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Bike Plan *Hawaii*

A STATE OF HAWAII MASTER PLAN

STATE OF HAWAII
DEC 2 2003
LEGISLATIVE COUNSEL BUREAU

Prepared for
Highways Division
Department of Transportation
State of Hawaii

Prepared by
Kimura International, Inc.

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ACKNOWLEDGEMENTS

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Mahalo to all the public officials, bicycling enthusiasts, and citizen participants who provided information, shared their ideas, and reviewed preliminary documents.



LINDA LINGLE
GOVERNOR



EXECUTIVE CHAMBERS
HONOLULU

MESSAGE FROM
GOVERNOR LINDA LINGLE

Aloha,

Bike Plan Hawaii 2003 provides a status report of bicycling conditions in Hawaii and a long-term blueprint for future programs and facility improvements. The planning process included consultations with federal, state, and county officials, local bicycling organizations, and members of the general public through 21 community meetings.

Bike Plan Hawaii 2003 is a state Department of Transportation master plan to create a guide for enhancing the bicycling environment through a variety of channels – from grassroots initiatives to government actions. The plan recognizes that bicycle facilities have become integral to our state and city transportation infrastructure.

Bicycling provides an opportunity to showcase our Islands' beautiful natural surroundings, and offers an alternative mode of transportation that improves our quality of life.

I wish to extend a sincere mahalo to the many people who contributed information, bikeway proposals, and programmatic suggestions to the plan.

Building a successful bicycling network will ultimately depend on coordinated efforts by many residents across the state. Our Administration looks forward to working with all of you who are interested in making Hawaii bike-friendly for residents and visitors.

Mahalo,

LINDA LINGLE
Governor



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GLOSSARY OF TERMS AND ACRONYMS

AASHTO – American Association of State Highway and Transportation Officials

ADA – Americans with Disabilities Act of 1990. Federal law which requires accessible public transportation services for persons with disabilities, including facilities along highways, trails, sidewalks, and other public settings.

Bicycle – A vehicle propelled solely by human power upon which a person may ride.

Bicycle Facility – A general term denoting improvements and provisions made by public agencies specifically to accommodate or encourage bicycling, including parking and storage facilities.

Bicycle Lane (or Bike Lane) – A portion of a roadway which has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists.

Bicycle Path (or Bike Path) – see Shared Use Path.

Bicycle Route (or Bike Route) – A general term referring to a course that may be traveled by bicycle between an origin and a destination. The 1994 plan's use of "bicycle route" as a type of bicycle facility has been changed to "signed shared roadway" to be consistent with terminology used in the AASHTO Guide for the Development of Bicycle Facilities.

Bikeway – A general term for any road, street, path, or way which is used for bicycle travel, regardless of whether such facilities are designated for exclusive use of bicycles or are to be shared with other transportation modes. A bikeway may be signed or unsigned for bicycle use.

CMAQ – Congestion Mitigation and Air Quality improvement program

FHWA – Federal Highway Administration

Greenway – A pathway for various modes of transportation, including bicycles, that contains elements of a linear park.

HBL – Hawaii Bicycling League

HDOT – State of Hawaii Department of Transportation

HRS – Hawaii Revised Statutes

ISTEA – The Intermodal Surface Transportation Efficiency Act, passed by Congress in 1991, authorized Federal spending for transportation projects from FY 1992 to FY 1997.

LRTP – Long-range (land) transportation plan

MACB – Mayor's Advisory Committee on Bicycling (City and County of Honolulu)

MBAC – Mayor's Bicycle Advisory Committee (Maui County)

MUTCD – Manual on Uniform Traffic Control Devices

OMPO – Oahu Metropolitan Planning Organization

PATH – People's Advocacy for Trails Hawaii

PUC – Primary Urban Center, an area of urban Honolulu stretching from Kahala to Pearl City.

Right-of-way – A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes.

Right of Way – The right of a vehicle or pedestrian to proceed in a lawful manner in preference to another vehicle or pedestrian.

SCP – Sustainable Communities Plan (for regions in the City and County of Honolulu)

Shared Roadway – A roadway that is open to both bicycle and motor vehicle travel. This may be an existing roadway, street with wide curb lanes, or road with paved shoulders.

Shared Use Path – A bikeway physically separated from motorized vehicular travel by an open space or barrier, and either within the highway right-of-way or within an independent right-of-way. Shared use paths may be used by other non-motorized users.

Shoulder – The portion of roadway contiguous with the traveled way for accommodation of stopped vehicles, emergency use, and lateral support of sub-base, base, and surface courses.

Sidepath – An informal term referring to a portion of a street or highway right-of-way, separated from motor vehicle traffic, and designed for non-motorized modes of travel, including bicycles. Sidepaths are typically wider than sidewalks to accommodate pedestrians and bicycles.

Sidewalk – A portion of a street or highway right-of-way designed for preferential or exclusive use by pedestrians.

Signed Shared Roadway – A shared roadway which has been designated by signing as a preferred route for bicycle use.

STP – Statewide Transportation Plan

STP Flexible – Surface Transportation Program Flexible funding program.

STIP – Statewide Transportation Improvement Program

TE – Transportation Enhancements

TEA-21 – Transportation Equity Act for the 21st Century, passed by Congress in 1998, re-authorized and expanded many provisions of ISTEA. TEA-21 expires in FY 2003.

TIP – Transportation Improvement Program

TOP 2025 – Transportation for Oahu Plan 2025

Trail – An identifiable linear course for use by non-motorized vehicles. Specific trails may be marked for use by bicycles. The Hawaii Revised Statutes classify trails as corridor trails, segment or connector trails, and special use trails.

US DOT – United States Department of Transportation

Wide Curb Lane (or Wide Outside Lane) – A through travel lane that is wider than 12 feet (usually 14 feet) to better accommodate both bicycles and motor vehicles in the same lane.

CHAPTER 1 INTRODUCTION

1.1 WHAT IS BIKE PLAN HAWAII?

Bike Plan Hawaii is a tool to integrate bicycling into the state's transportation system. The plan outlines how the state intends to accommodate and promote bicycling. It draws on a combination of existing and future bicycle facilities, policies, and programs to ensure a successful bicycle network.

This document updates the previous plan, completed in 1994. Significant progress has been achieved, but more remains to be done. Since 1994, Federal transportation legislation—beginning with the landmark ISTEA and followed by TEA-21 (see sidebar)—have led to the institutionalization of bicycle planning processes at the state and local levels. The State of Hawaii, Department of Transportation (HDOT) recognizes the importance of bicycling in moving people.

This plan serves as a blueprint to improve conditions for the thousands of people statewide who are already bicycling and to encourage new users. It further clarifies HDOT's role in this effort and identifies opportunities to work with other key agencies and stakeholders.



**BIKING TODAY
IS NO LONGER
A “FORGOTTEN”
MODE OF
TRANSPORTATION.**

Hawaii's mild climate and outdoor-oriented lifestyle are conducive to bicycling. Waikiki, Oahu.



The original Bike Plan Hawaii, prepared in 1977, and the 1994 update provide the foundations for statewide planning of bicycle facilities.

Bike Plan Hawaii contains the following types of information:

- Objectives and implementing actions
- Inventory of existing bicycle facilities
- Maps of proposed bicycle facility improvements
- Indications of preferred facility type for the various routes, such as signed shared roadways, bike lanes, and shared use paths
- Prioritization of projects
- Strategies for implementation, including potential funding sources
- Documentation of public involvement activities
- References to additional resources

The scope of *Bike Plan Hawaii* excluded the following:

- Bikeways that serve a strictly recreational purpose, such as mountain bike trails
- Bicycle facilities on City and County roads in the Honolulu Primary Urban Center (Kahala to Pearl City). These facilities have been addressed through a separate planning process, culminating in the 1999 Honolulu Bicycle Master Plan.

FEDERAL TRANSPORTATION POLICIES ON BICYCLING

In 1991, Congress passed historic legislation that set a new direction for transportation policy. The Intermodal Surface Transportation Efficiency Act (ISTEA, called “ice tea”) recognized that bicycling and walking are part of a balanced transportation system. ISTEA contained several key provisions to support bicycling:

- A 10% set-aside of Surface Transportation Program funding for transportation enhancements, including-but not limited to-facilities for bicycling.
- Opening of numerous other funding programs to pay for bicycling facilities. Projects to protect the safety of bicyclists, including construction of publicly owned bicycle paths and traffic calming measures became eligible for federal safety funds through the Hazard Elimination program. The National Highway System program was expanded to allow for construction of bicycle facilities on land adjacent to any NHS route.
- Requirement that all states and Metropolitan Planning Organizations (including the Oahu Metropolitan Planning Organization or OMPO) prepare long-range transportation plans that address bicycling.
- Requirement that each state appoint a bicycle coordinator.

ISTEA was in effect for a six-year period from 1992 to 1997. The follow-up legislation, the Transportation Equity Act for the 21st Century (TEA-21), was signed into law in June 1998 and will expire in 2003. It carried forward the same programs for bicycling

established in ISTEA and included several new and stronger directives:

- State and MPO long-range plans are to “provide consideration of strategies that will increase the safety and security of the transportation system for motorized and *non-motorized* users (emphasis added).”
- Bicyclists shall be given “due consideration” in state and MPO plans.
- Bicycle facilities are to “be considered, where appropriate, with all new construction and reconstruction of transportation facilities.”

23 USC Section 217 also requires that the Secretary of the U.S. Department of Transportation assure that bicycle and pedestrian linkages are maintained and improved, stating that:

- “The Secretary of Transportation shall not approve any project or take any regulatory action that will result in the severance of an existing major route, or have an adverse impact on the safety of non-motorized transportation traffic and light motorcycles, unless such project or regulatory action provides for a reasonable alternate route or such a route already exists.”
- “In any case where a highway bridge deck being replaced or rehabilitated with federal financial participation is located on a highway on which bicycles are permitted to operate at each end of such bridge, and the Secretary determines that the safe accommodation of bicycles can be provided at reasonable cost as part of such replacement or rehabilitation, then such bridge shall be so replaced or rehabilitated as to provide such safe accommodations.”

In effect, these policies have created a new standard for consideration of bicycling when road projects are undertaken and are helping to protect existing bicycle routes from being abandoned, eliminated, or disturbed.

Other Relevant Federal Policies

Americans with Disabilities Act (ADA).

Administered by the Department of Justice, ADA prohibits state and local governments from discriminating against people with disabilities in all programs, services, and activities. The United States Access Board is working to develop guidelines for trails—with implications for shoulder walkways and bikeways and shared use paths. In the meantime, the Federal Highway Administration (FHWA) published *Designing Sidewalks and Trails for Access, Part I of II: Review of Existing Guidelines and Practices* in 1999 and *Part II of II* in 2001, and recommends that these documents be used when considering how to accommodate persons with disabilities in public rights of way.

Title VI and Environmental Justice. Title VI of the Civil Rights Act of 1964 states that “No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.” The Environmental Justice Order (Executive Order 12898) was signed in February 1994 and extends Title VI by providing that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations.” Together, these federal policies mandate that participation in the transportation decision-making process be open and inclusionary, and that the outcome is an equitable distribution of beneficial and adverse effects.

1.2 STATE PLANS AND POLICIES ON BICYCLING

Hawaii State Plan

The 1996 *Hawaii State Plan* is the umbrella document in the statewide planning system. It serves as a written guide for the long-range development of the state by describing a desired future for the residents of Hawaii and providing a set of goals, objectives, and policies that are intended to shape the general direction of public and private development.

Transportation objectives established in the *Hawaii State Plan* include the following:

Sec. 226-17(a)(1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economic, safe, and convenient movement of people and goods

Sec. 226-17(b)(1) Design, program, and develop a multi-modal system in conformance with desired growth and physical development

Sec. 226-17(b)(11) Encourage safe and convenient use of low-cost, energy-efficient, nonpolluting means of transportation

Hawaii Statewide Transportation Plan

The *Hawaii Statewide Transportation Plan* was updated and published in September 2002 (www.hawaii.gov/dot/stp/completehstp.pdf). Bicycling has been incorporated into all major policy elements of the plan, but the most specific reference is found under the goal of Mobility and Accessibility.

Goal 1: Achieve an integrated multi-modal transportation system that provides mobility and accessibility for people and goods.

Objective 3. To promote alternative air, land, and water transportation mode choices.

