



Kamehameha Highway continued to operate at LOS "E" in the region, during the existing PM peak hour of traffic, with v/c ratios ranging from 0.25 in Punaluu and 0.36 in Kahuku to 0.47 in Waimea.

III. Future Traffic Conditions

A. Turtle Bay Resort

The 57-unit Ocean Villas is a resort condominium, which was being renovated at the time of the field investigation for the 2005 TIAR Update. The Ocean Villas has since been completed. The Ocean Villas were analyzed as a resort hotel. The existing Turtle Bay Hotel was analyzed at full occupancy. The trips generated by the Ocean Villas and the Turtle Bay Hotel, at full occupancy, were added to the background traffic to establish the projected peak hour traffic without the full build-out of the Turtle Bay Resort Master Plan.

B. Future Roadway Improvements

The Oahu Regional Transportation Plan 2030 (ORTP) includes the construction of "safety improvements along Kamehameha Highway, from Haleiwa to Kahaluu. Safety improvements include turn lanes, guardrails, signage, crosswalks, etc., to improve safety." The ORTP goes on to indicate that "widening of Kamehameha Highway will only be in areas where needed for storage/turn lanes and safety improvements." DOT continues to request reservation or dedication of rights-of-way for future widening of Kamehameha Highway. However, it has deferred further planning in response to community opposition to a four-lane highway.

DOT has suspended its plan to widen Kamehameha Highway to provide exclusive left-turn and right-turn lanes at Kuilima Drive in favor of low-cost safety improvements, such as signing and striping.

C. Marconi Road Agricultural Lots

Traffic assessment of a proposed agricultural subdivision on Marconi Road (TMK: 5-6-003: 010, 026, & 032) was prepared by Julian Ng, Incorporated, dated June 6, 2008. The Ng traffic study analyzed the traffic impacts of a 36-lot agricultural subdivision on Marconi Road. The Ng study included the findings of another Ng study, Traffic Analysis Report, Kahuku Mauka Agricultural Lots, Phases I & II, dated August 2007. The Kahuku Mauka Agricultural Lots would access Kamehameha Highway opposite Marconi Road, creating a four-legged intersection. The trip generation and traffic assignments from the Ng studies were incorporated into the future traffic analysis of the study area. The Marconi Road agricultural lots were assumed to reach full build out by the Year 2018.

D. Regional Traffic Forecasts

The Years 2012, 2014, and 2018 traffic conditions without the proposed project are developed to establish the baseline conditions from which to evaluate the traffic impacts



of the proposed Turtle Bay Resort Master Plan. For the purpose of traffic impact analysis, the Institute of Transportation Engineers (ITE) states that an area-wide transportation plan is “often used with large projects that will be developed over a long period of time” (Transportation Impact Analysis for Site Development, 2006). ITE goes on to recommend that the regional travel forecast can be more accurate than the straight-line growth projections, based upon historical trends, especially for large developments which occur over a long period of time.

The Oahu Regional Transportation Plan 2030 (ORTP), was prepared for the Oahu Metropolitan Planning Organization (OMPO) in April 2006, and amended in May 2007. The Year 2030 weekday traffic forecasts on the North Shore of Oahu were obtained from OMPO, through the assistance of the State Department of Transportation (DOT).

It should be noted that the ORTP forecasts included a total of 1,600 resort units at Turtle Bay Resort, i.e., about 800 additional resort units. Therefore, use of the ORTP forecast to establish future traffic conditions, without the development of the proposed Turtle Bay Resort Master Plan, is considered conservative, i.e., it over estimates the future traffic on the North Shore of Oahu without the proposed project.

The Years 2012, 2014, 2018 and 2028 traffic forecasts for this study were interpolated between the Year 2030 ORTP forecasts and the Base Year 2005 DOT data. OMPO has stated, “Travel forecasts are intended to provide estimates of general regional movements to compare various alternatives, rather than estimates for individual facilities. Proper checks should be made to ensure its application”. As such, in order to assess the reasonableness of the ORTP forecasts, they were compared with the historical trends in traffic on the North Shore of Oahu that were developed from the linear regression (straight-line) analyses of available DOT traffic data from 1972 through 2006.

