



CHAPTER 6

STATEWIDE BIKEWAY NETWORK: FACILITY RECOMMENDATIONS

6.1 FUTURE BIKEWAY NETWORK

The island maps included in Appendix F of this document depict the future bikeway network. Discussions held early in the planning process led to a consensus that the master plan show the complete network, rather than a “constrained” network (i.e., only facilities that reasonably could be built within a 20-year time frame).

As in earlier editions of the plan, existing roads are the core of the bikeway network. The roadway system is established and extensive, and it already provides access to most attractions and destinations. The current plan proposes the addition of 1,722 miles of bicycle facilities (compared to 1,309 miles in the 1994 Plan). Expansion of the network is a testament to the large number of citizens who participated in the planning process and shared their ideas for improving bicycle accommodations. Based on the input received, the bikeway network extends beyond the highway system and includes major secondary streets and off-road corridors where bicycling can be made safer and more enjoyable.

Two important provisos are attached to the bike network maps and accompanying lists of bikeway proposals. First, there are many miles of highway that potentially meet AASHTO guidelines for minimum shoulder width, yet are listed as “proposed” facilities. Historically, HDOT has considered only signed routes to be bicycle facilities; therefore, *unsigned* road segments are not recognized as existing facilities. In fact, it may be appropriate for these routes to *remain* unsigned. Therefore the plan includes a policy proposal (see Chapter 4) to restructure the HDOT facility inventory to add “shoulder bikeway” as an officially recognized facility type. If this recommendation is implemented, an investigation will be needed to evaluate road conditions for compliance with AASHTO guidelines and a determination made as to whether a particular route should be included in the HDOT inventory of bicycle facilities. This process would alter the maps and lists of proposed facilities. Table 6-1 provides a preview of how the revised picture might look.

Table 6-1
Summary of Existing and Proposed Bikeways

	Existing & Underway (mi.)	Proposed (mi.)	Honolulu Bike Plan (mi.)	Total Network (mi.)	Percent Complete	Est. of Unofficial Shoulder Bikeways (mi.)	Total “Bike Friendly” (mi.)	Percent “Bike Friendly”
Kauai	25.6	261.1		286.7	8.9%	47.7	73.3	25.6%
Oahu	135.7	258.9	91.4	486.0	27.9%	28.1	163.8	33.7%
Maui	85.9	337.2		423.1	20.3%	72.9	158.8	37.5%
Molokai	5.8	52.0		57.8	10.0%	27.9	33.7	58.3%
Lanai	0.0	18.2		18.2	0.0%	9.9	9.9	54.4%
Hawaii	78.3	794.4		872.7	9.0%	204.6	282.9	32.4%
State	331.3	1,721.8	91.4	2,144.5	15.4%	391.1	722.4	33.7%

The current inventory includes 208 miles of existing bicycle facilities and an additional 122 miles of facilities that are underway (in design and construction)—for a total of 330 miles of bicycle facilities that are, or shortly will be, in operation. The master plan shows a future network composed of 2,144 miles. This means that 15% of the overall network has been constructed. However, a preliminary investigation reveals an additional 391 miles of roadways with paved shoulders or wide curb lanes that may require little, if any, improvement (see Appendix H). If these “bike-friendly” miles are added to the inventory, then approximately 721 miles or about one-third of the network can be considered complete.

The second important proviso is the conceptual nature of the bikeway alignments, particularly in the case of off-road paths and future roads (such as bypass highways). The ultimate alignment would depend on right-of-way acquisition, impacts on environmental and cultural resources, and surrounding land uses. Final alignments or facility locations will be determined after more detailed engineering and design studies are conducted.

6.2 PUBLIC PARTICIPATION AND METHODOLOGY FOR SELECTING RECOMMENDED BIKEWAYS

Local input was critical to the facility planning process. Workshop 1 in Wailuku, Maui.



