

**TRAVEL-TIME DEMONSTRATION PROJECT RESULTS  
FOR  
KAMEHAMEHA HIGHWAY (ROUTE 99)  
KA UKA BOULEVARD TO LANIKUHANA AVENUE**

The Hawaii Department of Transportation (HDOT) is proposing to convert a portion of northbound Kamehameha Highway (approximately 0.8 miles) between the Roosevelt Bridge and Lanikuhana Avenue from two lanes to one lane. This would allow HDOT to provide a wider median to reduce the risk of head-on collisions and wider shoulders on both sides which would provide space for emergencies as well as for non-motorized traffic.

**Purpose of Study:**

To assess the impacts of changing the northbound travel lanes on Kamehameha Highway from two lanes to one lane. The metrics used to determine the impacts are travel time and speeds for the before and after conditions.

**Existing Condition:**

The study segment is northbound Kamehameha Highway between Ka Uka Boulevard and Lanikuhana Avenue (approximately 1.9 miles)

In the northbound direction after Ka Uka Boulevard, Kamehameha Highway consists of one 11-foot lane with shoulder widths that vary between 2 - 6 feet. The posted speed limit is 35 MPH. Shortly after Roosevelt Bridge, it widens to two 11-foot lanes with shoulder widths that vary from 0 - 2 feet. The posted speed limit is 45 MPH.

**Data Collection:**

Travel times were taken on Kamehameha Highway from the intersections of Ka Uka Boulevard to Lanikuhana Avenue. The travel time runs were conducted during the work week when schools were in session.

Baseline data (two northbound lanes) was collected on March 14, 2018 from 3:30 p.m. - 6:00 p.m. The demonstration was conducted by coning off the left-lane, resulting in a single lane headed northbound. During the demonstration (one northbound lane), data was collected on April 4, 2018 and April 5, 2018 during the same time period.

The data consisted of travel time runs taken at 15-minute intervals starting at 3:30 p.m. During each run, information on elapsed travel time and speed were recorded at five reference points within the study segment.

In addition, traffic volume counts were taken on Kamehameha Highway near the pedestrian overpass. Traffic volumes on the H-2 Freeway was obtained for the same time.

**Travel Time and Speed Results:**

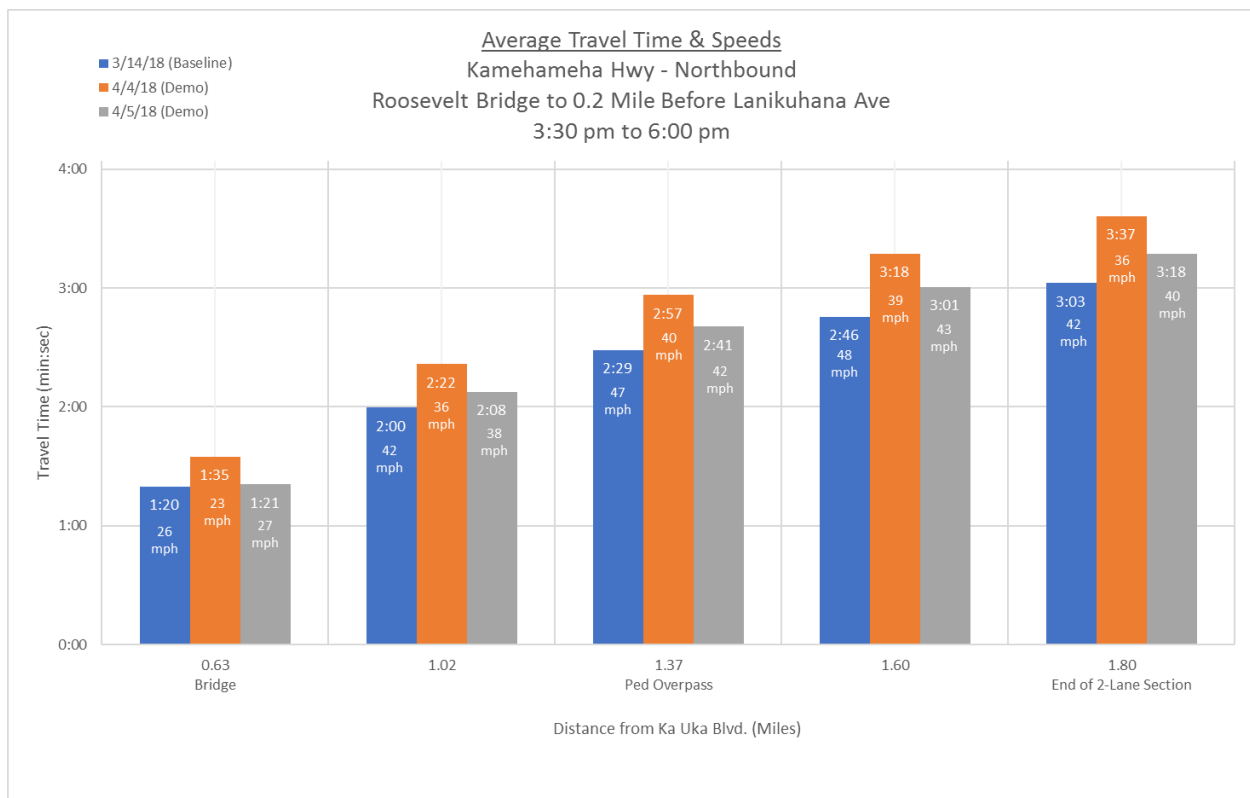
On the day of the baseline survey (3/14/18), the average time it took for a vehicle to travel on Kamehameha Highway from the intersection of Ka Uka Boulevard to a point just before (0.2 mile) the intersection of Lanikuhana Avenue was 3:03 minutes. The longest travel time was 3:33 minutes at 4:15 pm, while the shortest was 2:46 minutes at 4:00 pm. Speeds varied along the corridor from 26 to 48 mph.