Three locations on Kamehameha Highway were selected for the regional traffic assessment: Waimea River Bridge, Malaekahana Stream Bridge in Kahuku, and Punaluu Stream Bridge. The selection of study locations was based upon the highway stations that were analyzed in the original 1985 EIS-Traffic Study, available DOT historical data records on Kamehameha Highway, and the ORTP model network. The Waimea River and Malaekahana Stream represent the boundaries of the traffic analysis zones in the ORTP network. The ORTP network and traffic analysis zone maps are depicted in the Appendix. The ORTP weekday traffic was used as the basis of analysis. Table 3 compares the ORTP 2030 traffic forecasts with the DOT 2005 traffic data.

Location	DOT 2005 Weekday Traffic			ORTP 2030 Weekday Traffic		
	Eastbound	Westbound	Totals	Eastbound	Westbound	Totals
Waimea	8,293	8,273	16,566	6,500	6,090	12,640
Kahuku	5,959	6,155	12,112	7,350	6,680	14,030
Punaluu	5,145	5,032	10,117	7,590	7,160	14,750

The ORTP traffic forecast in Waimea indicated an average decline in weekday traffic of -1.0 percent per year. The ORTP forecast did not appear to be reasonable when compared with the historical trend in Waimea traffic of $+1.5$ percent per year. Taking the average between the historical trend and the ORTP forecast, an annual growth factor of $+0.25$ percent was used to estimate future traffic in the Waimea area.

The ORTP traffic forecast in Kahuku indicated an annual growth in weekday traffic of $+0.6$ percent. The average historical trend in the growth of weekday traffic in Kahuku was slightly higher at $+1.6$ percent per year. The ORTP forecast of $+0.6$ percent annual growth appeared reasonable and was accepted for use in estimating future traffic in the Kahuku to Turtle Bay Resort area.

The ORTP traffic forecast in Punaluu indicated an annual growth in weekday traffic of $+1.8$ percent, which is higher than the historical trend of $+1.3$ percent. Again, the ORTP forecast of $+1.8$ percent annual growth appeared reasonable and was used to estimate future traffic in the Punaluu area. Figure 5 depicts the graphs of DOT data, the historical trends in the growth in traffic and the interpolated ORTP forecasts between the Years 2005 and 2030.

E. Year 2012 Peak Hour Traffic Analysis Without Project

1. Year 2012 AM Peak Hour Traffic Without Project

During the Year 2012 AM peak hour of traffic without the proposed project, the Kamehameha Highway intersections within the study area are expected to operate at satisfactory Levels of Service. Figure 6 depicts the Year 2012 AM peak hour traffic without the proposed project.

Kamehameha Highway is expected to operate at LOS "E", with a v/c ratio of 0.32, in the Kahuku area, during the Year 2012 AM peak hour of traffic without the proposed project. In the Waimea area, Kamehameha Highway is expected to operate at LOS "E", with a v/c ratio of 0.29, during the Year 2012 AM peak hour of traffic without the proposed project. Kamehameha Highway is expected to operate at LOS "E", with a v/c ratio of 0.23, in the Punaluu area.

2. Year 2012 PM Peak Hour Traffic Without Project

Kuilima Drive is expected to operate at LOS "E" at Kamehameha Highway, during the Year 2012 PM peak hour of traffic without the proposed project. The north leg of Marconi Road is expected to operate at LOS "C" at Kamehameha Highway. The Year 2012 PM peak hour traffic without the proposed project and the results of the capacity analysis are depicted on Figure 7.

In Kahuku, Kamehameha Highway is expected to operate at LOS "E", with a v/c ratio of 0.39, during the Year 2012 PM peak hour of traffic without the proposed project. Kamehameha Highway is expected to operate at LOS "E", with a v/c ratio of 0.50, in the Waimea area. In the Punaluu area, Kamehameha Highway is expected to operate at LOS "E", with a v/c ratio of 0.30.