6.2.1 INITIAL MAPPING

Meetings with state and county transportation and planning officials, as well as the public workshops, provided valuable information about what bicyclists like and dislike about bicycling in Hawaii, where they would bicycle if

better facilities were available, and which types of facilities would best serve their needs. The workshop mapping sessions generated many ideas about ways to link key destinations via arterials and lower volume side streets.

6.2.2 EVALUATION CRITERIA AND PHASING

All bikeway proposals were assumed to improve safety for bicyclists and, therefore, would be equally desirable from that perspective. Thus, in order to discriminate among the proposals, a screening methodology, employing 14 criteria, was developed. These criteria address mobility and accessibility issues, user needs and preferences, non-vehicular safety concerns, implementation and cost, and aesthetics. The criteria themselves were reviewed by the participants of Workshop 2.

Based on the evaluation process, bikeway proposals were categorized into one of four priority levels:

Priority I: less than 10 years to completion

Priority II: less than 20 years

Priority III: more than 20 years

Priority IV: contingent-includes bikeways that are incidental to new road construction or road widening. The timetables for these bikeways are dependent on the roadway project.

Evaluation Criteria

Mobility and Accessibility

- Does the route serve a population center?
- Does the route provide access to public facilities (e.g., schools, libraries, parks)?
- Does the route enhance network continuity by providing a missing link?
- Does the route provide a direct connection—the shortest distance between destinations?
- Does the route provide an alternative connection via streets with lower motor vehicle speed or volume?

Users

- Is the route accessible to a variety of users (e.g., children, seniors, disabled persons, experienced cyclists, families)?
- Does the route have economic development potential? Could it attract visitors from other islands, states, or countries?
- Is the route located where there is demand for a bicycle facility? How is that demand expressed?



Bike Plan Hawaii seeks to identify routes that are important to bicyclists. Hilo, Hawaii.

Safety

- Are there exceptional (non-vehicular) hazards that bicyclists would be exposed to?
- Is the bike facility accessible to emergency personnel? police surveillance?



Implementation and Cost

- What activities have been pursued already in implementing the bike facility (e.g., preliminary planning or design)?
- Will the route require right-of-way acquisition?
- Is the route at risk of being lost to development activities?

Aesthetics

- Are there special features that will attract bicyclists (e.g., scenic vistas, unique cultural sites)?

Many of the new roads are designed to be bicycle friendly. Equally important, however, is connecting the segments. Waipahu, Oahu.

6.2.3 BICYCLE FACILITY MAPS

The statewide bikeway network, across six islands, is shown on a series of maps found at the end of the plan (Appendix F). In addition to the six island maps, more detailed regional maps are provided for urban areas that have a denser grid of bike facilities. Numbers on the map are keyed to the “map list” which also provides estimated length, jurisdiction, and order-of-magnitude cost (Appendix E).

The Pearl Harbor Bike Path gives bicyclists an alternative to busy Kamehameha Highway. Aiea, Oahu.



Some facilities are intended to serve many types of users. North Shore Bikeway, Kahului, Maui.



6.3 COST ESTIMATES

Recommended bicycle treatments are most easily implemented when new construction or reconstruction is planned. When implementation involves retrofitting an existing roadway to accommodate bicycle use, the project can be more complex. For example, existing streets built with curbs and gutters are generally viewed as having a fixed width so any bicycling improvement will likely be limited to restriping the existing lanes. Any effort to build a new facility by relocating curbs and gutters, and possibly utility poles and light standards, would incur significant costs, as reflected in the cost factors shown in Table 6-2.

The preliminary cost calculated for each proposal represents an “order of magnitude” estimate based on a given level of improvement. More accurate cost assignments would require more detailed facility design and engineering based on location-specific environmental conditions.



This bike lane provides safe access to and from neighborhood schools. Lanikai, Oahu.

Over several years, HDOT has eked out shoulder space wherever possible to better accommodate bicycles, as along this scenic stretch of Kalanianaʻole Highway. Makapuu, Oahu.



