent with the goal of creating a transportation system with adequate capacity and access between various destinations and adjacent areas found in the Central Oahu Sustainable Communities Plan.	Planned along an existing highly-utilized highway, in support of providing adequate access without substantial new development. Flood zones D (undetermined) and X.
26	S	Kamehameha Highway, Widening, Lanikuhana Avenue to Ka Uka Boulevard	Widen Kamehameha Highway from a three-lane to a four-lane divided facility between Lanikuhana Avenue and Ka Uka Boulevard. This project includes shoulders for bicycles and disabled vehicles, bridge crossing replacement, bikeways, etc.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goal of creating a transportation system with adequate capacity and access between various destinations and adjacent areas found in the Central Oahu Sustainable Communities Plan.	Planned along an existing highly-utilized highway, in support of providing adequate access without substantial new development. Within 100' of Waiola Regional Park. 4 water crossings = 4 intermittent (4@Kipapa). Flood zone D (undetermined).

Project No.	City/ State	Facility / Project Title	Project Description	Strategic Highway Safety Plan	Emergency and Disaster Preparedness	Development and Sustainable Communities Plans	Land Use Sensitivity / Natural Resources
27	S	Interstate Route H-2, Widening, Waipio Interchange	Widen both on- and off-ramps on Interstate Route H-2, at the Waipio Interchange. This project includes the widening of the Ka Uka Boulevard overpass and intersection improvements to facilitate movement to and from the on- and off-ramps.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goal of creating a transportation system with adequate capacity and access between various destinations and adjacent areas found in the Central Oahu Sustainable Communities Plan.	Planned along an existing highly-utilized highway, in support of providing adequate access without substantial new development. Flood zone D (undetermined).
28	S	Interstate Route H-1, Contra Flow Lane extension (PM), Waiawa Interchange to Kunia Interchange and Keehi Interchange to Radford Drive	This project would construct an extension of the PM contra-flow lane on the Interstate Route H-1, in the westbound direction, on the west end from Waiawa Interchange to Kunia Interchange and on the east end from the Keehi Interchange to Radford Drive.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goal of creating a transportation system with adequate capacity and access between various destinations and adjacent areas found in the Central Oahu Sustainable Communities Plan.	Planned along an existing highly-utilized highway, in support of providing adequate access without substantial new development. 1 water crossing = perennial (Waiawa). Flood zones D (undetermined); AE, AEF, X, and XS associated with Waiawa.
29	S	Interstate Route H-1, Pearl City and Waimalu Viaduct Improvements, Phase 2	Replace, repair, and/or strengthen the Pearl City and Waimalu Viaduct concrete deck and other structural components, including guardrails. Project will be implemented in five phases.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly. Also, projects that provide full standard shoulders improve the ability for general traffic to move out of the way of emergency response vehicles.	Consistent with the overarching goal of maintaining adequate access and capacity to support an efficient transportation system appropriate for all users to access the island's most developed region supported by the Primary Urban Center Development Plan.	Planned along an existing highly-utilized highway in support of the ongoing development occurring in the Primary Urban Center. Within ~100' of Lehua Community, Waimalu Neighborhood, and Pearl Ridge Community Parks. 3 water crossings = 2 perennial (Waiawa, Waimalu); 1 non-perennial (Waiuu). Flood zone D (undetermined), AE, AEF, XS, and X.
30	S	Interstate Route H-1, Waiau Interchange to Halawa Interchange, Widening, Eastbound	Widen the H-1 Freeway to six lanes from the Waiau Interchange to the Halawa Interchange in the eastbound direction, and restore the current freeway lane width and shoulder standards. Project may be phased due to high cost.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly. Also, projects that provide full standard shoulders improve the ability for general traffic to move out of the way of emergency response vehicles.	Consistent with the overarching goal of maintaining adequate access and capacity to support an efficient transportation system appropriate for all users to access the island's most developed region supported by the Primary Urban Center Development Plan.	Planned along an existing highly-utilized highway in support of the ongoing development occurring in the Primary Urban Center. Within ~100' of Waimalu Neighborhood, Pearl Ridge Community, and Aiea District Parks. 5 water crossings = 2 intermittent (Waimalu, Aiea); 2 perennial (Waimalu, Kaluaao); 1 non-perennial (Kaluaao). Flood zone D (undetermined); AEF and X associated with Aiea.