C. Facilitate and provide walking and bicycling options that meet statewide and community needs

Examples of actions that would help achieve this objective:

- Provide safe and continuous routes
- Provide educational programs
- Increase the mileage of bicycle lanes and bicycle routes
- Provide wide shoulders along road where bicycle lanes are not feasible or merited
- Sweep and maintain road shoulders and bike/multi-use paths on a regular basis.

1.3 WHY DO WE NEED A BICYCLE MASTER PLAN?

Creating a bicycle plan is important for the following reasons:

- **It establishes a long-term strategy for bicycle facility improvements**

A coherent and interconnected bicycle network requires a long-term commitment and comprehensive vision that extends beyond the piecemeal approach of day-to-day operations. Just as HDOT plans for highways, airports, and harbors, so it should plan for the bicycle network.

- **It enables better coordination between transportation and land-use planning**

A long-term plan provides an opportunity to consider demographic, land-use, and infrastructure changes in relation to each other. With the direction provided by the bicycle plan, HDOT and other public agencies can organize their efforts and expenditures over the course of many years in order to reach the desired goals and objectives for bicycle accommodation. Private developers are also alerted to community preferences for future development.

- **It increases the ability to leverage funds for bicycle facilities**

There are a number of funding sources to implement bicycle projects (see Chapter 8). Being part of an official bicycle plan is a criteria used to select recipients of some federal funds. Conversely, omission from the plan may diminish the ability of bicycle projects to qualify for some types of funding.

- **It provides a mechanism to achieve community consensus**

A formal planning process provides an opportunity to involve the public in the future of the state's bicycle network. Public involvement is essential for a plan's success. First, public input is critical in identifying community needs. A local perspective is needed to know where the important destinations are and to point out the most feasible routes for connecting those destinations. Second, public participation can generate interest for the bicycle program. Without the sustained support and advocacy from citizens, efforts to create a comprehensive bicycle network are likely to lose momentum with decision makers.

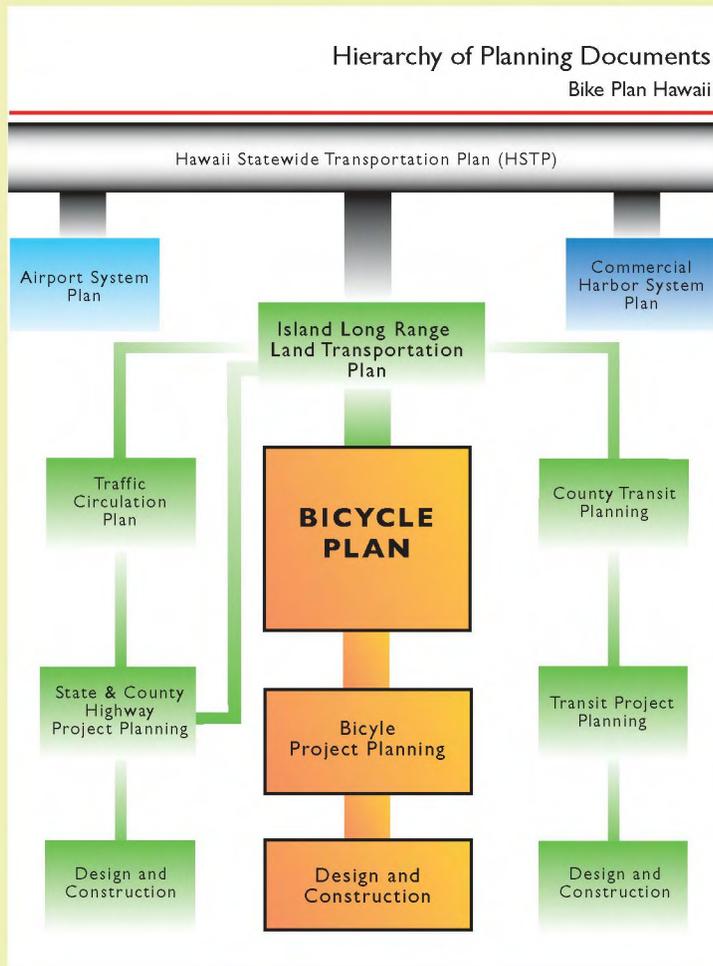


Bicycles are a versatile mode of transportation. For example, serving the occupational needs of police bike patrols (above) and the everyday mobility needs of people and their goods (left). Waikiki, Oahu.

Hierarchy of Transportation Planning Documents in Hawaii

Bike Plan Hawaii is one component of a larger statewide transportation planning process. Figure I-1 shows the relationship among various planning documents. The Hawaii Statewide Transportation Plan (HSTP) is the most comprehensive document and guides future planning for air, harbor, and land transportation facilities and programs. Of the three, development of the land transportation plan is the only one in which OMPO and the counties lead the planning process. While bicycling issues are addressed in each of the county land transportation plans, the State of Hawaii also sponsors a more comprehensive planning effort focused specifically on bicycling. In the terminology used by HDOT, *Bike Plan Hawaii* is a modal master plan.

Figure I-1



Master plans are conceptual in nature. After funds are allocated for a specific project, it then proceeds to the next step, which involves preliminary engineering plans to assess the physical feasibility of the project and satisfy applicable environmental regulations and permits. The most detailed set of plans are the actual design or construction drawings with detailed cost estimates.

Implementation of the *Bike Plan Hawaii* is dependent on available funds. Approval of the plan by HDOT does not guarantee adequate financial resources to carry out the projects, nor can HDOT commit the financial resources of other public agencies or organizations.

1.4 HISTORY OF STATEWIDE BICYCLE PLANNING

A statewide bicycle master plan was first authorized by the State Legislature in 1974 through Act 218, Session Laws of Hawaii, 1974. The first edition of *Bike Plan Hawaii* was published in 1977. The purpose of the plan, as initially conceived, was to provide a framework for the planning, programming, and construction of bikeways. Though it was formulated before the ISTEA era, *Bike Plan Hawaii* was nonetheless linked to FHWA policies, which already stressed the need for a master plan in order to receive federal-aid participation on eligible bikeway projects. The 1977 plan proposed a statewide network with some 1,041 miles of bikeways. The experimental nature of the first plan is seen in the phasing scheme which designated a “demonstration phase during which the necessary knowledge and experience can be gained for application to future bikeway planning...[S]ubsequent development of bikeways would depend largely on the success or failure of these demonstration bikeways.”

Update of the 1977 plan began 15 years later (House Resolution 346 and Senate Concurrent Resolution No. 145 in 1987, and Senate Resolution 31 in 1989) and resulted in the 1994 edition of *Bike Plan Hawaii*. Its stated purpose was “to serve as a reaffirmation of legislative mandates, statutory pronouncements, and public requests that the bicycle be more seriously considered as a viable mode of transportation as well as a positive form of recreation.” Although ISTEA had passed several years before the plan was completed, the magnitude of its impact in reorienting transportation priorities and funding potential was not yet fully realized. The 1994 plan recommended 1,309 miles of new bikeways.

What has happened since 1994? To what extent have the recommendations been implemented?

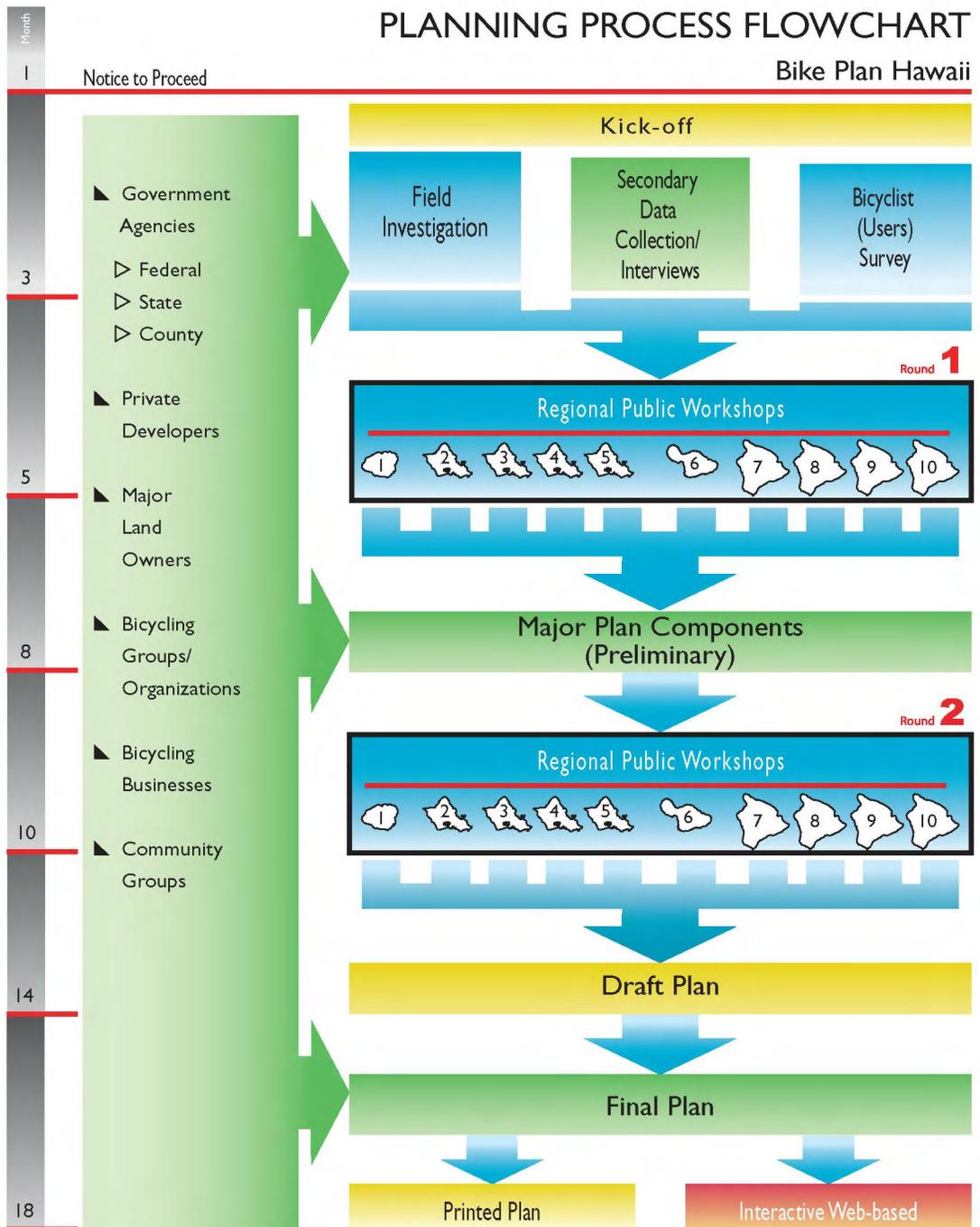
- There are 208 miles of bicycle facilities throughout the state; doubling from 103 miles in 1994.
- HDOT established the position of Bicycle and Pedestrian Coordinator in 1994.
- The City and County of Honolulu, Department of Transportation Services appointed a Bicycle Coordinator, also in 1994.
- All buses on Oahu have been equipped with bike racks. Rack usage exceeds 30,000 loadings per month. Hawaii County buses can accommodate bicycles, but advance arrangements are recommended.
- Bicycle parking in urban Honolulu has become more convenient with the installation of more than 400 bike parking racks.
- Effective January 2001, all children under 16 years of age are required by State law to wear a helmet when bicycling on a street, bikeway, or any other public property.
- Bicycling maps have been published for the islands of Oahu, Maui, and Hawaii.



1.5 HOW WAS BIKE PLAN HAWAII DEVELOPED?

Figure I-2 shows the main tasks of the planning process along a time line.

Figure I-2



Data collection. The planning effort began in June 2001 with an extensive data gathering effort. Data were collected from various sources (see Chapter 3) and all existing and proposed bikeways shown in the 1994 Plan were field-checked and videotaped.

Initial consultation. Representatives of all four County governments were briefed during the early consultation phase, including members of the Technical Advisory Committees (part of the organizational structure of the State Transportation Planning process) and the OMPO staff and Citizen Advisory Committee. These meetings were followed by more detailed, one-on-one meetings with officials in the County public works, planning, and police departments. Briefings were held for elected officials and informal meetings convened with bicycling advocate groups.

Working maps. Large-scale maps were prepared showing all existing and proposed routes.