Table 6-2
Cost Factors per Mile

	Cost Classification A (Minor Change)	Cost Classification B (Moderate Change)	Cost Classification C (Major Change/New Facility)
Signed Shared Route	\$2,500	\$33,968	\$222,856
Lane	\$8,004	\$30,444	\$860,154
Path	\$4,418	\$176,368	\$264,118

Notes:

Routes and lanes assume construction on two sides of the roadway

Path assumes single facility with two-way travel

Facilities are designed to AASHTO minimum guidelines

Neighbor island projects incur a 15% premium

Engineering and design costs estimated at 12% of construction cost

Contingency estimated at 15% of construction cost

Detailed cost factors shown in Appendix B.

6.4 PRIORITIZATION OF BICYCLE FACILITY PROPOSALS

Priority I proposals, representing bicycle facilities recommended for near-term implementation, are listed below, by island. These are facilities that, pending the programming and allocation of funds, are desired for construction within 10 years. Proposals that are categorized in priority levels II, III, and IV may be found, by island, in Appendix G (after the maps).

6.4.1 KAUAI NEAR-TERM RECOMMENDATIONS

Coastal Multi-use Path—Lydgate Park to Waikaea Canal

No. 7b (Kauai Map, Kawaihau Close-up Map)

Coastal Multi-use Path—Kuna Bay to Anahola

No. 7c (Kauai Map)

Bike Lane on Ahukini Road from Kuhio Highway to Kapule Highway

No. 20a (Kauai Map, Lihue Close-up Map)

Bike Lane on Hardy Street—Kuhio Highway to Umi Street

No. 26 (Kauai Map, Lihue Close-up Map)

Signed Shared Road—Nawiliwili Road from Kaumualii Highway to Lala Road

No. 34 (Kauai Map, Lihue Close-up Map)

Signed Shared Road—Puhi Road from Puhi Road to Hulemalu Road

No. 35 (Kauai Map, Lihue Close-up Map)

Shared Use Path—Maluhia Road from Kaumualii Highway to Koloa Town

No. 39 (Kauai Map)

Signed Shared Road—Kaumualii Highway from Maluhia Road to Hanapepe Town

No. 48 (Kauai Map)

6.4.2 OAHU NEAR-TERM RECOMMENDATIONS

In addition to the proposals listed below, additional Priority I projects are included in the Honolulu Bicycle Master Plan. The Honolulu Master Plan covers the Primary Urban Center (PUC), while the scope of *Bike Plan Hawaii* includes all bicycle facilities in the surrounding suburban and rural areas of Oahu, and bicycle facilities under the State jurisdiction only in the PUC. Priority I projects in both plans will be coordinated through the Oahu TIP.

Bike Lane on Meheula Parkway through Mililani and Mililani Mauka

Bike Lane Striping and Signage at the H-2 Mililani Interchange

Nos. 8 and 9 (Oahu Map, Mililani–Waipahu Close-up Map)

Kipapa Gulch Pathway—Anania Drive to Central Oahu Regional Park

No. 10 (Oahu Map, Mililani–Waipahu Close-up Map)

Signed Shared Road—Hanson and Essex Roads from Leeward Bikeway to White Plains Beach

Nos. 34a and 34b (Oahu Map, Kapolei–Ewa Close-up Map)

Signed Shared Road—Farrington Highway from Auyong Homestead Road to Honokai Hale

No. 47 (Oahu Map)

Extension of Ke Ala Pupukea Path from Waimea Bay to Haleiwa Beach Park

No. 55 (Oahu Map)

Kawainui Levee Path

No. 84a (Oahu Map, Kailua–Waimanalo Close-up Map)

Signed Shared Road—Kalanianaʻole Highway from Waimanalo Beach Park to Sandy Beach

Nos. 94 and 95 (Oahu Map)

Bike Lane on Ala Moana Boulevard from Kalakaua Avenue to the end of the existing bike lane on Nimitz Highway.