31	C	Salt Lake Boulevard Widening Project	Widen Salt Lake Boulevard from two to six lanes, between Maluna Street and Ala Liliko'i Street.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the overarching goal of maintaining adequate access and capacity to support an efficient transportation system appropriate for all users to access the island's most developed region supported by the Primary Urban Center Development Plan.	Planned along an existing highly-utilized roadway in support of the ongoing development occurring in the Primary Urban Center. Within 100' of Aliamanu Neighborhood Park. Near "Airport Tarmac" - Substation. Near Aliamanu Elementary and Intermediate. Flood zone D (undetermined).
32	S	Interstate Route H-1, Widening, Ola Lane to Vineyard Boulevard	Widen the Interstate Route H-1 by 1 lane, in the eastbound direction, from Ola Lane to Vineyard Boulevard, as identified below: • From two to three lanes from Ola Lane/Middle Street to Likelike Highway off-ramp • From three to four lanes from Likelike Highway off-ramp to Vineyard Boulevard This project also includes the widening of: • Gulick Avenue overpass to allow five lanes to pass under it • Kalihi Interchange overcrossings to allow four lanes to pass under it.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly. Also, projects that provide full standard shoulders improve the ability for general traffic to move out of the way of emergency response vehicles.	Consistent with the overarching goal of maintaining adequate access and capacity to support an efficient transportation system appropriate for all users to access the island's most developed region supported by the Primary Urban Center Development Plan.	Planned along an existing highly-utilized highway in support of the ongoing development occurring in the Primary Urban Center. Within 100' of Kalihi Waena Neighborhood Park. 1 water crossing - perennial (Kalihi). Flood zones AEF and X associated with Kalihi.
33	S	Interstate Route H-1, Operational Improvements, Lunalilo Street Off-Ramp and On-Ramp (Between Lunalilo Street on-ramp and Vineyard Boulevard off-ramp)	Improve operation and capacity on the westbound H-1 Freeway by modifying weaving movements between the Lunalilo Street on-ramp and Vineyard Boulevard off-ramp.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the overarching goal of maintaining adequate access and capacity to support an efficient transportation system appropriate for all users to access the island's most developed region supported by the Primary Urban Center Development Plan.	Planned along an existing highly-utilized highway in support of the ongoing development occurring in the Primary Urban Center. Within 100' of Dole Community Park. Flood zone X.
34	S	Interstate Route H-1, Operational Improvements, Ward Avenue On-Ramp to University Avenue Interchange	Improve traffic flow on the Interstate Route H-1, in the eastbound direction, from the Ward Avenue on-ramp to the University Avenue Interchange through operational improvements.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the overarching goal of maintaining adequate access and capacity to support an efficient transportation system appropriate for all users to access the island's most developed region supported by the Primary Urban Center Development Plan.	Planned along an existing highly-utilized highway in support of the ongoing development occurring in the Primary Urban Center. Flood zone X.
35	C	Makakilo Drive, Second Access, Makakilo Drive to Kualaka'i Parkway / Interstate Route H-1 Interchange	Extend Makakilo Drive (vicinity Pueonani Street) south to the Interstate Route H-1 Freeway Interchange as four-lane roadway, connecting Makakilo Drive to Kualaka'i Parkway.	New roadways would be designed to be safe, and second access roadways support the safety of the communities that rely on them for emergency evacuation.	Second Access projects provide redundancy in the transportation network, providing alternative access for evacuation and/or emergency responders.	Consistent with the underlying goal of creating a transportation system with adequate capacity and alternative routes that can accommodate all users as supported by the Ewa Development Plan.	Planned to occur in the Ewa Development Area, in support of the Secondary Urban Center. Within 100' of Makakilo Community Park. 5 water crossings = non-perennial (3@Makakilo Gulch, 2@Kaloi Gulch). Flood zone D (undetermined).

Project No.	City/ State	Facility / Project Title	Project Description	Strategic Highway Safety Plan	Emergency and Disaster Preparedness	Development and Sustainable Communities Plans	Land Use Sensitivity / Natural Resources
36	C	Honolulu High-Capacity Transit Corridor Project	Plan, design, and construct a fixed guideway system between East Kapolei and Ala Moana Center. This project includes intermodal connections with TheBus system to provide feeder services to fixed guideway stations.	Supports strategies to reduce the use of single-occupancy vehicles, with the potential to decrease the number of vehicles on Oahu's roadways that could reduce the potential for accidents.	n/a	Consistent with the goals of decreasing reliance on private passenger and single-occupant vehicle travel found in all Development and Sustainable Communities Plans. Consistent with the provisions for development of a transit corridor contained in the Central Oahu Sustainable Communities Plan and the Ewa and Primary Urban Center Development Plans.	Planned to link the Ewa Development Area with Central Oahu and the Primary Urban Center in support of linking the existing Urban Center with the Secondary Urban Center. See the <i>Honolulu High-Capacity Transit Corridor Project Final Environmental Impact Statement/Section 4(f) Evaluation</i> (RTD, 2010.)
