

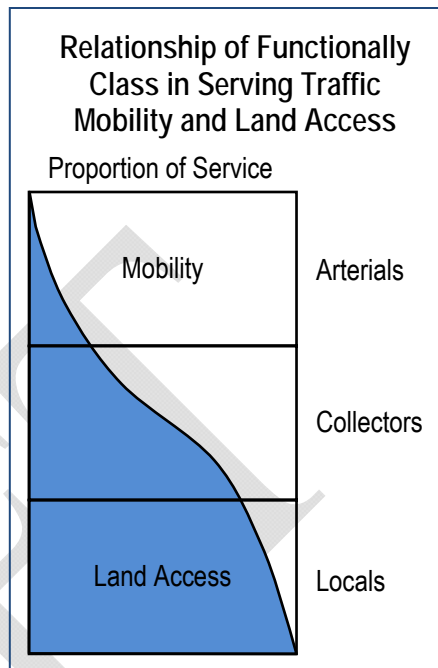
1.0 PROJECT PURPOSE AND NEED

Kamehameha Highway (Route 83) is a 2-lane rural highway functionally classified by HDOT as a “Principal Arterial (3)” because it is the principal roadway used for mobility between surrounding urban areas. Although principal arterials typically have limited access, there are a number of local roads, residential driveways, and informal parking areas along the highway in the project area.

The project area is rural in character but is more visited than a typical rural area due to the scenic beauty of the region, natural resources attractions (i.e., turtles and whales), beaches, and surf. While the North Shore, in general, is an attraction, within the project area, the sea turtles that rest on Laniākea Beach are an attraction that many visitors stop to see. The North Shore Sustainable Communities Plan (NSSCP) estimates that in 2005, the North Shore experienced an average of 7,000 visitors per day, for comparison, this was about 40% of the total number of residents on the North Shore at the time (NSSCP, 2011). The State of Hawai‘i Department of Business, Economic Development and Tourism (DBEDT) survey that was used to develop these statistics indicates that 51% of all O‘ahu tourists in 2005, visited the North Shore. Such a visitor trend has created significant pressure on the North Shore Community’s resources and infrastructure, including Kamehameha Highway.

For the purposes of this document, the project “needs” are higher-level, broad statements and the project “purposes” are more focused statements that fit under a given need. While funding for the project specifically identifies that the project is intended to address shoreline erosion, the purpose and need of the project goes beyond that single item. These improvements have been developed to address the following needs:

- Reliability. Address coastal erosion to improve roadway reliability.
- Congestion. Relieve congestion to reduce travel times through the project area.
- Safety. Improve safety for all modes of transportation.
- Parking and Access. Make allowances for the planned City parks, vehicle parking at those parks, and access to the beach from those parks.
- Non-Auto Modes. Provide facilities for pedestrians and cyclists.



Priority of Project Needs According to Task Force:

When asked to rank the priority of the Project needs the Project Task Force ranked them as follows:

1. Congestion
2. Safety
3. Reliability
4. Parking and access
5. Support non-auto modes
6. Shoreline retreat

Some of these needs go hand-in-hand. For instance, improving parking and access may help improve safety and relieve congestion. The following sections discuss specific purposes within the identified project high-level needs.

1.1 Improve Reliability

One of the top needs of the project is to improve the reliability of the highway. Specific purposes under this high-level need include:

- Reduce Kamehameha Highway’s vulnerability to erosion and coastal inundation.
- Improve emergency vehicle response time during emergencies and disasters. This purpose also has a component under the need to address congestion.
- Improve the likelihood that Kamehameha Highway will be open and functional during times when evacuation of the area may be necessary (i.e., tsunami, hurricane, etc.)
- Address potential sea level rise to ensure Kamehameha Highway will serve as a principal arterial for generations to come.

Public Input on Erosion and Reliability Need:

At the various public meetings held during project planning, the community had input on the project purpose and need. Some of the specific concerns voiced included:

- Address shoreline erosion or potential future impacts to shoreline structures.
- Preserve for future generations.
- Consider projected climate change.
- Consider shoreline retreat.
- Address reliability during emergencies and disasters



Coastal erosion at Laniākea Beach



Evidence of waves overtopping Kamehameha Highway at Laniākea Beach (January 29, 2007)

(Photo: Dolan Eversole)

Coastal erosion is a common occurrence along Hawai‘i’s shores and is attributable to a variety of factors. In 2003, the Hawai‘i Department of Transportation published the Statewide Highway Shoreline Protection Study, which identified two sections, a 700-foot section and 200-foot section of Kamehameha Highway, fronting Laniākea Beach and Chun’s Reef Beach, respectively, that are directly exposed to the ocean and have imminent or actual highway damage

due to wave attack. At these locations, the Highway is protected by a boulder escarpment; however, overtopping waves and stormwater run-off are undercutting this protection and beginning to undermine the Highway. Therefore, one purpose of the project will be to reduce the highway's vulnerability to coastal erosion at these locations, thereby improving the roadway's reliability.