Public Meeting and Workshop I. During November 2001, public meetings were held at ten venues on the four major islands (see Table I-1). An eleventh meeting on Molokai was held in February 2002. These events drew 159 participants, representing a diverse group of residents, bicycling advocates, owners of bicycling-related businesses, students, land developers, State and County legislators, and government officials.

The purpose of the meeting was twofold. Information about the planning process was presented during the first half. The second half was structured as a charrette or workshop with small groups adding, deleting, and revising bikeway proposals on the working maps. Participants were also asked to complete a bicycle user's survey.



Workshop I participants listen to an introductory briefing and learn about the planning process. Hilo, Hawaii.

**PROCEEDINGS OF THE TWO
ROUNDS OF PUBLIC MEETINGS
CAN BE FOUND IN THE
SUPPLEMENTAL VOLUME ON
COMMUNITY PARTICIPATION IN
BIKE PLAN HAWAII.**



Participants draw bikeway alignments and annotate maps with comments about existing bike routes and ideas for new ones. Kona, Hawaii.

Surveys. Additional information about user characteristics, needs, and preferences were obtained through three surveys: one of workshop participants, a random telephone survey, and a survey of school administrators. The findings of these surveys are presented in Chapters 3 and 4; questionnaires are found in Appendix A.



Workshop 2 participants had a chance to review and discuss the preliminary bikeway proposals. Wailuku, Maui.

All participants were given a set of self-sticking dots to indicate their preferred bikeway proposals.



Public Meeting and Workshop 2. A second round of public meetings took place in May 2002 (see Table I-1). A total of 148 persons attended the 10 workshops. Major agenda items included a review of proposed objectives, refinement of the future bikeway network, and feedback on criteria to evaluate the proposals. The interactive or workshop component of the meetings focused on maps that now contained bikeway proposals generated at the first meeting. Given the large number of possible projects and funding limitations, participants were asked to help prioritize them.

Public Review of the Draft Plan. Following the release of the Draft Plan, there will be a 30-day review period during which comments will be received from government agencies and the public. HDOT will consider all comments and provide written responses indicating what actions were taken in preparing the Final Plan.

Final Plan. After final modification of the plan, it was published in hardcopy, CD-ROM, and online formats. The plan is available at public libraries and community college and university libraries. It can also be viewed and/or downloaded from the Internet at <http://www.hawaii.gov/dot/highways/bikeped/index.htm>

Compliance with Title VI and Environmental Justice

Several measures were taken to broaden and encourage participation from minority and low-income communities.

- Public meetings convened in dispersed geographic locations throughout the state
- Notice of meetings publicized through mass media, neighborhood boards and community associations, legislators and councilmembers, bicycling advocacy groups, and flyers posted at bike shops and community bulletin boards
- Random telephone survey with respondents constituting a diverse ethnic and economic profile.

**Table I-1:
Schedule of Public Meetings-Workshops**

	Round 1	Round 2
Kauai	Lihue, November 7, 2001	Lihue, May 2, 2002
Oahu	Ko Olina, November 1, 2001	Kapolei, May 13, 2002
	Kaneohe, November 13, 2001	Kaneohe, April 30, 2002
	Aina Haina, November 14, 2001	Hawaii Kai, April 29, 2002
	Mililani Mauka, November 15, 2001	Mililani, May 14, 2002
Maui	Wailuku, November 8, 2001	Wailuku, May 1, 2002
Molokai	Kaunakakai, February 28, 2002	
Hawaii	Hilo, November 3, 2001	Hilo, May 9, 2002
	Puna District, November 3, 2001	Pahoa, May 8, 2002
	Waimea, November 5, 2001	Waimea, May 7, 2002
	Kailua-Kona, November 6, 2001	Kailua-Kona, May 6, 2002

1.6 WHAT'S NEW ABOUT BIKE PLAN HAWAII?

- Like its predecessors, *Bike Plan Hawaii* is a facilities-oriented plan, but it gives greater prominence to non-construction objectives: education, enforcement, economics, and encouragement.
- It recommends the addition of approximately 1,722 miles of new bikeways to the statewide network (compared to 1,309 new miles in the 1994 plan). The current master plan improves connectivity between existing and proposed facilities, particularly within communities, and there is a significant increase in proposed off-road paths.
- Excluded are bikeway proposals for county roads in urban Honolulu. Because the City and County of Honolulu prepared a separate *Honolulu Bicycle Master Plan* in 1999, the recommendations of this plan are folded into *Bike Plan Hawaii*.

*Bicyclist finds a shady spot to rest and take in the view.
Kona, Hawaii.*



- The section on implementation has been expanded. A wider array of potential funding sources is identified. The implementation process is discussed more thoroughly with special attention to points at which individuals and organizations can initiate, support, review, and critique bicycling programs and projects.
- The plan will be issued in print and on CD-ROMs, and it will also be available online, thereby reaching a broader audience. The website version will offer interactive features for users.

CHAPTER 2

UNDERSTANDING BICYCLE FACILITIES

2.1 TYPES OF BICYCLISTS

 f the many thousands of people in Hawaii who own bicycles, a small percentage would qualify as experienced or highly skilled bicyclists. Roadway treatments intended to accommodate bicycle use must address the needs of both experienced and less experienced riders. One solution to this challenge is to use the concept of “design cyclist” put forth by the FHWA (*Selecting Roadway Design Treatments to Accommodate Bicycles*, Publication No. FHWA-RD-92-073, January 1994).

Rider Group	Preferences	Transportation Improvements
<p>Group A: Advanced Bicyclists</p> <p>Experienced riders who can operate under most traffic conditions</p>	<ul style="list-style-type: none"> • Direct access to destinations • Operate at maximum speed with minimum delays • Sufficient roadway space or shoulder so that bicyclists and motorists can pass without altering their line of travel 	<ul style="list-style-type: none"> • Establish & enforce speed limits • Implement traffic calming • Provide wide outside lanes (urban) • Provide usable shoulders (rural)
<p>Group B: Basic Bicyclists</p> <p>Casual or new adult and teenage riders who are less confident of their ability to operate in traffic without special provisions for bicycles</p>	<ul style="list-style-type: none"> • Comfortable access to destinations • Direct route, but on low-speed, low traffic-volume streets or designated bicycle facilities • Well-defined separation of bicycle and motor vehicles or separate bike paths 	<ul style="list-style-type: none"> • Ensure low speeds on neighborhood streets • Traffic calming • Provide network of designated bicycle facilities (lanes, bike paths, bike boulevards) • Usable roadway shoulders
<p>Group C: Children</p> <p>Pre-teen riders whose roadway use is initially monitored by parents</p>	<ul style="list-style-type: none"> • Access to schools, recreation facilities, shopping, or other residential areas • Residential streets with low motor vehicle speed limits and volumes • Well-defined separation of bicycles and motor vehicles or separate bike paths 	<ul style="list-style-type: none"> • Ensure low speeds on neighborhood streets • Traffic calming • Provide network of designated bicycle facilities (lanes, bike paths, bike boulevards) • Usable roadway shoulders



Hawaii Bicycling League

For the purposes of bicycle network planning and design, bicyclists in Groups B and C are often combined, resulting in a two-tiered approach to meeting bicyclists’ needs.

Group A riders are best served by making every street as “bicycle-friendly” as possible. This may be accomplished by utilizing highway design standards that include wide curb lanes and paved shoulders to accommodate shared use by bicycles and motor vehicles. Signage can be an effective measure to inform motorists of the presence of bicyclists within the corridor. However, signage, such as “Share the Road” should only be used when appropriate roadway conditions are met.

Bicyclists cover a wide spectrum from those with significant road experience...

...to novice riders who are just learning the rules of the road.

Benefits of Bicycling

Transportation Bicycling is an easy way to complete short trips, while helping to reduce traffic congestion and parking requirements. For people with limited transportation options—those without a driver’s license or motor vehicle—bicycling can provide an important transportation option.

Health Bicycling is an excellent form of physical activity to prevent and/or control detrimental health conditions.

Economics Bicycling is business—retailers, repair shops, rentals and organized tours, and sporting events, all generate income. In addition, bicycling has the potential to attract a growing number of eco-tourists, people who want a more active vacation experience.

Community Bikeways can help define a community’s character and promote more social interaction among people who are out and about in their communities.

Environment Bicycling produces no pollution and doesn’t consume fossil fuels. The most frequent, comfortable, and practical trips for bicyclists—those under five miles—produce the greatest environmental benefits, since trips shorter than five miles are the least fuel efficient and produce the highest emissions per mile.



Dan Burden, Walkable Communities

The utilitarian bicyclist—running errands the healthy, economical, and environmentally friendly way. Honolulu, Oahu

2.2 LEVELS OF URBANIZATION IN THE BICYCLING ENVIRONMENT

Urban Setting (Cities and Towns). In an urban area, where development is relatively dense, there are many destinations within short distances of one another. The density of development creates a great potential for bicycling as a means of commuting and running errands. Places with a grid pattern of roadways benefit from more routing choices, but there are also more potential conflict points with motorists. Accordingly, the focus of the bicycle network in an urban area is to create safe and convenient routes for bicyclists to use in traveling to and from work, accessing transit, and traveling to other community destinations.

Suburban Setting. In suburban environments where development is less dense, connections to commercial areas, schools, parks, and other activity centers may be more challenging due to the distances involved. Since the 1960s, the grid system of roadway development has declined, replaced by a distinctly hierarchical road system where traffic is channeled from local roads to collectors to major arterials. Bicyclists must travel on these arterial roadways to make important connections to destinations. While the arterials usually present fewer street crossings, traffic volumes and speeds may be high. Promoting safe and efficient bicycle travel and encouraging bicycling within a community are key goals in suburban settings.

Rural Setting. In rural areas, distances between residences and destinations may be large enough to discourage bicycling as a means of transportation for all but the most avid bicyclists. Lower density is often accompanied by greater open space, which is ideal for recreational bicycling. Like beads on a string, small, rural communities are often spaced out along a major highway (for example, the belt roads and coastal highways). Residents who bicycle may need to travel along relatively busy highways to get to their local commercial center or to public facilities. In rural settings, the primary focus of the bicycle plan is both to enhance recreational opportunities that take advantage of natural or cultural assets, and to provide safe connections on the main roads.

Bikeway vs. Bicycle Facility

“**B**ikeways” and “bicycle facilities” are not used interchangeably in this document. Bikeway is a generic term referring to all types of bicycle accommodations or treatments that are linear in nature. Any street that is “bicycle friendly” contains a bikeway, but not necessarily a bicycle facility. Bicycle facility is a more restricted term and refers to a bikeway that is specifically designated for bicycle use through signs and/or pavement stencils. Bicycle facilities may be on or adjacent to the roadway (e.g., bike lanes or paved shoulders) or an independent facility (bike paths). Bicycle facilities also include non-linear improvements, such as bicycle shelters, parking, and bicycle-oriented traffic control devices.

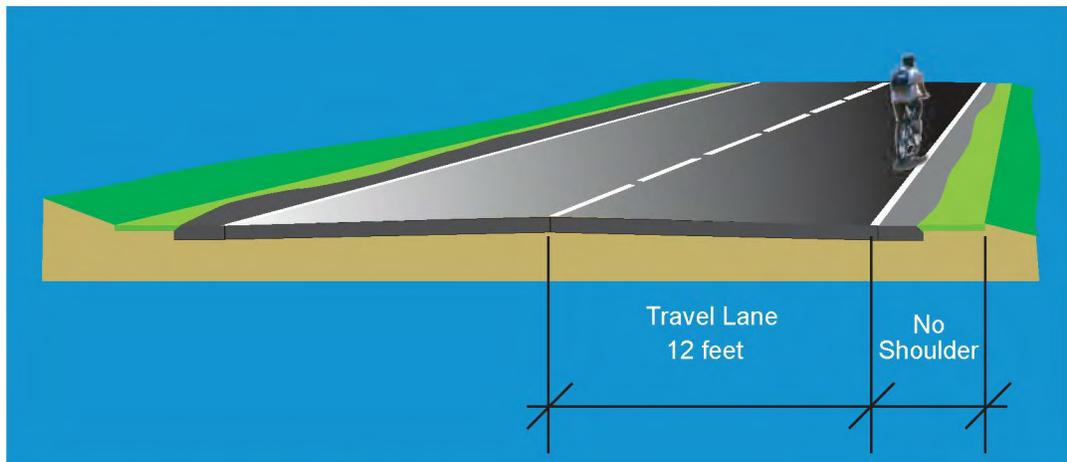
2.3 TYPES OF BIKEWAYS

Selection of facility type is generally based on an examination of the targeted user group, environmental conditions (including topography, roadway, and traffic characteristics), and capital and maintenance costs. The major types of bicycle facilities are briefly described below. See Chapter 7 for a more thorough discussion of design issues and considerations.

