

---

## 7.7 TRAFFIC

### 7.7.1 Affected Environment

#### ***Regional Transportation System***

The ROI for traffic is the travel corridor between SBMR and KTA, which generally follows Kunia Road, Wilikina Drive, Kamananui Road, and Kamehameha Highway (Figure 7-11). While other resource sections consider the impacts of the use of Helemanō Trail and Drum Road separately, the entire route between SBMR and KTA is considered as one system for the purposes of this traffic analysis, and it is discussed in this section because the Drum Road segment of the route is so much longer than the Helemanō Trail segment.

KTA is on the windward side of O'ahu. Access to and egress from KTA is via Drum Road or Kamehameha Highway.

#### ***Local Transportation System***

##### *Kunia Road*

Kunia Road (SR 750) between SBMR (Trimble Road or Foote Gate) and Wilikina Drive is a four-lane divided state roadway. The posted speed limit is 35 mph (56 kmph), and there are signals at the intersections with Trimble Road and Wilikina Drive.

The ADT is approximately 25,000 vpd. The morning peak hourly traffic volumes are 1,000 vph northbound and 880 vph southbound; the afternoon peak-hour volumes are 1,210 vph northbound and 840 vph southbound (HDOT 2001).

##### *Wilikina Drive*

Wilikina Drive (SR 803) is a four-lane divided roadway between Kunia Road and Funston Gate and a two-lane undivided roadway from Funston Gate to Kamananui Road. The posted speed limit is 35 mph (56 kmph) from Kunia Road to McNair Gate and 25 mph (40 kmph) from McNair Gate to Kamananui Road. There are traffic signals at the intersections with Macomb Gate and Kamananui Road.

Between Kunia Road and McNair Gate, the ADT is approximately 27,400 vehicles per day. The northbound and southbound morning peak hour volumes are 1,080 vph and 1,040 vph, respectively. During the afternoon peak hour, the northbound and southbound volumes are 1,200 vph and 1,100 vph, respectively (HDOT 2001).

Between McNair Gate and Kamananui Road, the ADT is 16,000 vehicles per day. The northbound and southbound morning peak-hour volumes are 380 vph and 650 vph, respectively. During the afternoon peak hour, the northbound and southbound volumes are 950 vph and 550 vph, respectively (HDOT 2001).

**Figure 7-11**  
Peak Hour Volumes Worst Case Scenario Helemanō Trail

### Kamananui Road

Kamananui Road is a two-lane undivided road between Wilikina Drive and Kamehameha Highway. Traffic signals are being constructed at the intersection with Kamehameha Highway. The posted speed limit is 45 mph (72 kmph) between Wilikina Drive and Kaukonahua Road, and 35 mph (56 kmph) between Kaukonahua Road and Kamehameha Highway. The ADT is approximately 10,300 vpd (HDOT 2001). The northbound and southbound morning peak-hour volumes are 470 vph and 350 vph, respectively. During the afternoon peak hour, the northbound and southbound volumes are 430 vph and 420 vph, respectively (HDOT 2001).

### Kamehameha Highway

Kamehameha Highway (SR 99) connects Kamananui Road with the bypass around Haleʻiwa. Kamehameha Highway is a two-lane undivided highway, and the posted speed limit is 45 mph (72 kmph). The area adjacent to the Dole Pineapple Pavilion is 35 mph (56 kmph).

The ADT between Kamananui Road and Paʻalaʻa Uka Pūpūkea Road (the entrance to HMR) is approximately 18,400 vpd. The northbound and southbound morning peak-hour volumes are 660 vph and 580 vph, respectively. During the afternoon peak hour, the northbound and southbound volumes are 720 vph and 660 vph, respectively. The ADT north of Paʻalaʻa Uka Pūpūkea Road is approximately 14,300 vpd (HDOT 2001).

### Joseph P. Leong Highway

Joseph P. Leong Highway is also known as the Haleʻiwa Bypass, a two-lane, undivided highway with controlled access. The posted speed limit varies between 35 and 45 mph (56 and 72 kmph). The ADT along this roadway is approximately 10,000 vpd. The northbound and southbound morning peak-hour volumes are 350 vph and 280 vph, respectively. During the afternoon peak hour, the northbound and southbound volumes are 430 vph and 370 vph, respectively (HDOT 2001).

### Kamehameha Highway

Kamehameha Highway continues through Haleʻiwa and intersects the Joseph P. Leong Highway north of Haleʻiwa and then continues to Kahuku. The speed limit is generally 35 mph (56 kmph), except for a section west of the Turtle Bay Hilton that is posted for 45 mph (72 kmph).

Immediately north of Haleʻiwa, the ADT is approximately 15,000 vpd. In the vicinity of Kahuku, the ADT is approximately 7,000 vpd. The eastbound and westbound morning peak-hour volumes are 210 vph and 260 vph, respectively. During the afternoon peak hour, the northbound and southbound volumes are 290 vph and 270 vph, respectively (HDOT 2001).

## 7.7.2 Environmental Consequences

### **Summary of Impacts**

A summary of traffic impacts at KTA/KLOA is shown in Table 7-15. The Proposed Action and RLA Alternative would result in less than significant impacts on intersection operations, roadway segment operations, construction traffic, and parking. There would be no traffic impacts under No Action.

**Table 7-15**  
**Summary of Potential Traffic Impacts at KTA/KLOA**

Impact Issues	Proposed Action	Reduced Land	
		Acquisition	No Action
Intersection operations	⊙	⊙	○
Roadway segment operations	⊙	⊙	○
Construction traffic	⊙	⊙	○
Parking	○	○	○

In cases when there would be both beneficial and adverse impacts, both are shown on this table. Mitigation measures would only apply to adverse impacts.