In addition to the erosion from coastal inundation, the roadway is sometimes closed during high surf and flooding because it is rendered too hazardous to travel (April 2011, North Shore Sustainable Communities Plan (NSSCP) and photograph above). Therefore, another purpose of the project will be to reduce the likelihood that the Highway would be impacted by events such as high surf and heavy rainfall, thereby improving the roadway's reliability.

The Highway is also within the tsunami evacuation zone, as is the surrounding coastal community. Although it is unlikely that the highway could be relocated to a location outside of the evacuation zone, one purpose of the project will be to increase the likelihood that the Highway can survive a tsunami, thereby improving the roadway's reliability.

With the Highway located near the coastline and the conditions discussed above, another consideration is projected sea level rise. Sea level has been projected to rise approximately 1 ft by mid-century and 3 feet by the end of the century. In addition, the predicted climate changes may bring more frequent severe weather events, which could result in more frequent hurricanes and high surf. For those reasons, it is a purpose of this project to address these potential changes, where possible, thereby, increasing the roadway's reliability for future generations that may live with these predicted changes.

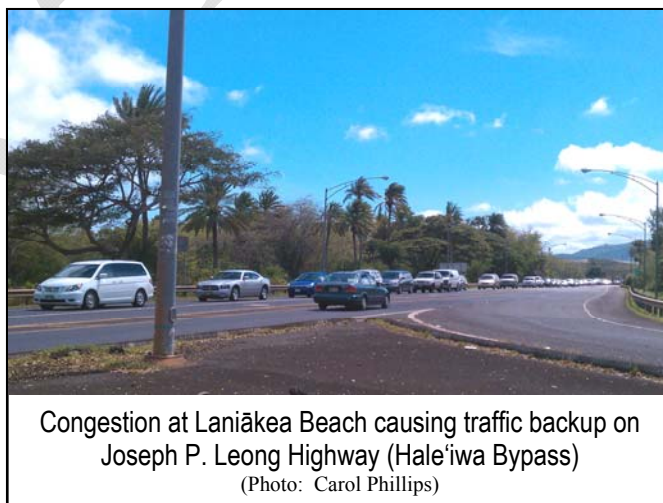
1.2 Relieve Congestion

Relieving vehicle congestion in the project area is one of the primary needs and was ranked as the greatest need by the project Task Force. Kamehameha Highway, along O'ahu's famous North Shore, is a popular driving destination for both kama'āina and tourists alike. As spectators make their way out of Hale'iwa Town, the first glimpse of the ocean occurs at Laniākea Beach, where the ocean is only a few feet away from the roadway right-of-way.

While the O'ahu Regional Transportation Plan 2035 (April 2011) indicated the level of service for Kamehameha Highway as

"congestion-free", North Shore residents report that they regularly experience congestion in the project area. The congestion appears to be caused by a combination of:

- Vehicles travelling slowly on Kamehameha Highway so that passengers can catch glimpses of sea turtles and surf conditions.
- Vehicles that stop at Laniākea Beach and Chun's Reef Beach, both exiting and entering the Highway.



Congestion at Laniākea Beach causing traffic backup on
Joseph P. Leong Highway (Hale'iwa Bypass)
(Photo: Carol Phillips)

- Pedestrians crossing the Highway at random locations, from informal parking areas on the mauka side of the Highway to access the beaches on the makai side of the Highway (photo to the right).



Pedestrians crossing the Highway and vehicles parked informally near turtle viewing area at Laniākea Beach
(Photo: Carol Phillips)

This set of conditions has resulted in severe congestion occurring frequently in the afternoons and weekends in the project area (Section X.X – reference to traffic section of the EA). At times vehicles are stacked up beyond the Joseph P. Leong Highway intersection (Hale‘iwa Bypass) (photo on previous page) and beyond the Kamehameha Highway intersection with Pupukea Road on the Waimea Bay side of the project area. Typically, congestion decreases significantly once beyond the Laniākea Beach area.

The high-level project need of relieving congestion can be broken into a number of purposes; they are:

- Reduce travel time through the project area.
- Improve emergency vehicle response times in the area.

1.3 Improve Safety, Parking, and Beach Access

In addition to relieving traffic congestion, the purpose of this Project is to improve safety for both pedestrians and motorists utilizing Kamehameha Highway. There are no sidewalks and no crosswalks along this section of Kamehameha Highway, yet at times more than 100 people cross the highway per hour at Laniākea (Section X.X – reference to traffic section of the EA). The lack of an established circulation pattern for pedestrians creates conditions where beachgoers cross the Highway at haphazard locations without the benefit of a crosswalk. The safety environment is further complicated by the congested traffic, as drivers have been observed using the roadway shoulder or driving in the on-coming traffic lane to push past the bottle-neck.