2.3.1 SHARED ROADWAY

Shared roadway refers to any street or highway that is open to both bicycle and motor vehicle travel, but has no special signage for bicyclists. Shared roadways typically feature lane widths that are 12 feet or less, with no shoulders (see Figure 2-1). Most bicycle travel in the U.S. now occurs on streets and highways without bicycle designations.

Figure 2-1: Shared Roadway



Bicyclist on shared roadway, Alii Drive in Kailua-Kona, Hawaii.



Street with Wide Curb Lanes

One type of shared roadway is a street with wide curb lanes. Wide curb lanes (or wide outside lanes) are through traffic lanes farthest to the right and wider than 12 feet. Fourteen feet—usually measured from the lane stripe to the edge of the gutter pan—is the minimum width necessary to allow a bicyclist and motorist to share the same lane without coming into conflict, changing lanes, or potentially reducing the motor vehicle capacity of the lane.



Street with Paved Shoulders

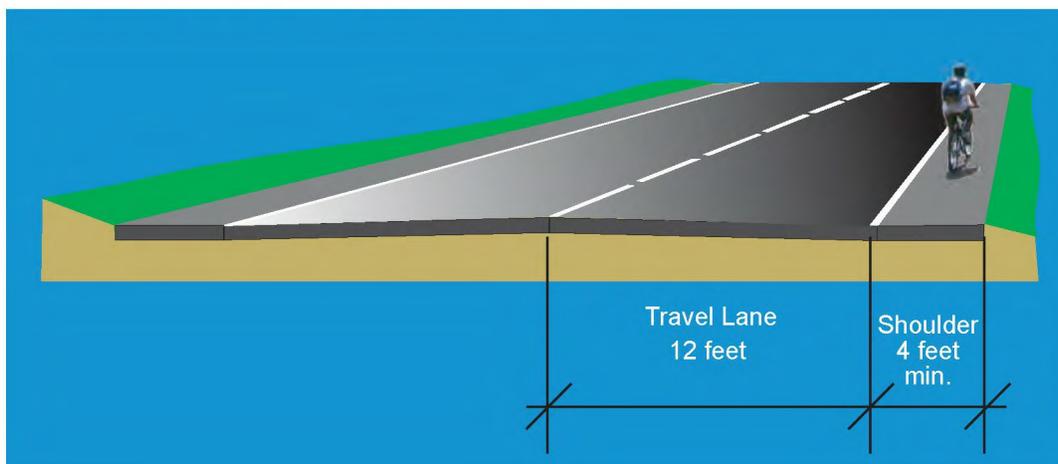
Adding or improving paved shoulders is often the best way to accommodate bicyclists in rural areas. Paved shoulders should be at least 4 feet to accommodate bicycle travel (Figure 2-2). A shoulder width of 5 feet is recommended from the face of guardrails, curbs, or other roadside barriers.



Diamond Head Road has a wide curb lane. Waikiki, Oahu.

Paved shoulder along Kalanianaʻole Highway, near Sandy Beach, Oahu.

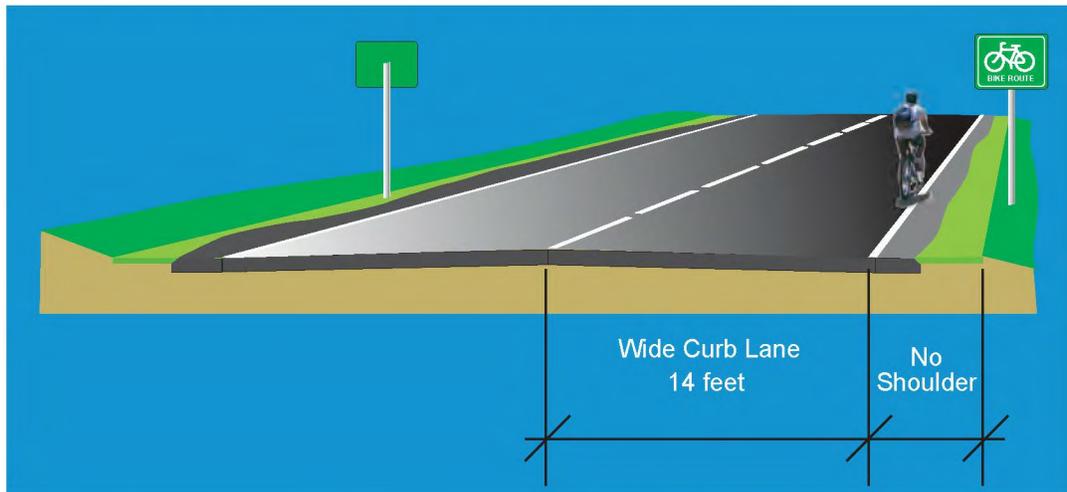
Figure 2-2: Shared Roadway with Paved Shoulder



2.3.2 SIGNED SHARED ROADWAY

A signed shared roadway is a street or highway that is specifically designated by signs as a preferred route for bicycle use. The *Guide for the Development of Bicycle Facilities*, prepared by the American Association of State Highway and Transportation Officials (AASHTO), 1999, lists several criteria to consider prior to signing a route (see also Section 7.2.3, below). Signed facilities generally should meet or exceed widths of 14 feet for curb lanes (Figure 2-3) or 4 feet for paved shoulders (Figure 2-4). In limited cases, mitigating factors may result in the designation of a signed shared roadway where these dimensions are not met.

Figure 2-3: Signed Shared Roadway with Wide Curb Lane

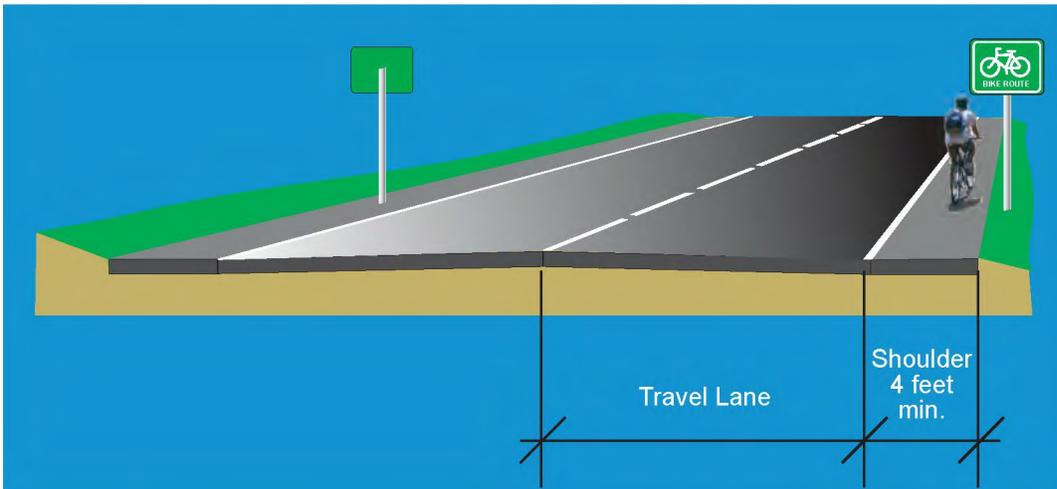


*Wide outside lane
(without parking)
on Hamakua Drive.
Kailua, Oahu.*



Wide outside lane (with parking) on the McCully Street Bike Route. Honolulu, Oahu.

Figure 2-4: Signed Shared Roadway with Paved Shoulder



Whitmore Avenue is a signed shared road with paved shoulder. Whitmore Village, Oahu.

2.3.3 BIKE LANE

Bike lane refers to a section of roadway that has been designated by striping, signing, and/or pavement markings for the preferential or exclusive use by bicyclists. It delineates the right-of-way assigned to bicyclists and motorists; in part, to provide for more predictable movements by each.



Bike lane on recently completed Kuala Street through Manana, Pearl City, Oahu.

(right) Bike lane with parking on University Avenue, Honolulu, Oahu.

As shown in Figure 2-5, the recommended width for a bike lane is 5 feet (4 feet minimum). With on-street parking, the minimum width is 5 feet (Figure 2-6).



Figure 2-5: Bike Lane

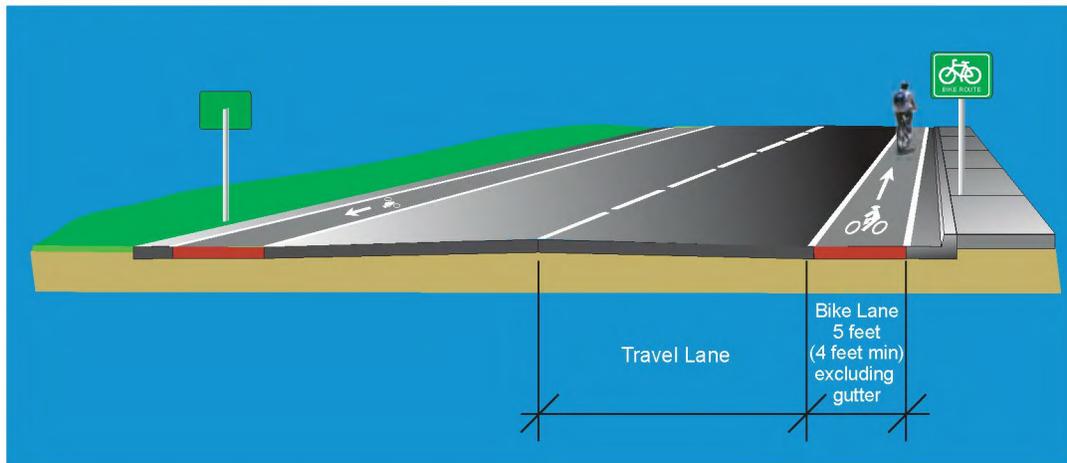


Figure 2-6: Bike Lane with On-street Parking



2.3.4 SHARED USE PATH

Shared use path refers to a bikeway that is physically separated from motorized vehicular traffic by an open space or barrier, and is either within the highway right-of-way or has an independent right-of-way. Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers, and other non-motorized users. Under most conditions, the recommended paved width for a two-directional shared use path is 10 feet (Figure 2-7). Under certain conditions, such as substantial use by different types of users, use by maintenance vehicles, and/or steep grades, it may be necessary or desirable to increase the width to 12 feet, or even 14 feet.

Figure 2-7: Shared Use Path



Shared use paths are popular with the general public in Hawaii, as seen in the survey findings presented in Chapter 3. This preference is echoed in surveys nationwide. Paths are a valuable addition to the highway system and to the range of facilities available to planners and engineers seeking to improve conditions for all categories of bicyclists. They serve both a transportation and recreation function and can be significant generators of bicycle use.



However, paths require special considerations in terms of location and design. In particular, paths are most appropriate for long, continuous routes with minimal vehicular cross-flows (driveways or intersections). They can also provide good access to destinations not otherwise available to bicyclists, such as short-cuts in the street network.

Shared use path through Kailua Beach Park, Kailua, Oahu.

Liability Issues Related to Off-road Bikeways

In survey after survey, not only in Hawaii, but across the country, the general public tends to favor bike paths over other types of bikeways. Paths are used not only for bicycling, but also for walking, jogging, and in-line skating, by people in wheelchairs, and sometimes equestrians.

With all these uses have come a host of concerns about liability. Public agencies that are considering building a shared use path may worry about a user being injured. Similarly, private landowners who own land adjacent to a path may be concerned about users wandering off the facility, onto their land, and injuring themselves or causing property damage. Landowners who may want to open their land for recreational use, or provide an easement over their land, may have reservations about the potential liability of doing so.

Hawaii's Recreational Use Statute, Chapter 520, Hawaii Revised Statutes (HRS), substantially limits public and private landowner liability. The intent of this law is to protect landowners who want to open their land to the public for recreation free of charge. Private landowners who have land adjacent to paths are also protected by trespassing laws. Adjacent landowners generally are not at risk as long as they do not engage in "willful and wanton misconduct" against trespassers, such as recklessly or intentionally creating a hazard.