37	C	TheBus Service, Expansion, Islandwide	Expand the bus service through increase of capacity of the existing system to accommodate population growth. Expanded service will be ADA-compliant. This includes: • Expansion of Services to and within Ewa, Kapolei, Central, and Windward Oahu • Expansion through increase of Express service to the North Shore, Waianae, and Windward Oahu • Restructure of service in urban Honolulu	Supports strategies to reduce the use of single-occupancy vehicles, with the potential to decrease the number of vehicles on Oahu's roadways that could reduce the potential for accidents.	TheBus is an essential element of Oahu's emergency evacuation strategy; expansion of carrying capacity will ensure more capability during such operations.	Consistent with the overarching goal of improving access to and ease of use of the public transit system for all users supported by all Development and Sustainable Communities Plans.	n/a
38	C	Transit Centers, Various Locations	Construct transit centers at various locations islandwide to support transit operations.	Supports strategies to reduce the use of single-occupancy vehicles, with the potential to decrease the number of vehicles on Oahu's roadways that could reduce the potential for accidents.	TheBus is an essential element of Oahu's emergency evacuation strategy; expansion of carrying capacity will ensure more capability during such action. Transit centers serve as key gathering places and points of transfer to facilitate operations.	Consistent with the overarching goal of improving access to and ease of use of the public transit system for all users supported by all Development and Sustainable Communities Plans.	n/a
39	C	City Operations and Maintenance (O&M): Roadways	Maintain and operate the City's existing and future roadway. Includes, but is not limited to, resurfacing, guardrail and shoulder improvements, lighting improvements, drainage improvements, signal and sign upgrades and replacement, etc.	Supports preservation and maintenance of the existing transportation system, thereby ensuring safe facilities.	Assists in keeping roadways safe and accessible.	Consistent with the basic underlying principle of maximizing the benefits of the existing transportation system and making the most efficient use of limited funds supported by all Development and Sustainable Communities Plans.	n/a
40	C	City Operations and Maintenance (O&M): Transit	Maintain and operate the City's existing and future transit, and paratransit operations and routine maintenance. Includes, but is not limited to, operation of the transit system (including bus, rail, and paratransit), plan, design and construct a third bus operating facility, etc.	Supports preservation and maintenance of the existing transportation system, thereby ensuring safe facilities.	Transit is an essential element of Oahu's emergency evacuation strategy; expansion of carrying capacity will ensure more capability during such operations.	Consistent with the basic underlying principle of maximizing the benefits of the existing transportation system and making the most efficient use of limited funds supported by all Development and Sustainable Communities Plans.	n/a
41	S	State Operations and Maintenance	Maintain and operate the State's existing and future highway operations and routine maintenance. Special Maintenance Program (SMP) Projects include, but are not limited to, pavement repair, preventative maintenance, resurfacing and rehabilitation, etc.	Supports preservation and maintenance of the existing transportation system, thereby ensuring safe facilities.	Assists in keeping roadways safe and accessible.	Consistent with the basic underlying principle of maximizing the benefits of the existing transportation system and making the most efficient use of limited funds supported by all Development and Sustainable Communities Plans.	n/a
42	S	System Preservation	Preserve the highway system through projects including, but not limited to, bridge replacement and seismic retrofit, guardrail and shoulder improvements, lighting improvements, drainage improvements, sign upgrades and replacement, traffic signal upgrade and retrofit, etc.	Supports preservation and maintenance of the existing transportation system, thereby ensuring safe facilities.	Assists in keeping roadways safe and accessible.	Consistent with the basic underlying principle of maximizing the benefits of the existing transportation system and making the most efficient use of limited funds supported by all Development and Sustainable Communities Plans.	n/a
43	S	Bike Plan Hawaii - Oahu	Implement Oahu elements of the State of Hawaii's Bike Plan Hawaii.	Supports strategies for creating a safer environment for bicyclists.	n/a	Consistent with the goals of providing alternate, non-automotive modes of travel found in all Development and Sustainable Communities Plans.	n/a