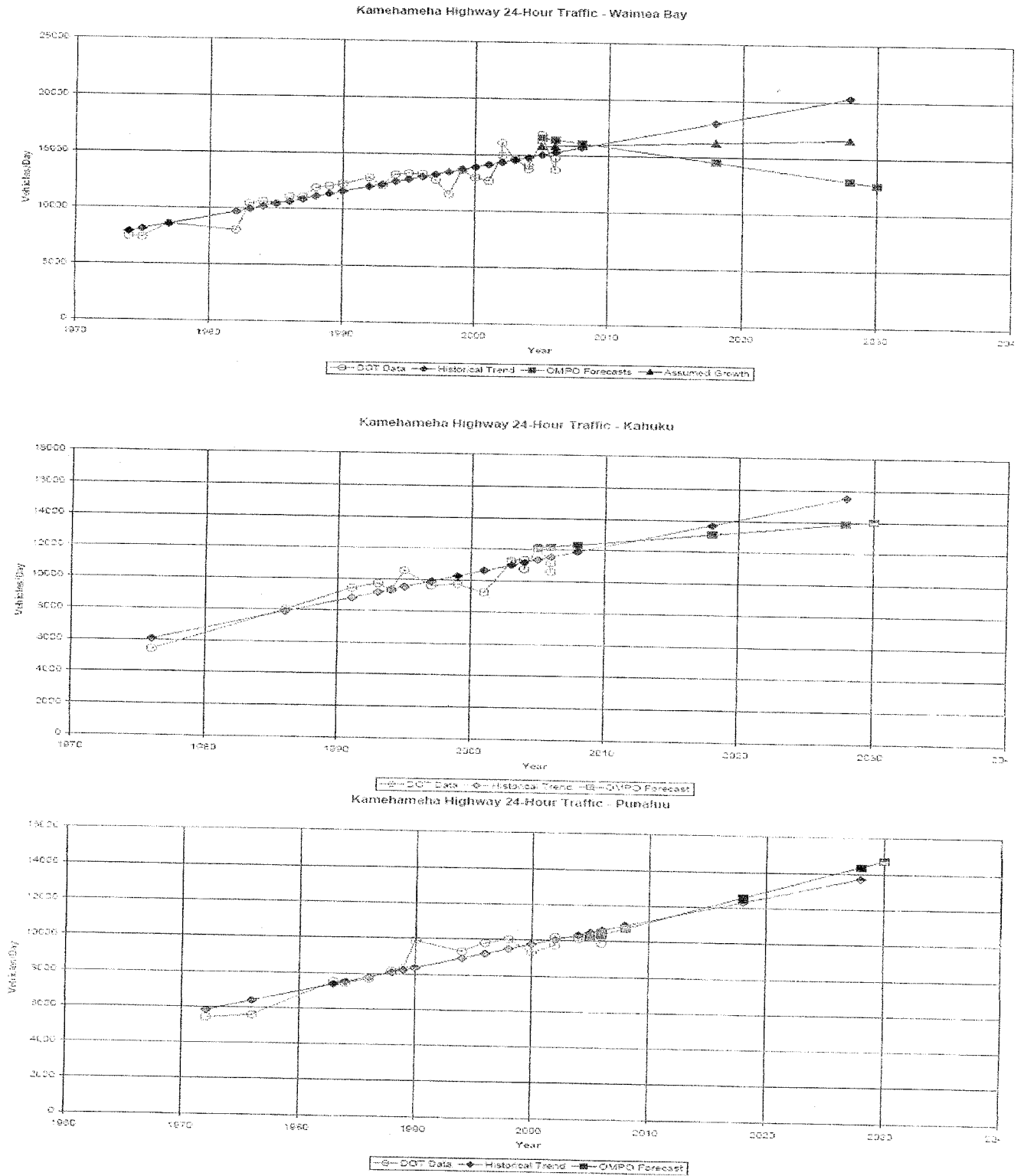


Figure 5. ORTP Traffic Forecast Comparisons