Chapter 520, HRS, is not applicable to public lands. In general, the State and Counties "self-insure" against tort claims arising from bicycle accidents. Payments on tort claims from bicycle accidents on HDOT facilities are made from the State highway fund.

While concerns about liability are understandable, real-world experience with thousands of miles of paths and trails nationwide have shown that liability exposure can be minimized through appropriate legal protection and proper design, maintenance, and management.

Useful Risk Management Strategies

During design and development:

- Develop a list of potential hazards
- Design and locate the path such that dangerous locations are avoided
- Develop a list of permitted path uses and the risks associated with each
- Make it clear that users are not invited onto the adjoining land. This can be accomplished through signs, landscape screening, or fencing
- If a hazardous condition exists and cannot be mitigated, signs should be developed to warn users of the hazard
- Identify applicable laws
- Design and construct the pathway in accordance with recognized guidelines

After path is open for use

- Conduct regular inspections and monitor conditions
- Document the results of the inspections and correct hazards in a timely fashion
- Adhere to maintenance standards and keep written records
- Maintain a plan for handling medical emergencies

Source: Rail-Trails and Liability: A Primer on Trail-related Liability Issues and Risk Management Techniques by Hugh Morris, Rails-to-Trails Conservancy in cooperation with the National Park Service, Rivers, Trails and Conservation Assistance Program, September 2000.

CHAPTER 3

CURRENT BICYCLING CONDITIONS

3.1 BICYCLE REGISTRATION AND LICENSING

The State of Hawaii requires the registration and licensing of all bicycles with a wheel diameter of 20 inches or more (§249-14, HRS). Effective January 1, 1999, the registration program shifted from a biennial process (once every two years), to a \$15.00 one-time or permanent registration process (see Table 3-1). Registration is optional for bicycles with wheels less than 20 inches in diameter, though it is recommended as a means of facilitating the return of recovered stolen bicycles. Registration of new bicycles is handled by dealers at the point of sale. Transfer of ownership must be reported and costs \$5.00. All fees are deposited in a Bikeway Fund that is administered by the county in which the monies are collected (see Chapter 8).

Table 3-2 shows bicycle registration data for 2000 and 2001. Although data for prior years can be found in the *State of Hawaii Data Book*, they reflect different registration rules and apparent differences from county to county about what data to report (in some cases, the aggregate number of licensed bicycles, while, in other cases, the number of licenses issued in a given year). This variability renders the historic data unsuitable for trend analysis. However, since 2000, the data appear to be a consistent reflection of annual registration activity. In 2000, there were a total of 31,353 new registrations statewide. The number of new registrations in 2001 increased by 757 (2.4%) for a total of 32,110 statewide.

Theoretically, the current registration system will let planners know how many new bicycles are entering the pool of bicycles on each island. Over time, this will provide an increasingly accurate picture of the total number of bicycles in the state, with the following caveats:

- undercounting of bicycles with wheel diameters under 20 inches, primarily children's bikes
- undercounting of bicycles brought into the state with other household goods and unregistered because of unfamiliarity with the State's licensing requirement
- overcounting of bicycles that are destroyed or "junked"

Accuracy would be further improved if registration data on bicycles and mopeds were reported separately.

**Table 3-1
History of Bicycle Registration in Hawaii**

Prior to November 1, 1988	Annual registration	\$3 for bicycles with wheel diameter at least 16"
November 1, 1988– December 31, 1998	Biennial registration	\$8 for bicycles with wheel diameter at least 20"
Beginning January 1, 1999	Permanent (one-time) registration	\$15 for bicycles with wheel diameter at least 20"

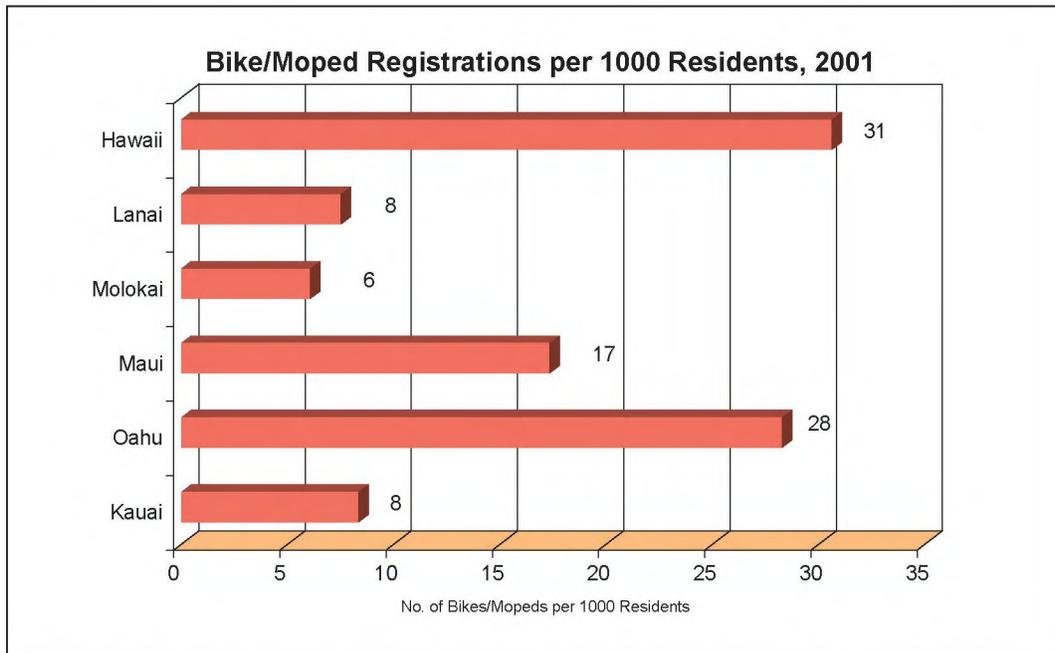
**Table 3-2
Bicycle and Moped Registrations by Island, 2000–2001**

	2000		2001	
	Registrations	Percent	Registrations	Percent
Kauai	1,095	3.5%	488	1.5%
Oahu	21,842	69.7%	24,777	77.2%
Maui	3,485	11.1%	2,225	6.9%
Molokai	183	0.6%	45	0.1%
Lanai	55	0.2%	24	0.1%
Hawaii	4,693	15.0%	4,551	14.2%
State Total	31,353	100.0%	32,110	100.0%

Source: 2001 State Data Book, Department of Business, Economic Development, and Tourism. Verification by correspondence from County of Kauai, City and County of Honolulu, and County of Hawaii.

Although the City and County of Honolulu registered the largest number of bicycles and mopeds, when the data are standardized, the highest proportion of new registrations occurred on the island of Hawaii. As shown in Figure 3-1, there were 31 new registrations per 1,000 residents on the Big Island, compared to 28 on Oahu. Registrations were also relatively high on Maui at 17 per 1,000 residents.

Figure 3-1



Source: 2001 State Data Book, Department of Business, Economic Development, and Tourism. Ratios calculated based on number of bicycle/moped registrations in 2001 and population counts as of the 2000 census.

3.2 INVENTORY OF BICYCLING FACILITIES

Statewide, there are approximately 208 miles of bicycle facilities. Of these, approximately half (101 miles) are signed shared roads (formerly called “bicycle routes”). In addition, there are approximately 59 miles of bike lanes and 48 miles of shared use paths. Oahu has the largest number of bicycle facilities (98 miles), while Molokai and Lanai have no bicycle facilities in the official inventory.

Bicycle facilities have almost doubled since 1994. The largest mileage increase occurred on Oahu where 38 miles of bike facilities were added since the last plan was published. The largest percentage gains were experienced on Kauai (up 484%, from 3.8 miles in 1994 to 22.2 miles in 2002) and the Big Island (up 281%, from 7.2 miles in 1994 to 27.4 miles in 2003). On Maui, bicycle facility mileage increased from 33.8 miles to 60.4 miles, an increase of 79%. All islands also saw significant improvements in highway shoulders, but these changes are not reflected in the official inventory.

**Table 3-3
Inventory of Bicycle Facilities in the State of Hawaii, 2003**

Island	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)
Kauai	14.5	1.2	6.5	22.2
Oahu*	30.1	33.6	34.3	98.0
Maui	37.8	21.6	1.0	60.4
Hawaii	18.3	2.8	6.3	27.4
Statewide	100.7	59.2	48.1	208.0

* Includes the Honolulu Primary Urban Center (PUC)

Source: State Department of Transportation; Field verification and update by Kimura International, Inc.

**Table 3-4
Bicycle Facility Miles Added Since the 1994 Plan**

Island	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)
Kauai	11.7	1.2	5.5	18.4
Oahu*	12.5	13.0	13.0	38.5
Maui	5.8	19.8	1.0	26.6
Hawaii	11.1	2.8	6.3	20.2
Statewide	41.1	36.8	25.8	103.7

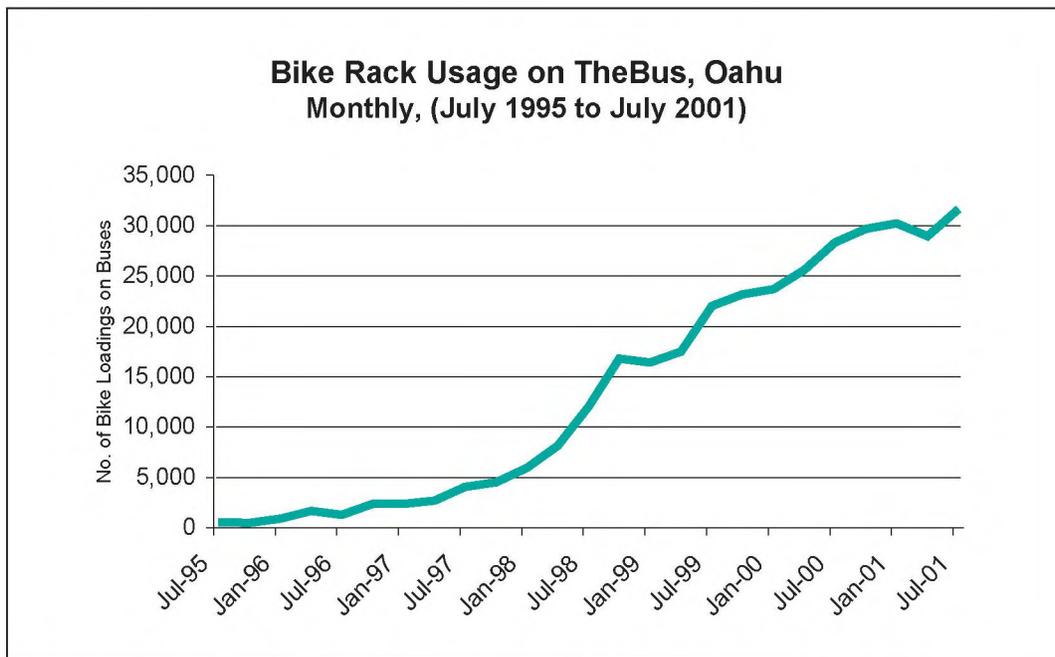
* Includes the Honolulu Primary Urban Center (PUC)

Source: Kimura International, Inc.

3.3 BICYCLES ON BUSES

One of the most significant gains accomplished since 1995 has been the modal integration of bicycle and bus transportation on Oahu. Figure 3-2 shows a sharp climb in the number of bicycle loadings onto buses between July 1995 and July 2001. Although the labels on the horizontal axis of the chart are shown in six-month intervals, the line represents monthly data. During the six-year period examined, bike rack usage increased from virtually zero to more than 30,000 per month. According to bus officials, the explanation is simple: as more buses were outfitted with bike racks, more bicyclists started using them.

Figure 3-2



Source: Department of Transportation Services, City and County of Honolulu, 2001

3.4 BICYCLE ACCIDENTS

The following charts contain data for major traffic accidents involving bicycles. A major traffic accident is an accident that results in death, injury, or property damage of \$3,000 or more. The threshold for property damage only (PDO) accidents increased from \$1,000 to \$3,000 in 1995.