44	S	Enhancement Projects	Implement enhancement projects, including, but not limited to, projects from the Transportation Enhancement Program for Oahu.	The 12 activities eligible for Transportation Enhancement funding support multiple modes of surface transportation projects, including bicycle and pedestrian facilities and highway programs.	n/a	Consistent with the underlying goal of creating safe and enjoyable transportation opportunities for all residents and users within and between communities supported by all Development and Sustainable Communities Plans.	n/a

Project No.	City/ State	Facility / Project Title	Project Description	Strategic Highway Safety Plan	Emergency and Disaster Preparedness	Development and Sustainable Communities Plans	Land Use Sensitivity / Natural Resources
45	C	Human Services Transportation Coordination Program	Provide a range of transportation services targeted to disadvantaged populations under the Human Services Transportation Coordination Program.	Supports increasing public transit options and accessibility for users of all abilities, ages, incomes, and employment statuses, with the potential to decrease the number of vehicles on Oahu's roadways that could reduce the potential for accidents.	Could assist evacuation efforts for disadvantaged populations in particular.	Consistent with the overarching goal of improving access to and ease of use of the public transit system for all users supported by all Development and Sustainable Communities Plans.	n/a
46	C/S	Intelligent Transportation Systems (ITS)	Implement ITS projects including, but not limited to, those identified in the Oahu Regional ITS Architecture.	Supports the development and implementation of technologies and systems that enable agencies to work together to collectively manage the entire regional transportation network, thereby improving data management systems.	ITS can be implemented to provide emergency vehicles with the right of way, allowing them to access their destination more quickly; and to provide real-time traveler information to assist in evacuation efforts.	Consistent in supporting the goals of providing adequate access to and within communities and various destinations (e.g., hospitals) by making the existing transportation system more efficient and effective in its ability to move people and goods supported by all Development and Sustainable Communities Plans.	n/a
47	C	Oahu Bike Plan	Implement City and County Bike Projects	Supports strategies for creating a safer environment for bicyclists.	n/a	Consistent with the goals of providing alternate, non-automotive modes of travel found in all Development and Sustainable Communities Plans.	n/a
48	S	Transportation Demand Management (TDM) Program	Develop an aggressive TDM program that could include, but is not limited to: 1. Free real-time online carpool matching, 2. Outreach promotion and marketing of alternative transportation, 3. Emergency ride home program, 4. Major special events, 5. Employer based commuter programs, 6. Emerging and innovative strategies (i.e., car sharing).	Supports strategies to reduce the use of single-occupancy vehicles, with the potential to decrease the number of vehicles on Oahu's roadways that could reduce the potential for accidents.	n/a	Consistent with the goals of decreasing reliance on private passenger and single-occupant vehicle travel found in all Development and Sustainable Communities Plans.	n/a
49	S	Vanpool Program	Continue implementation and expansion of the State's Vanpool Hawaii Program.	Supports strategies to reduce the use of single-occupancy vehicles, with the potential to decrease the number of vehicles on Oahu's roadways that could reduce the potential for accidents.	n/a	Consistent with the goals of decreasing reliance on private passenger and single-occupant vehicle travel found in all Development and Sustainable Communities Plans.	n/a
50	S	Farrington Highway, Safety Improvements, Makua Valley Road to Aliinui Drive	Construct safety improvements on Farrington Highway along the Waianae Coast, from Makua Valley Road (Kaena Point) to Aliinui Drive (Kahe Point). This project includes realignment around Makaha Beach Park, between Makau Street and Water Street.	Implements construction of various safety improvements, thereby supporting building safer roadways by design.	Assists in keeping roadways safe and accessible.	Consistent with the goal of making safety improvements to Farrington Highway explicitly stated in the Waianae Sustainable Communities Plan. Consistent with the overarching goals of providing a safe transportation system for all users found in the Ewa Development Plan.	Planned to occur along an existing highly-utilized highway. 1 waterbody crossing – unnamed. Runs along Kaena Point State, Keaau Beach, Makaha Beach, Mauna Lahilahi Beach, Waianae Regional, Pokai Bay Beach, Lualualei Beach, Maili Beach, Ulehawa Beach, Nanakuli Beach, Tracks Beach, Kahe Point, and Makaiwa Beach Parks. Near Mauna Lahilahi Botanical Gardens. XX water crossings = non-perennial (Kaiahi Gulch, Waikomo, Keaau, Eku, Piliokahe Gulch, Limaloa Gulch, Kahe, Waimanalo Gulch); intermittent (Makaha, Kaupuni, Nanakuli); perennial (Maililili, Ulehawa). Runs along plant critical habitat-various plants. Near Ka Waihona Charter School and Nanaikapono Elementary. Flood zones D (undetermined); VE, AE, AEF, and X.