The Task Force attributes much of the traffic congestion and safety issues in the vicinity of Laniākea Beach to a lack of controls and centralized access for those who wish to access the beach. It is not a purpose of this

Public Input on Safety, Parking and Beach Access

At the various public meetings the public indicated:

- Drivers have been observed passing on shoulders, reducing safety in the area.
- Pedestrian safety, particularly if County parks are developed on mauka side of Highway, should be addressed.
- Accessibility to and views of the ocean are important.
- Parking is currently inadequate for the range of uses; primarily surfers and visitors viewing turtles.

project to provide parking. The City and County Department of Parks and Recreation have plans to develop two parks, Laniākea and Kawailoa Beach Parks, in the project area; those two parks will provide ample parking. It is the purpose of this project to:

- Provide safe access for vehicles, bicycles, and pedestrians between the City and County parks and Kamehameha Highway.
- Provide safe access to the beach for those that park in the City and County Beach parks.

1.4 Provide Pedestrian and Bicycle Facilities

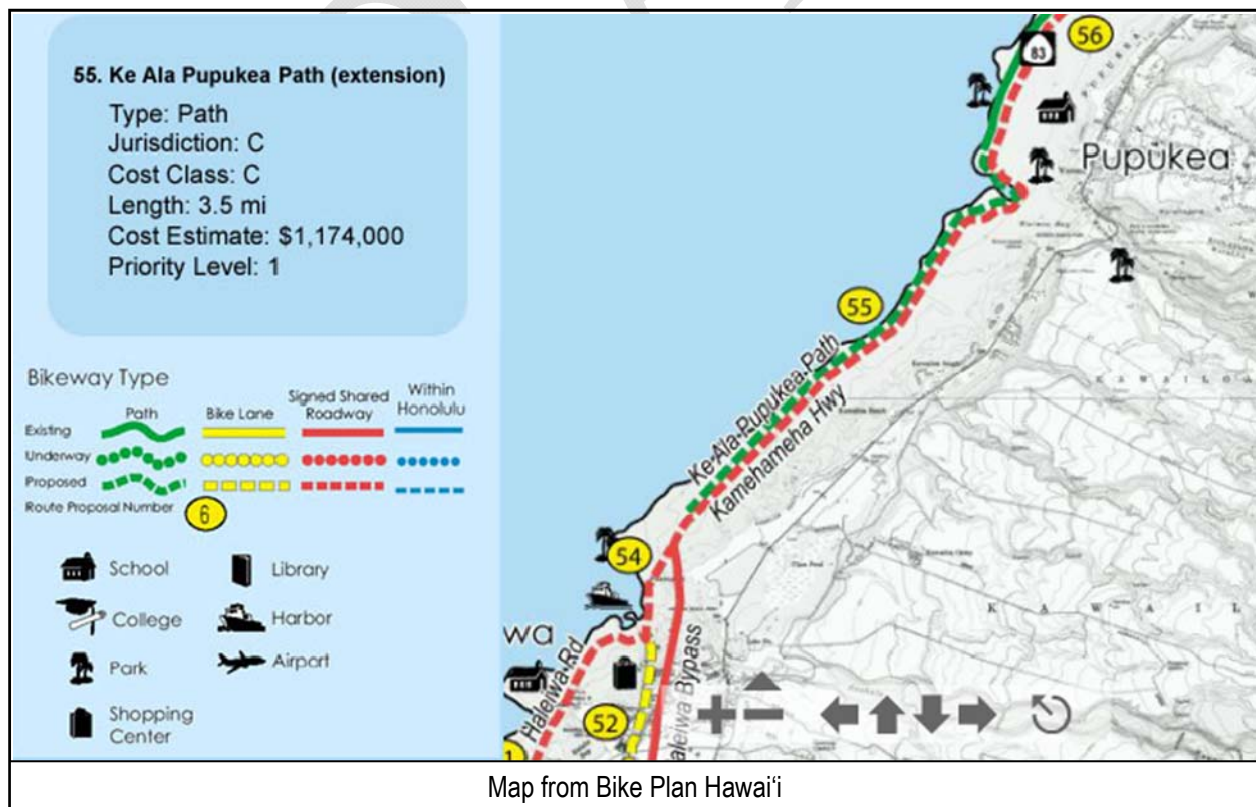
As indicated by the NSSCP, the community does not favor increasing the Highway's capacity to accommodate more cars, but supports the promotion of alternative modes of transportation. At this time there are no pedestrian and bicycle facilities within the project limits. Pedestrians and cyclists utilize the roadway shoulders or are forced to the margins of the right-of-way and adjacent properties.

HDOT's master plan for bicycle facilities, Bike Plan Hawai'i (2003), provides a long-term strategy for the State's bicycle improvements. Bike Plan Hawaii identifies a signed shared road,

Public Input on Alternative Modes of Transportation

Specific concerns related to alternative modes of transportation included:

- Support for alternative modes of transportation, particularly bicycles, need to be part of the solution.
- Crosswalk or other method to concentrate/facilitate pedestrian crossings is desired, particularly if County parks are developed on mauka side of Highway.
- Desire to implement Bike Plan Hawai'i.
- Encourage non-auto modes of transportation in project area.



which is a widened paved right shoulder, as the long-term plan for this stretch of Kamehameha Highway (see above). Multi-modal facilities provided by this project would need to have the potential for future regional connectivity.

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