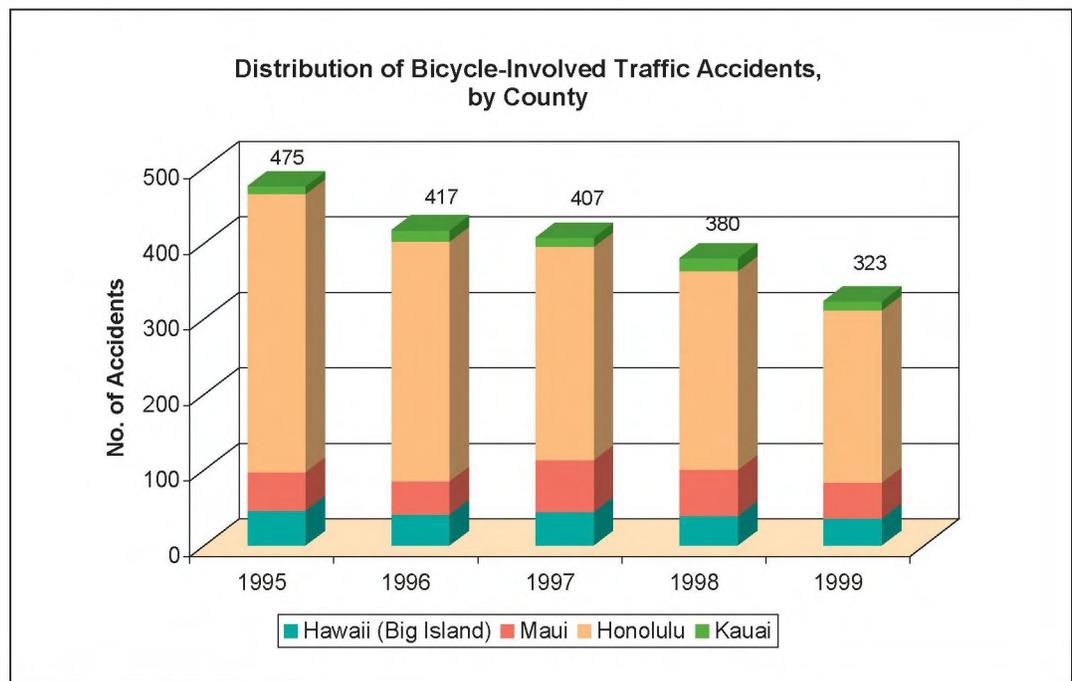
For the state as a whole, the number of major traffic accidents involving bicycles declined steadily from 1995 to 1999. There were 475 accidents in 1995 compared to 323 in 1999 (see Table 3-5, Figure 3-3). The decline was most noticeable on Oahu. Although the most populous island experiences the largest number of accidents (228 in 1999), the number of accidents dropped each year over the 5-year period. Accident numbers fluctuated in the other counties. Maui experienced the largest fluctuation, ranging from a low of 44 major accidents in 1996 to 69 the following year. Accident data are disaggregated by type in Table 3-6.

Table 3-5
Major Traffic Accidents Involving Bicycles, by County, 1995-1999

County	1995	1996	1997	1998	1999
Kauai	10	15	12	17	12
Honolulu	368	317	282	263	228
Maui	51	44	69	61	47
Hawaii	46	41	44	39	36
Statewide	475	417	407	380	323

Source: State of Hawaii, Department of Transportation

Figure 3-3



Source: State of Hawaii, Department of Transportation

**Table 3-6
Detailed Accident Breakdown by County, 1995–1999**

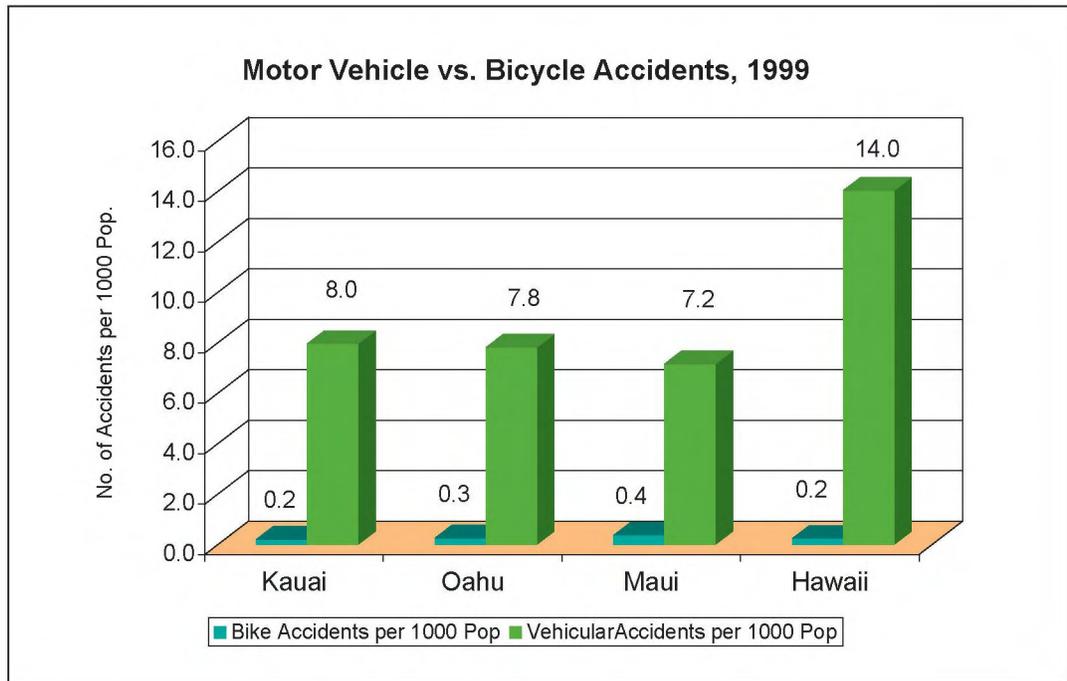
	Year	Fatal	Injury	PDO*	Total
Kauai	1995	1	9	0	10
	1996	0	15	0	15
	1997	1	10	1	12
	1998	0	17	0	17
	1999	0	11	1	12
Honolulu	1995	4	354	10	368
	1996	3	311	3	317
	1997	0	277	5	282
	1998	0	258	5	263
	1999	0	223	5	228
Maui	1995	0	51	0	51
	1996	2	42	0	44
	1997	0	69	0	69
	1998	1	60	0	61
	1999	1	46	0	47
Hawaii	1995	0	46	0	46
	1996	0	39	2	41
	1997	0	43	1	44
	1998	0	39	0	39
	1999	0	34	2	36

* PDO = Property Damage Only

Source: State of Hawaii, Department of Transportation

Figure 3-4 shows that bicycling in Hawaii is a relatively safe activity. Accident rates range from 0.2 to 0.4 per 1,000 residents. “Per capita” rates of bicycle accidents are not ideal measures—much preferred would be an indication of bicycle accidents relative to bicycle miles ridden or some other measure of exposure. Because bicycle use is less common than automobile use, it is not surprising that the likelihood of being in a motor vehicle accident is higher. However, a key comparison in Figure 3-4 is the ratio for Oahu compared to the other islands. By observation, bicycles are ridden more frequently on Oahu (i.e., exposure is higher), yet accidents occur at about the same rate as the other islands.

Figure 3-4



Source: State of Hawaii, Department of Transportation, 2001

3.5 USER SURVEYS

3.5.1 SURVEY OF WORKSHOP PARTICIPANTS

During the first round of community workshops, held in November 2001, participants were asked to complete a one-page questionnaire (see Appendix A). 118 completed questionnaires were collected after nine of the workshops and two more were mailed back for a total of 120 usable questionnaires and a response rate of 82%¹. The findings of this survey represent the views and opinions of those who filled out the questionnaire and cannot be generalized to the larger community. Nevertheless, the results help to understand the concerns and preferences of one segment of the bicycle-riding public.

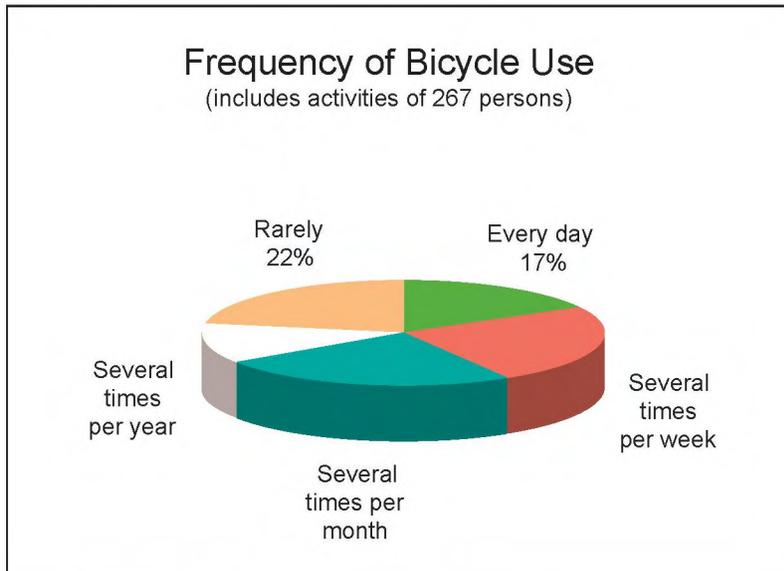
The 120 respondents who completed questionnaires reported ownership of 368 bicycles. The pool of respondents included 6 households with zero bicycles. The remaining 114 households average 3.2 bicycles per household.

¹ Participants were asked to complete one questionnaire per household. To the extent that more than one household member was present at the workshop, the response rate will inevitably be less than 100%. Because the Puna workshop was cancelled due to no-shows, no questionnaires are available from this venue.

Frequency of Bicycle Use

Respondents were asked to describe how frequently members of their household ride their bicycles—including themselves and three other members. Using this querying technique, the survey obtained information on 267 household members. Of these, 107 persons or 40% ride their bicycles several times a week, if not every day (Figure 3-5). Another 62 persons (24%) use their bicycles several times a month. Overall, more than 3 out of 5 household members are out bicycling at least once a month. At the same time, 1 out of 5 rarely rides a bike.

Figure 3-5



Source: Data collected during Round 1 series of public workshops.

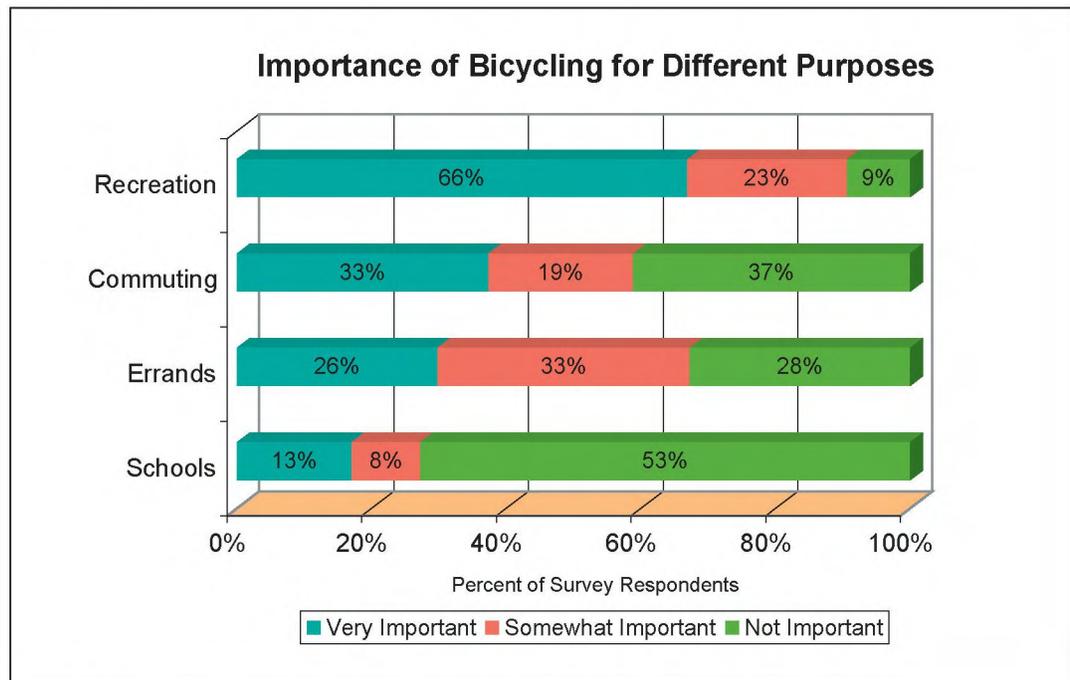
Purpose of Bike Use

Why are people on their bikes? By far, recreation was cited most frequently as the reason why people use their bicycles (Figure 3-6). Fully 90% of respondents said that bicycling is an important recreational activity within their household. A third of all respondents reported that bicycling is *very important* for purposes of commuting to work. Another 19% of respondents said that bicycling is *somewhat important* for commuting purposes. Adding these two categories, more than half of the respondents indicated that household members use bicycles for commuting to some extent.