51	S	Highway Safety Improvement Program	Comprehensive program to fund safety improvements to reduce collisions and damage to property. Strategies may include installation of left turn lanes, roadway widenings, traffic signal modifications, installation of rumble strips and crash attenuators, installation of guardrails and bridge railings and others.	Addresses multiple strategies for increasing safety for all roadway users.	Assists in keeping roadways safe and accessible.	Consistent with the overarching goals of providing a safe transportation system for all users found in all Development and Sustainable Communities Plans.	n/a
52	S	Rockfall Protection, Various Locations	Install rockfall protection or mitigation measures along various state highways at various locations.	Implements measures to increase the safety of state highways on Oahu.	Assists in keeping roadways safe and accessible.	Consistent with the goals of creating and maintaining a safe transportation system for all users found in all Development and Sustainable Communities Plans.	n/a
53	S	Shoreline protection program	Kamehameha Highway and other locations.	Implements measures to increase the safety of state highways on Oahu.	Assists in keeping roadways safe and accessible.	Consistent with the goals of creating and maintaining a safe transportation system for all users found in all Development and Sustainable Communities Plans.	n/a

Project No.	City/ State	Facility / Project Title	Project Description	Strategic Highway Safety Plan	Emergency and Disaster Preparedness	Development and Sustainable Communities Plans	Land Use Sensitivity / Natural Resources
54	S	Farrington Highway, Widening, Hakimo Road to Kalaeloa Boulevard	Widen Farrington Highway from four to six lanes, from Hakimo Road to Kalaeloa Boulevard, including intersection of Lualualei Naval Road.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Inconsistent with the discussed need for a Reliever Road that would roughly parallel Farrington Highway contained in the Waianae Sustainable Communities Plan, but consistent with its intent of providing additional capacity in the area. Consistent with the goal of creating a transportation system with adequate capacity and access to support Ewa's role as the site for the Secondary Urban Center and a major growth area for new residential and employment development found in the Ewa Development Plan.	Planned to occur along an existing highly-utilized highway. Within 100' of Ulehawa, Nanakuli, Tracks, Kahe Point, and Makaiwa Beach Parks, and Kamokila Community Park. 11 water crossings = 1 perennial (Ulehawa), 1 intermittent (Nanakuli), 9 non-perennial (Piliokahe Gulch, Limaloa Gulch, Kahe, Waimanalo Gulch, 2@Ko Olina, Makaiwa Gulch, Barbers Point, Awanui Gulch). Near Ka Waihona Charter School and Nanaikapono Elementary. Flood zones D (undetermined); VE, AE, AEF, and X.
55	C	Kamokila Boulevard	Extend as four-lane roadway between Roosevelt and Saratoga.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goal of creating a transportation system with adequate capacity and access to support Ewa's role as the site for the Secondary Urban Center and a major growth area for new residential and employment development found in the Ewa Development Plan.	Planned to occur in the Ewa Development Area, in support of the Secondary Urban Center. Flood zone D (undetermined).
56	C	Fort Barrette Road	Extend as four-lane roadway between Roosevelt and Saratoga.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goal of creating a transportation system with adequate capacity and access to support Ewa's role as the site for the Secondary Urban Center and a major growth area for new residential and employment development found in the Ewa Development Plan.	Planned to occur in the Ewa Development Area, in support of the Secondary Urban Center. Flood zone D (undetermined).
57	C	Kalaeloa East-West Spine Road, New Roadway, Kalaeloa Boulevard to Geiger Road	Construct a new four-lane east-west spine road within Kalaeloa by realigning and connecting portions of the existing Saratoga Avenue from Kalaeloa Boulevard in the west and to Geiger Road in the east.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goal of creating a transportation system with adequate capacity and access to support Ewa's role as the site for the Secondary Urban Center and a major growth area for new residential and employment development found in the Ewa Development Plan.	Planned to occur in the Ewa Development Area, in support of the Secondary Urban Center. 1 water feature crossing (feature is listed in waterbodies not streams - man-made?). Flood zone D (undetermined).
58	S	Makakilo Mauka Frontage Road, New Roadway, Kalaeloa Boulevard to Makakilo Drive	Construct a new two-lane Makakilo Mauka Frontage Road, mauka of Interstate Route H-1, from Kalaeloa Boulevard to Makakilo Drive.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goal of creating a transportation system with adequate capacity and access to support Ewa's role as the site for the Secondary Urban Center and a major growth area for new residential and employment development found in the Ewa Development Plan.	Planned to occur in the Ewa Development Area, in support of the Secondary Urban Center. Within 100' of water feature. Flood zone D (undetermined).