No. 102 (Oahu Map)

Bike Lane on Nimitz Highway from Middle Street to Waiakamilo Road

No. 103 (Oahu Map)

6.4.3 MAUI NEAR-TERM RECOMMENDATIONS

Bike Lane on Wakea Avenue from Kaahumanu Avenue to Onehee Avenue

No. 11a (Maui Map, Wailuku–Kahului Close-up Map)

Bike Lane on Onehee Avenue from Wakea Avenue to Papa Avenue

No. 12 (Maui Map, Wailuku–Kahului Close-up Map)

Bike Lane on Papa Avenue from Kamehameha Avenue to Laau Street

No. 13a (Maui Map, Wailuku–Kahului Close-up Map)

Bike Lane on Papa Avenue from Puunene Avenue to Hina Avenue

Map 13b (Maui Map, Wailuku–Kahului Close-up Map)

Bike Lane on Lono Avenue from Kaahumanu Avenue to Kamehameha Avenue

No. 14a (Maui Map, Wailuku–Kahului Close-up Map)

Bike Lane on Lono Avenue from Papa Avenue to Laau Street

No. 14b (Maui Map, Wailuku–Kahului Close-up Map)

Bike Lane on South Puunene Avenue from Kaahumanu Avenue to Dairy Road

No. 16a (Maui Map, Wailuku–Kahului Close-up Map)

Signed Shared Road—Makawao Avenue from Kokomo Road to Makani Road

No. 34 (Maui Map, Upcountry Close-up Map)

Pull-out Areas along Haleakala Crater Road (access to National Park)

No. 45 (Maui Map, Upcountry Close-up Map)

Kihei Greenway—Shared use path from Kaonoulu Street to East Waipulani Road, and from East Lipoa Street to Kilohana Drive

Nos. 56a and 56b (Maui Map, Kihei Close-up Map)

Signed Shared Road—East Welakahao Road from South Kihei Road to Piilani Highway

No. 57 (Maui Map, Kihei Close-up Map)

Signed Shared Road—Ohukai Road from South Kihei Road to Piilani Highway

No. 61 (Maui Map, Kihei Close-up Map)

Signed Shared Road—South Kihei Road from Ohukai Road to Mokulele Highway

No. 62 (Maui Map, Kihei Close-up Map)

6.4.4 MOLOKAI NEAR-TERM RECOMMENDATIONS

Signed Shared Road—Kamehameha V Highway from Kalae Highway to Mile 8 Marker, and from Mile 8 Marker to Mile 10 Marker

Nos. 2 and 3 (Molokai Map)

Signed Shared Road—Farrington Avenue and Puupeelua Avenue

Nos. 4 and 5 (Molokai Map)

Signed Shared Road—Maunaloa Highway from Kalae Highway to Maunaloa Village

Nos. 6 and 7 (Molokai Map)

6.4.5 LANAI NEAR-TERM RECOMMENDATIONS

Signed Shared Road—Kaumalapau Highway from Lanai Airport to Lanai Avenue

No. 2 (Lanai Map)

6.4.6 HAWAII (BIG ISLAND) NEAR-TERM RECOMMENDATIONS

Bike Lane on Kilauea Avenue from Waianuenue Avenue to W. Puainako Street
No. 2 (Hilo Close-up Map)

Bike lane on Waianuenue Avenue from Bayfront Highway to the Hilo Medical Center
No. 7a (Hilo Close-up Map)

Bike Lane on Mohouli Street from Komohana Street to Kilauea Avenue
No. 10 (Hilo Close-up Map)

Bike Lane on Komohana Street from Waianuenue Avenue to Ainaola Drive
No. 12a (Hilo Close-up Map)

Bike Lane on the Civic Center loop, including Aupuni Street and Pauahi Street
No. 14 (Hilo Close-up Map)