Although only one-quarter of the respondents reported that bicycling is *very important* for shopping and other errands, when combined with respondents who said that bicycling is *somewhat important* for this purpose, almost 60% of the represented households use bicycles for errands at least occasionally.

The lowest category of bicycle use is for commuting to school with 21% of respondents indicating that bicycling is either *very important* or *somewhat important* in traveling to schools. In part, the low percentages of use in this category may reflect the fact that, for the most part, adults completed the questionnaire. Alternatively, the low percentages may reflect the low density of development in many workshop regions (including the neighbor islands and suburban Oahu). Since low-density development does not have the same dampening effect on commuting and errands, the results suggest that children are not bicycling to the extent that adults are, or face different constraints than adults.

Figure 3-6



Source: Data collected during the Round I series of public workshops.

Inter-island Differences

Are there different patterns of bicycling use across the four major islands? There are slight variations, as seen in Table 3-7. Bicycling on Oahu is slightly less important across the board. Respondents on Kauai and Maui, on the other hand, expressed relatively strong bike usage—notably for running errands on Kauai and for going to school on Maui. For recreational purpose, the island breakdown shows consistently high responses for the importance of bicycling.

Table 3-7
Percentage of Respondents who Feel that Bicycling is “Very Important” or “Somewhat Important” for Various Purposes

	Kauai	Oahu (Rural/Suburban)	Maui	Hawaii
Commuting to School	17%	18%	31%	19%
Errands	75%	48%	69%	58%
Commuting to Work	67%	42%	69%	51%
Recreation	92%	82%	100%	90%
Total Number of Respondents	12	33	16	59

Source: Data collected during Round 1 series of public workshops.

What do People Like about Bicycling in their Community?

Respondents were asked to write in responses to this open-ended question. Responses were post-coded, grouped by similarity, then ranked by frequency as shown in Table 3-8. The largest number of respondents—25 or 21%—stated that bicycling is beneficial as an alternative form of transportation, with the related points that bicycles are cheaper to operate than cars, better for the environment, and sometimes a faster means of getting to desired destinations. Exercise and fitness were identified by 20 respondents (17%). Also prominent, were responses related to Hawaii’s favorable environment, including the opportunity to be outdoors, the scenic beauty found in many communities, and good weather. Several people mentioned that their neighborhoods are particularly conducive to bicycling because there is little conflict with cars and they enjoy plenty of road space.

Table 3-8
What Respondents Like about Bicycling

	Number of Respondents	Percent of Respondents
Alternative transportation	25	21%
Exercise	20	17%
Being outdoors	14	12%
Enjoying scenery	14	12%
Low conflict with cars	11	9%
Plenty of road space	9	8%
Good weather	8	7%

Note: Percentages based on 120 completed questionnaires. Question was open-ended. Respondents were allowed to write multiple responses that were subsequently post-coded. Therefore, the total may exceed 100%.

Source: Data collected during Round 1 public workshops.

What Problems do Bicyclists Face in their Community?

Another open-ended question asked respondents to identify problems or barriers for bicyclists. In general, this question elicited a greater number of comments than the previous question, and a higher number of repeats among the comments. Topping the list of problems (Table 3-9) is the lack of road space, including narrow roads and inadequate shoulders, mentioned by 45 persons (38%). Heavy traffic volumes and high speeds, leading to perceived danger, were expressed by 23 persons (19%). A related issue was lack of off-road facilities or bike paths, that respondents felt would provide a safer bicycling environment. 15 persons reported poor road maintenance as a hazard for bicyclists, and 12 persons each mentioned hostile or aggressive drivers and obstructions in the bikeway, such as signs and parked cars.

Table 3-9
Problems Respondents Face when Bicycling

	Number of Respondents	Percent of Respondents
Lack of road space	45	38%
High traffic volume/speed	23	19%
No off-road facilities (“paths”)	19	16%
Poor road maintenance	15	13%
Hostile drivers	12	10%
Obstructions	12	10%

Note: Percentages based on 120 completed questionnaires. Question was open-ended. Respondents were allowed to write multiple responses that were subsequently post-coded. Therefore, the total may exceed 100%.

Source: Data collected during Round 1 public workshops.

Other Concerns

Finally, respondents were asked to write down concerns that might be related to any of the 5 “E”s—engineering, education, enforcement, economics, and encouragement. The comments in this section tended to be more prescriptive in nature. Accordingly, the categories in Table 3-10 are written in the form of recommended changes. 25 people wanted better education of motorists and bicyclists about the rules of the road. 16 people would like to see design guidelines that provide adequate bike facilities (of sufficient width) and would like these guidelines attached to new urban development. 13 people raised the need for increased political commitment and funding to implement bike proposals. Ten people focused specifically on the desirability of more bike paths.

Table 3-10
Other Bicycling Concerns

	Number of Respondents	Percent of Respondents
Educate motorists and bicyclists about traffic laws	25	9%
Develop design guidelines for bike facilities	16	6%
Increase political commitment for bike improvements	13	5%
Build more bike paths	10	4%

Note: Percentages based on 120 completed questionnaires. Respondents could write multiple comments to this was an open-ended question; therefore, the total may exceed 100%.

Source: Data collected during Round 1 public workshops.

3.5.2 TELEPHONE SURVEY

To broaden the population base from which bicycle user data was obtained, a telephone survey was conducted in February 2002. The telephone survey reached a cross-section of 402 residents on the islands of Oahu, Kauai, Maui and the Big Island. On Oahu, the survey was limited to households in the Leeward, Central, Windward, and East Honolulu regions and excluded Urban Honolulu. The survey's geographic coverage corresponded to the scope for updating *Bike Plan Hawaii*.

The final results can be generalized *only* to the surveyed areas as a whole. For the total sample of 402, the maximum sampling error is +/- 4.9% at a 95% confidence level.

Sampling was proportionate to each area's representation in the identified population, as follows:

	% Target Population	Final Number of Interviews
Kauai	6%	25
Oahu (selected areas)	59%	237
Maui	15%	59
Hawaii (Big Island)	20%	81

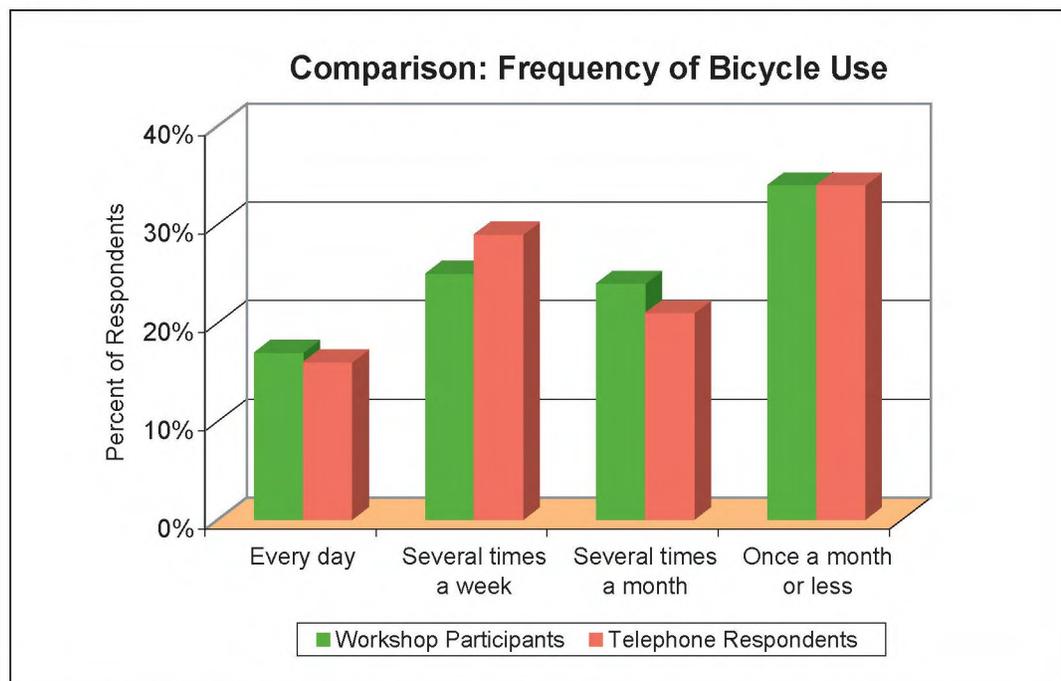
Field dates for the telephone survey were February 10 to 13, 2002. Interviews were based on a questionnaire with interviews averaging 10 minutes. (The questionnaire is reproduced in Appendix A.) The sampling frame was generated at random by the survey research firm using a random digit dialing program. This random-digit dialing method includes unlisted, as well as listed telephone numbers, helping to promote an unbiased sample. All interviewing was conducted from the Ward Research Calling Center. Interviews were conducted between the hours of 5:00 p.m. and 9:00 p.m. on week nights and 9:00 a.m. to 9:00 p.m. on weekends.

The questionnaire used in the telephone survey contained several questions that were identical to the survey administered to workshop participants. This enables a comparison between workshop participants (presumably those with a higher intrinsic interest in bicycling) to a broader sample of the state's population. Thus several charts below show responses from the two surveys side by side.

Frequency of Bicycle Use

There is a high degree of similarity in the frequency of bicycle use between workshop participants and telephone survey respondents (Figure 3-7). In both groups, the same percentage of people (66%) reported that they ride their bicycles regularly—at least several times a month. Telephone respondents were slightly less likely to ride every day; however, they were slightly more likely to ride several times a week.

Figure 3-7

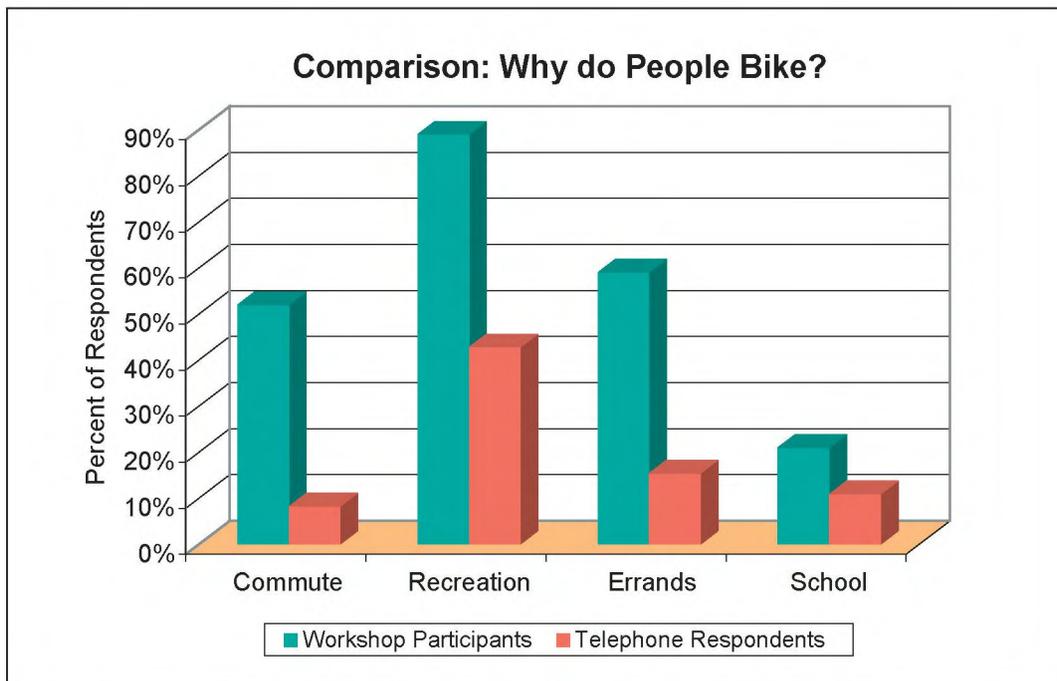


Source: Kimura International, Inc., 2002

Purpose of Bicycle Use

The survey asked respondents to indicate the importance of bicycling for four different purposes: commuting to work, recreation, running errands, and commuting to school. Telephone respondents were most likely to say that bicycling is *important* or *somewhat important* for recreational purposes, and least likely to say that bicycling is *important* or *somewhat important* for commuting to work, as seen in Figure 3-8. Across all four categories, bicycling is less important for telephone respondents than for workshop participants. For example, in the recreation category, approximately 43% of telephone respondents said that bicycling is *very important* or *somewhat important*, compared to 89% of workshop participants.