59	S	Farrington Highway, Widening, west of Fort Weaver Road to Waiawa Interchange	Widen Farrington Highway from Kunia to Waiawa by 1 lane in each direction, from west of Fort Weaver Road to Waiawa Interchange.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goal of creating a transportation system with adequate capacity and access between various destinations and adjacent areas found in the Central Oahu Sustainable Communities Plan.	Planned along an existing highly-utilized highway, in support of providing adequate access without substantial new development. Within 100' of West Loch Golf Course. 4 water crossings = 1 perennial (Waikale), 3 non-perennial (Hoaeae, Kapakahi, Ted Makalena Golf Course). Flood zones D (undetermined); AE, AEF, X, and XS associated with Waikale, Kapakahi, and Ted Makalena Golf Course.
60	S	Interstate Route H-2, New Interchange, Pineapple Road Overpass	Construct a new full-service freeway interchange on Interstate Route H-2, between Meheula Parkway and Ka Uka Boulevard, to accommodate future developments in Central Oahu. This project includes the widening of the existing Pineapple Road Overpass from two to four lanes; and addition of new on- and off-ramps to and from Interstate Route H-2 at Pineapple Road Overpass.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goal of creating a transportation system with adequate capacity and access between various destinations and adjacent areas found in the Central Oahu Sustainable Communities Plan.	Planned along an existing highly-utilized highway, in support of providing adequate access without substantial new development. 2 water crossings = perennial (Kipapa). Flood zone D (undetermined).
61	S	Interstate Route H-1, Widening, Waiawa Interchange to Halawa Interchange	Widen the Interstate Route H-1 by one lane in the eastbound direction, from the Waiawa Interchange to the Halawa Interchange.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly. Also, projects that provide full standard shoulders improve the ability for general traffic to move out of the way of emergency response vehicles.	Consistent with the overarching goal of maintaining adequate access and capacity to support an efficient transportation system appropriate for all users to access the island's most developed region supported by the Primary Urban Center Development Plan.	Planned along an existing highly-utilized highway in support of the ongoing development occurring in the Primary Urban Center. Within 100' of Lehua Community and Pearl Ridge Community Parks. 7 water crossings = 2 perennial (Waiawa, Kalauao), 2 non-perennial (Waiuu, Kalauao), 3 intermittent (2@Waimalu, Aiea). Near Pearl Ridge and Alvah A Scott Elementaries, and Aiea High. Flood zones D (undetermined); AE, AEF, X, and XS associated with Waiawa; AEF, X, and XS associated with Aiea.

Project No.	City/ State	Facility / Project Title	Project Description	Strategic Highway Safety Plan	Emergency and Disaster Preparedness	Development and Sustainable Communities Plans	Land Use Sensitivity / Natural Resources
62	S	Kahekili Highway, Widening, Kamehameha Highway to Haiku Road	Widen Kahekili Highway from two to four lanes, from Kamehameha Highway to Haiku Road. This project also includes the following improvements: <ul style="list-style-type: none"> • Contraflow in existing right-of-way between Hui Iwa Street and Haiku Road • Intersection improvements at Hui Iwa Street and Kamehameha Highway 	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goal of providing adequate capacity for peak-period commuting to and from work in the Primary Urban Center (as people access the Pali and Likelike Highways and Interstate Route H-3) discussed in the Koolauapoko Sustainable Communities Plan.	Planned along an existing highly-utilized highway, in support of providing adequate access without substantial new development. Within 100' of Ahuimanu Community Park. 3 water crossings = perennial (Ahuimanu, 2@Heeia). Near Ahuimanu Elementary. Flood zone D (undetermined).