On the first day of the Demonstration (4/4/18), the average time it took for a vehicle to travel on Kamehameha Highway from the intersection of Ka Uka Boulevard to a point just before (0.2 mile) the intersection of Lanikuhana Avenue was 3:37 minutes. The longest travel time was 4:28 minutes at 4:45 pm, while the shortest was 3:06 minutes at 5:30 pm. Speeds varied along the corridor from 23 to 40 mph.

On the second Demonstration day (4/5/18), the average time it took for a vehicle to travel on Kamehameha Highway from the intersection of Ka Uka Boulevard to a point just before (0.2 mile) the intersection of Lanikuhana Avenue was 3:18 minutes. The longest travel time was 4:03 minutes at 5:15 pm, while the shortest was 2:45 minutes at 4:00 pm. Speeds varied along the corridor from 27 to 43 mph.

The table and figure below summarizes the data.

<b>Travel Time Summary</b> <b>Kamehameha Hwy. Northbound</b> <b>Ka Uka Blvd. to 0.2 Mile before Lanikuhana Ave.</b>			
<b>Date</b>	<b>Average (min:sec)</b>	<b>Longest (min:sec)</b>	<b>Shortest (min:sec)</b>
3/14/18 Baseline	3:03	3:33	2:46
4/4/18 Demo	3:37	4:28	3:06
4/5/18 Demo	3:18	4:03	2:45



### Traffic Counts:

Vehicle counts (see table below) were taken on Kamehameha Highway in the vicinity of the pedestrian overpass from 3:30 p.m. – 6:00 p.m. and on the H-2 Freeway near the Pineapple Road Overpass. The traffic volume on Kamehameha Highway was higher on the Demonstration days, but did not appear to have a significant impact.

<b>Traffic Volumes</b>			
<b>Date</b>	<b>Kamehameha Highway</b>	<b>H-2 Freeway</b>	<b>Total</b>
14-Mar-18	2,964	9,668	12,632
4-Apr-18	3,272	10,721	13,993
5-Apr-18	3,176	10,391	13,567

### Summary:

The impact of reducing the number of northbound lanes on Kamehameha Highway from two-lanes to one lane does result in an increase in travel times. However, the overall traffic flow was still considered good, with little or no congestion. The study showed that the average travel times increased by 15-34 seconds and the largest increase was less than a minute. Vehicles in the reduced lanes section were still able to maintain speeds of 30-45 mph.