Bike Lane on Bayfront Highway from Waianuenue Avenue to Pauahi to Bayfront crossover to Manono Street
No. 15a (Hilo Close-up Map)

Bike Lane on Kamehameha Avenue from Waianuenue Avenue to Wailoa River Bridge
No. 15b (Hilo Close-up Map)

Bike Lane on Kekuaaoa Street (Airport Access Road) from Kanoelehua Avenue to Hilo Airport Terminal
No. 18 (Hilo Close-up Map)

Bike lane on Kekuaaoa Street from Kilauea Avenue to Kanoelehua Avenue
No. 20 (Hilo Close-up Map)

Bike Lane on Manono Street from East Kawili Street to Bayfront Highway
No. 21 (Hilo Close-up Map)

Bike Lane on East Kawili Street from Kilauea Avenue to Kanoelehua Avenue
No. 22 (Hilo Close-up Map)

Bike Lane on West Puainako Street from Komohana Street to Kinoole Street
No. 23 (Hilo Close-up Map)

Signed Shared Road—Kawailani Street from Komohana Street to Kinoole Street
No. 24 (Hilo Close-up Map)

Signed Shared Road—Volcano Highway from Kanoelehua Avenue to Keaau-Pahoa Road
No. 28 (Hawaii Map, Hilo Close-up Map)

Bike Lane on Railroad Avenue from Leilani Street to the end of street (at Kaaahi Road)
No. 29a (Hawaii Map, Hilo Close-up Map)

Railroad Avenue Bikeway—Shared use path from Railroad Avenue in Hilo (end of paved section) to Hawaiian Paradise Park Subdivision

Local connection from the Railroad Avenue Bikeway to the Keaau Schools Complex

Nos. 29b and 30a (Hawaii Map, Hilo Close-up Map)

Signed Shared Road—Keaau-Pahoa Road from the end of the bypass segment to Shower Drive

No. 32 (Hawaii Map, Hilo Close-up Map)

Shared Use Path known as Old Volcano Trail along a preliminary alignment from Volcano Highway to So. Glenwood Road to Kahikopele Street to Puhala Street to Olaa Road

No. 35 (Hawaii Map)

Signed Shared Road—Kuakini Highway from Mamalahoa Highway to Lako Street

Bike Lane on Kuakini Highway from Lako Street to Hualalai Road

No. 58a–c (Kailua-Kona Close-up Map)

Northern extension of the Wailua Road Pedestrian and Bicycle Scenic Route from Lako Street to Alii Drive. Southern extension to Old Mamalahoa Highway

Nos. 60a and 60b (Kailua-Kona Close-up Map)

Various improvements along Alii Drive from Palani Road to Keauhou Road

No. 65 (Kailua-Kona Close-up Map)

Signed Shared Road—Queen Kaahumanu (extension segment) from Henry Street to Kuakini Highway

No. 68 (Kailua-Kona Close-up Map)

Bike Lane on Keanalehu Drive from Kealakehe Parkway to Kealakehe Community Pathway

No. 70c (Kailua-Kona Close-up Map)

Bike Lane on Kealakehe Parkway from Queen Kaahumanu Highway to Keanalehu Drive

No. 76b (Kailua-Kona Close-up Map)

Separated Shared Use Path adjacent and parallel to Queen Kaahumanu Highway from Makala Street to Keahole Airport

No. 81a (Kailua-Kona Close-up Map)

Signed Shared Road—Queen Kaahumanu Highway from Waikoloa Road to Kealakehe Parkway

No. 83 (Kailua-Kona Close-up Map)

Bike Lane “Waikoloa Bikeway” on Paniolo Avenue

No. 89 (Hawaii Map)

Signed Shared Road—Akoni Pule Highway from Kawaihae Road to Hawi Road

No. 92a and 92b (Hawaii Map)

Various segments of shared use paths in the Waimea Trails and Greenways network

No. 96a–c (Waimea Close-up Map)