63	C	City Rail Rehabilitation and Fleet Expansion	Provide for rehabilitation of track and expansion of rail fleet.	Supports preservation and maintenance of the transportation system, thereby ensuring safe facilities.	Transit is an essential element of Oahu's emergency evacuation strategy; expansion of carrying capacity will ensure more capability during such operations	Consistent with the basic underlying principle of maximizing the benefits of the existing transportation system and making the most efficient use of limited funds supported by all Development and Sustainable Communities Plans.	n/a
64	C	TheBus Service, Expansion, Islandwide	Expand the bus service through increase of capacity of the existing system to accommodate population growth. Expanded service will be ADA-compliant. This includes: <ul style="list-style-type: none"> • Expansion of Services to and within Ewa, Kapolei, Central, and Windward Oahu • Expansion through increase of Express service to the North Shore, Waianae, and Windward Oahu • Restructure of service in urban Honolulu Note: Project team recommends City explore opportunities to provide improved service for T6/EJ communities. 	Supports strategies to reduce the use of single-occupancy vehicles, with the potential to decrease the number of vehicles on Oahu's roadways that could reduce the potential for accidents.	TheBus is an essential element of Oahu's emergency evacuation strategy; expansion of carrying capacity will ensure more capability during such operations	Consistent with the overarching goal of improving access to and ease of use of the public transit system for all users supported by all Development and Sustainable Communities Plans.	n/a
65	C	Transit Centers, Various Locations	Construct transit centers at various locations islandwide to support transit operations.	Supports strategies to reduce the use of single-occupancy vehicles, with the potential to decrease the number of vehicles on Oahu's roadways that could reduce the potential for accidents.	TheBus is an essential element of Oahu's emergency evacuation strategy; expansion of carrying capacity will ensure more capability during such action. Transit centers serve as key gathering places and points of transfer to facilitate operations.	Consistent with the overarching goal of improving access to and ease of use of the public transit system for all users supported by all Development and Sustainable Communities Plans.	n/a
66	C	City Operations and Maintenance: Roadways	Maintain and operate the City's existing and future roadway. Includes, but is not limited to, resurfacing, guardrail and shoulder improvements, lighting improvements, drainage improvements, signal and sign upgrades and replacement, etc.	Supports preservation and maintenance of the existing transportation system, thereby ensuring safe facilities.	Assists in keeping roadways safe and accessible.	Consistent with the basic underlying principle of maximizing the benefits of the existing transportation system and making the most efficient use of limited funds supported by all Development and Sustainable Communities Plans.	n/a
67	C	City Operations and Maintenance: Transit	Maintain and operate the City's existing and future transit, and paratransit operations and routine maintenance. Includes, but is not limited to, operation of the transit system (including bus, rail, paratransit, and ferry), replacement of existing fleet, plan, design and construct a third bus operating facility, etc.	Supports preservation and maintenance of the existing transportation system, thereby ensuring safe facilities.	Transit is an essential element of Oahu's emergency evacuation strategy; expansion of carrying capacity will ensure more capability during such operations.	Consistent with the basic underlying principle of maximizing the benefits of the existing transportation system and making the most efficient use of limited funds supported by all Development and Sustainable Communities Plans.	n/a
68	S	State Operations and Maintenance	Maintain and operate the State's existing and future highway operations and routine maintenance. Special Maintenance Program (SMP) Projects include, but is not limited to, pavement repair, preventative maintenance, resurfacing and rehabilitation, etc.	Supports preservation and maintenance of the existing transportation system, thereby ensuring safe facilities.	Assists in keeping roadways safe and accessible.	Consistent with the basic underlying principle of maximizing the benefits of the existing transportation system and making the most efficient use of limited funds supported by all Development and Sustainable Communities Plans.	n/a
69	S	System Preservation	Preserve the highway system through projects including, but not limited to, bridge replacement and seismic retrofit, guardrail and shoulder improvements, lighting improvements, drainage improvements, sign upgrades and replacement, traffic signal upgrade and retrofit, etc.	Supports preservation and maintenance of the existing transportation system, thereby ensuring safe facilities.	Assists in keeping roadways safe and accessible.	Consistent with the basic underlying principle of maximizing the benefits of the existing transportation system and making the most efficient use of limited funds supported by all Development and Sustainable Communities Plans.	n/a

Project No.	City/ State	Facility / Project Title	Project Description	Strategic Highway Safety Plan	Emergency and Disaster Preparedness	Development and Sustainable Communities Plans	Land Use Sensitivity / Natural Resources
70	S	Interstate Route H-1, On- & Off-Ramp Modifications, Various Locations	Modify and/or close various on- and off-ramps on the Interstate Route H-1.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the basic underlying principle of maximizing the benefits of the existing transportation system and making the most efficient use of limited funds supported by all Development and Sustainable Communities Plans.	Planned to occur along an existing highly-utilized highway.
71	S	Kunia Road, Widening and Interchange Improvement, Wilikina Drive to Farrington Highway	Widen Kunia Road as follows: <ul style="list-style-type: none"> • From two to four lanes, from Wilikina Drive to Anonui Street. • From two to four lanes, Anonui Street to Kupuna Loop. • From four to six lanes, Kupuna Loop to Farrington Highway. • Add one lane eastbound loop on-ramp at Kunia Road & Interstate Route H-1. 	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the goal of creating a transportation system with adequate capacity and access between various destinations and adjacent areas found in the Central Oahu Sustainable Communities Plan.	Planned to occur along an existing highly-utilized highway, in support of providing adequate access without substantial new development.