#### LEGEND:

⊗ = Significant	+ = Beneficial impact
⊙ = Significant but mitigable to less than significant	N/A = Not applicable
⊙ = Less than significant	
○ = No impact	

### **Proposed Action (Preferred Alternative)**

Strykers would be used, up to multiple battalion level, for maneuver training at KTA and for off-road training. Troops would be transported to KTA from SBMR by Strykers or trucks up to one battalion level plus support trucks.

A perpetual easement of 27 acres (11 hectares) would be acquired for Helemanō Trail and an easement for Drum Road (also known as Kahuku Trail) upgrade to KTA. Helemanō Trail is shown Figure 2-7 in Chapter 2. The roads are proposed on private plantation roads. If the Proposed Action were implemented, Dole Food Co., Inc., would use other roads to access its agricultural lands. Helemanō Trail would be a one-lane, 15-foot wide (5-meter wide), 15-mile long (24-kilometer long) new road connecting SBMR to HMR. Drum Road would be realigned and repaved. The 10- to 24-foot wide (3- to 7-meter wide) road would be widened to 24 feet (7 meters) (two lanes) throughout, from HMR to KTA for 23 miles (37 kilometers). (Potential environmental impacts of the reconstruction of Drum Road will be addressed in a separate NEPA document, and are also considered in Chapter 9, Cumulative Impacts.) The reconstruction would accommodate larger vehicles and more traffic and would improve safety. The public would not use the proposed military use road, except for emergencies.

### Less than Significant Impacts

Intersection operations. The number of military vehicles using the proposed military vehicle trails would be minimal. The maximum number of vehicles per convoy would be 24, and convoys would be sequenced at 15- to 30-minute intervals. Therefore, the maximum hourly volume would be 96 vehicles per hour. Convoys would be scheduled during non-peak traffic hours, thus reducing potential impacts on peak-hour traffic conditions. No mitigation would be required.

Helemanō Trail would cross state highways at three locations: Wilikina Drive west of Kamananui Road, Kaukonahua Road west of Kamananui Road, and Kamehameha Highway north of Pa‘ala‘a Uka Pūpūkea Road.

Roadway segment operations. An LOS analysis was performed for the crossings using the following assumptions:

- The maximum number of vehicles was used for calculations (four convoys of 24 vehicles sequenced at 15-minute intervals);
- The convoys would stop for traffic along the state highways, so the intersection would be two-way and stop sign controlled; and
- Although convoys would be scheduled for non-peak hours, the assumption here is that convoys would approach the state highways during the peak hour of traffic; by assuming peak-hour conditions, a worst-case condition was analyzed.

The design criteria for a low-volume rural roadway through mountainous terrain were used to calculate the anticipated levels of service for traffic volumes; the results are shown in Table 7-16. The maximum traffic volume for an acceptable LOS C is 600 vehicles per hour. Because the Proposed Action would increase traffic volumes by 140 vehicles per hour and the existing roads are operating under capacity, impacts on roadway segment operations would be less than significant.

**Table 7-16**  
**Levels of Service for Traffic Volumes on Rural Roadways**

Maximum Hourly Traffic Volume <sup>1</sup>	Volume-to-Capacity Ratio	Level of Service
1,000	0.71	F
900	0.64	D
800	0.57	D
700	0.50	D
600	0.42	C
500	0.35	C

Source: AASHTO 1990

<sup>1</sup>The hourly volume is the sum of traffic in both directions.

The results of the LOS analysis are summarized in Table 7-17. According to the LOS analysis, the three state highway crossings would operate at LOS C under worst-case conditions. The delays would be experienced by convoy traffic because the convoys would yield to traffic along the state highways. Because the convoys would yield to through traffic, there would be no impact on the LOS on public highways, and no mitigation would be required.

**Table 7-17**  
**Level of Service Analysis for KTA**

Intersection	AM Peak Hour		PM Peak Hour	
	Delay (seconds per vehicle)	LOS	Delay (seconds per vehicle)	LOS
Helemanō Trail at Wilikina Drive	17.9	C	22.0	C
Helemanō Trail at Kaukonahua Road	10.4	C	10.7	C
Helemanō Trail at Kamehameha Highway	20.8	C	21.6	C

Source: Phillip Rowell and Associates 2002

Construction traffic. The construction associated with the Proposed Action would generate additional traffic from worker vehicles and trucks. Construction is expected to take approximately one year and may include several work crews working on different segments of the road. Up to 50 construction workers would be involved. The construction traffic would be temporary and less than significant.

To minimize traffic impacts to the surrounding community during construction, a construction traffic management program would be implemented. It would call for staggering work hours to reduce impacts from construction workers during peak hours, would identify truck routes to limit truck traffic to major streets, and would designate parking for construction workers. Because project traffic does not significantly affect operations at the intersections and street segments in the project vicinity and traffic is generally free flowing, the interim construction worker traffic impacts would not be significant. No mitigation would be required.

#### No Impact

Parking. No parking impacts would result, and no mitigation would be required.

#### **Reduced Land Acquisition Alternative**

The impacts associated with the RLA Alternative would be identical to those described for the Proposed Action.

#### **No Action Alternative**

#### No Impact

The existing baseline for traffic would continue under the No Action Alternative.

Intersection and roadway operations. Under the status quo of No Action, use of the facility and operations would remain the same as that under existing conditions. There would continue to be no impacts to roadway segment operations and intersection operations, and no mitigation would be required.

Construction traffic. Under the status quo of No Action, there would continue to be no traffic generated from construction activities, and no mitigation would be required.

Parking. Under the status quo of No Action, there would continue to be no parking impacts, and no mitigation would be required.