72	S	Interstate Route H-1, Widening, Waiiau Interchange to Waiawa Interchange	Widen Interstate Route H-1 in the westbound direction by one lane from the Waiiau Interchange to the Waiawa Interchange.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly. Also, projects that provide full standard shoulders improve the ability for general traffic to move out of the way of emergency response vehicles.	Consistent with the overarching goal of maintaining adequate access and capacity to support an efficient transportation system appropriate for all users to access the island's most developed region supported by the Primary Urban Center Development Plan.	Planned to occur along an existing highly-utilized highway in support of the ongoing development occurring in the Primary Urban Center.
73	S	Interstate Route H-1, Widening, Vineyard Boulevard to Middle Street	Widen the Interstate Route H-1 by one lane in the westbound direction, from Vineyard Boulevard to Middle Street.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly. Also, projects that provide full standard shoulders improve the ability for general traffic to move out of the way of emergency response vehicles.	Consistent with the overarching goal of maintaining adequate access and capacity to support an efficient transportation system appropriate for all users to access the island's most developed region supported by the Primary Urban Center Development Plan.	Planned to occur along an existing highly-utilized highway in support of the ongoing development occurring in the Primary Urban Center.
74	S	Nimitz Highway, High Occupancy Vehicle (HOV) Flyover, Keehi Interchange to Pacific Street	Construct a new two-lane elevated and reversible HOV flyover above Nimitz Highway, from the Keehi Interchange to Pacific Street. This project includes the removal of the existing eastbound contraflow lane in the AM peak and restoration of all turning movements on the at-grade portion of Nimitz highway.	Implements congestion mitigation for Oahu's roadways, and thereby has the potential to decrease accidents.	Projects that help reduce congestion allow for better traffic flow thereby allowing emergency responders to access their destination more quickly.	Consistent with the overarching goal of maintaining adequate access and capacity to support an efficient transportation system appropriate for all users to access the island's most developed region supported by the Primary Urban Center Development Plan.	Planned to occur along an existing highly-utilized highway in support of the ongoing development occurring in the Primary Urban Center.
75	S	Waianae, Second Access, Farrington Highway to Kunia Road	Construct a new two-lane second access road to Waianae from Farrington Highway in the vicinity of Mailli, over the Waianae Mountain Range, to Kunia Road. Requires Kunia Road, Widening and Interchange Improvement, Wilikina Drive to Farrington Highway (#71) to ensure benefit; priority for new administration.	New roadways would be designed to be safe, and second access roadways support the safety of the communities that rely on them for emergency evacuation.	Second Access projects provide redundancy in the transportation network, providing alternative access for evacuation and/or emergency responders.	Consistent with the discussed need for an Emergency Road that could be used as an alternative route to Farrington Highway to access Waianae in the Waianae Sustainable Communities Plan. Consistent with the discussed need to provide improved access to and from adjacent areas in the Central Oahu Sustainable Communities Plan.	Would provide alternative route to highly-utilized highway in support of providing adequate access to nearby areas.
76	C	Fixed Guideway, West Kapolei to East Kapolei	Plan, design, and construct a fixed guideway system between West Kapolei to East Kapolei.	Supports strategies to reduce the use of single-occupancy vehicles, with the potential to decrease the number of vehicles on Oahu's roadways that could reduce the potential for accidents.	n/a	Consistent with the goals of decreasing reliance on private passenger and single-occupant vehicle travel found in the Ewa Development Plan.	Would further link the Ewa Development Area with Central Oahu and the Primary Urban Center in support of linking the existing Urban Center with the Secondary Urban Center.
77	C	Fixed Guideway, Ala Moana to UH Manoa and Waikiki	Plan, design, and construct a fixed guideway system between Ala Moana and UH Manoa and Waikiki.	Supports strategies to reduce the use of single-occupancy vehicles, with the potential to decrease the number of vehicles on Oahu's roadways that could reduce the potential for accidents.	n/a	Consistent with the goals of decreasing reliance on private passenger and single-occupant vehicle travel found in the Primary Urban Center Development Plan.	Would further link the Ewa Development Area with Central Oahu and the Primary Urban Center in support of linking the existing Urban Center with the Secondary Urban Center.