Figure 3-8

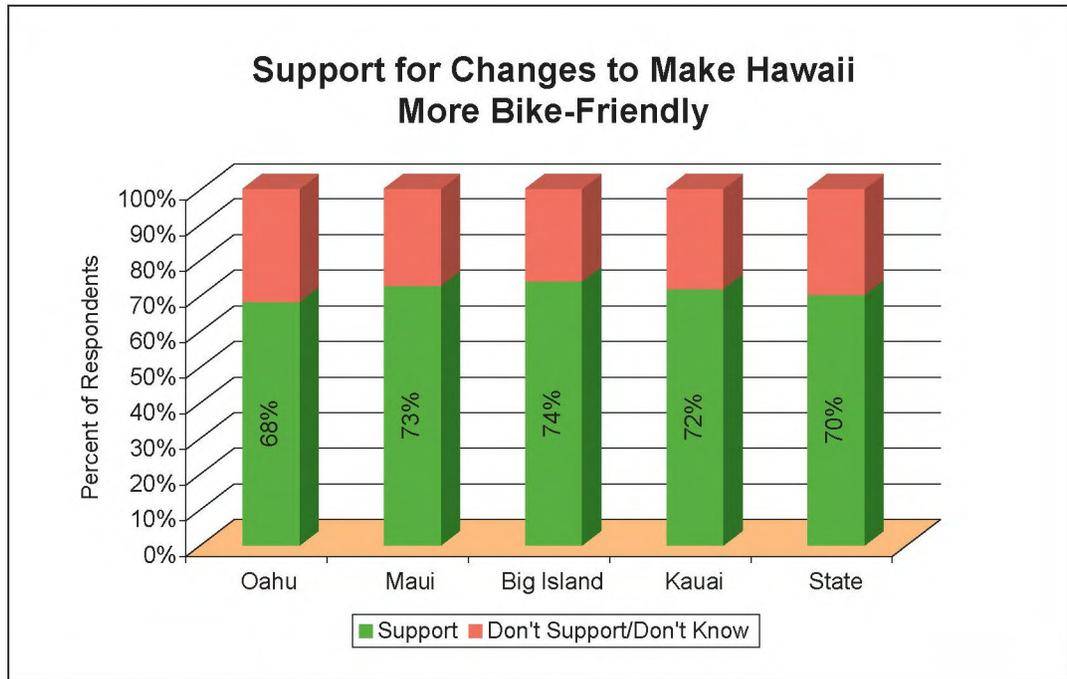


Source: Kimura International, Inc., 2002

Support for Improvements to the Bicycling Environment

Telephone respondents were asked whether they would support changes to make Hawaii more “bicycle friendly.” Seventy percent of all respondents replied affirmatively. In Figure 3-9, only the bar farthest to the right (representing the total sample) is statistically significant—in other words, there is a 95% probability that the result is non-random and the finding can be generalized to the study area as a whole. The same claim cannot be made for the island-specific results, nevertheless it is interesting to note that the island-by-island breakdown shows a consistently high degree of support for bicycle improvements among the survey respondents. A follow-up question asked if the respondent would support the use of government funds to improve the bicycling environment. Overall, 73% of respondents supported public funding.

Figure 3-9



Source: Kimura International, Inc., 2002

When asked what type of changes are desired, and presented with a list of 10 possible ideas, the top 5 ideas that generated the strong support among telephone respondents were:

- Maintenance
- Bike education
- Bike paths
- Bike parking
- Enforcement

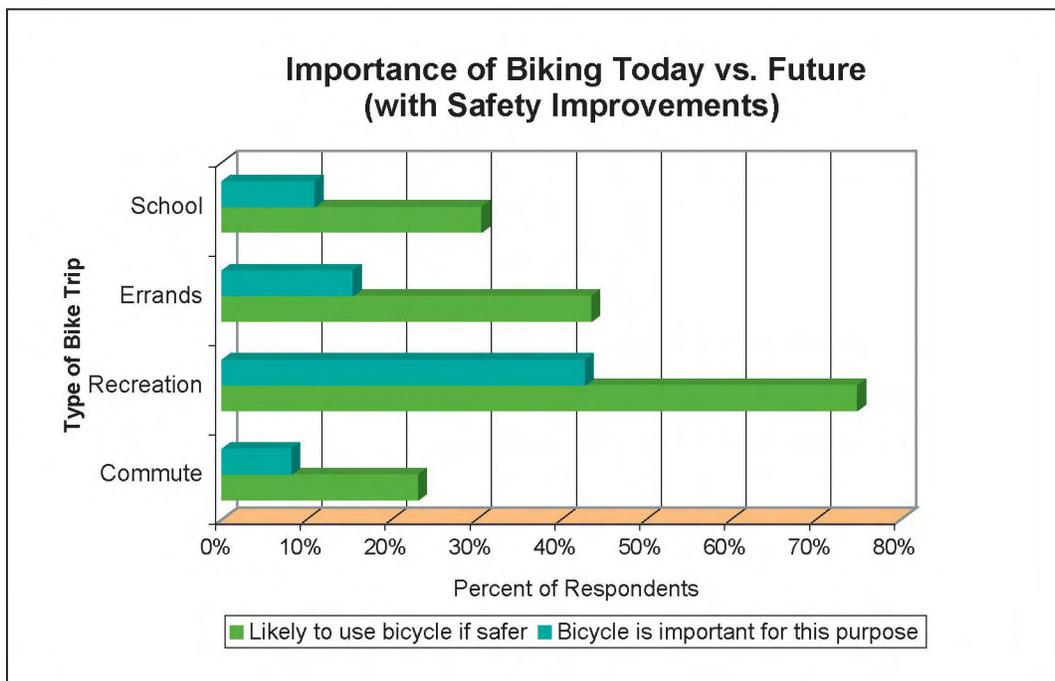
The island-specific tallies are not statistically significant and, therefore, the results only represent the views of the respondents. Nevertheless, they show interesting patterns with maintenance, bike paths, and bike parking mentioned regularly. On the other hand, there were differences in the priorities expressed. Kauai respondents tended to favor stronger enforcement of traffic laws and improved signage, while Maui and Big Island respondents tended to rank bicycle education more highly.

Kauai	Oahu	Maui	Hawaii
● Maintenance	● Maintenance	● Maintenance	● Maintenance
● Enforcement	● Bike Paths	● Bike Education	● Bike Education
● Bike Paths/Signage	● Bike Parking	● Bike Paths/Parking	● Bike Paths/Parking

Potential Effects of Bicycling Improvements

Would improvements to the bicycling environment make any difference? Respondents were asked: If bicycling were a safer mode of transportation, how likely would you be to use a bicycle more frequently? In Figure 3-10, the responses to this question (an indicator of possible, future behavior) were juxtaposed against the responses shown previously in Figure 3-8 (an indicator of current behavior). With improved conditions for bicyclists, the likelihood of future bicycle use in each of the four categories is significantly higher than current use. Twice as many respondents expressed an inclination toward bicycling for commuting and running errands in the future, than they do today. In the area of recreational trips, 75% stated that they are *very likely* or *somewhat likely* to use the bicycle in the future compared to 43% today.

Figure 3-10



Source: Kimura International, Inc., 2002

3.6 CENSUS DATA ON BICYCLE COMMUTERS

The 2000 U.S. Census contains data about how workers 16 years and older travel to work. Statewide, 4,888 workers (less than 1% of all workers) use bicycles as their primary means of transportation. The data also show that there are concentrations of bicycling commuters in census tracts with lower median household incomes (see Table 3-11). In other words, residents in lower income neighborhoods tend to rely on bicycles for commuting purposes more heavily than residents in higher income neighborhoods. For example, in Maui County, 47% of the population lives in census tracts with median household incomes below the county median; however, these census tracts contain 70% of the county's bicycle commuters. Similarly, lower income census tracts in Hawaii County and in the suburban and rural areas of Honolulu County also contain higher shares of bicycle commuters; Kauai County is the only exception to this pattern.

Table 3-12 identifies the census tracts with ten or more bicycle commuters. The census tracts in this table are listed without regard for income level.

Table 3-11
Bicycle Commuters Categorized by Census Tract
Median Household Income Level, 2000

Median Household Income of Census Tracts	Bicycle Commuters		Population	
	Number	%	Number	%
Kauai County	93		58,463	
Census Tracts Below County Median	44	47%	31,008	53%
Census Tracts At or Above County Median	49	53%	27,455	47%
Honolulu County (Suburban and Rural Areas Only)	1,208		456,055	
Census Tracts Below County Median	795	66%	131,544	29%
Census Tracts At or Above County Median	413	34%	324,511	71%
Maui County	756		128,094	
Census Tracts Below County Median	527	70%	59,920	47%
Census Tracts At or Above County Median	229	30%	68,174	53%
Hawaii County	206		148,677	
Census Tracts Below County Median	120	58%	63,786	43%
Census Tracts At or Above County Median	86	42%	84,891	57%

Table 3-12
Census Tracts with 10 or More Bicycle Commuters

Kauai County		Honolulu County (Suburban/Rural)		Maui County		Hawaii County	
Census Tract	No.	Census Tract	No.	Census Tract	No.	Census Tract	No.
Hanalei	26	Laie	188	Lahaina Town	198	Keaau-Volcano	62
Koloa-Poipu	22	Mokapu-West	129	North Kihei	98	Kaunakakai-Kealahou	29
Puhi-Hanamaulu	22	Mokapu-East	109	South Kihei	92	Hilo: Puueo-Downtown	20
Kekaha-Waimea	15	Schofield: Kolekole Ave	75	Honokahua	88	Kahului-Kaunakakai	20
		Menohar Street	72	North Lahaina	41	Hilo: Villa Franca-Kaiko'o	12
		Kalaheo Avenue	65	Wailea	37	Kailua	11
		Ewa Beach	52	West Kahului	30	Hilo: Puainako	11
		Waimea-Kahuku	36	East Molokai	21	Hualalai	11
		Kailua Mall	25	South Lahaina	21	Papaikou-Wailea	10
		Enchanted Lakes	25	Haiku-Pauwela	20		
		Beaver Road	24	Northeast Kahului	17		
		Haleiwa-Kawailoa	22	Lanai	16		
		Iroquois Point	22	Southeast Kahului	15		
		Mokapu-East	22	East Central Wailuku	13		
		Schofield: Foote Ave	21	Paia	13		
		Waianae Kai	20	West Central Wailuku	13		
		Barbers Point	19				
		Oneawa-Kawainui	17				
		Ocean Pointe	15				
		Mililani Golf Course	14				
		Waialua-Mokuleia	13				
		Leilehua Avenue	13				
		Puu Papaa	13				
		Waikalua Road	13				
		Village Park	13				
		Kokokahi	13				
		Makakilo	12				
		Waipahu Park	11				
		Puu Papaa	11				
		Keolu Hills	11				

3.7 BICYCLING FOR OUTDOOR RECREATION

The Department of Land and Natural Resources prepares the *State Comprehensive Outdoor Recreation Plan* (SCORP) as part of a requirement to qualify for Federal grants of outdoor recreation projects under the Land and Water Conservation Fund (LWCF) Act, Public Law 88-758, as amended. SCORP provides technical guidance to various government agencies and private entities that plan, develop, and manage outdoor recreation resources in the state. The eighth update of SCORP was completed in March 2003.

Focus group meetings with representatives of different outdoor recreation user groups and a series of general public information meetings were held as part of the planning process for SCORP 2003. After combining the input obtained from the meetings and surveys, SCORP found that Hawaii residents were most concerned about the following recreational needs and issues (in order of importance):

- Park maintenance and cleanliness, particularly restrooms
- Need for more youth-oriented facilities
- Overcrowding at popular recreation sites
- Need for more facilities, such as beach parks, playgrounds, ball fields, paths for biking/jogging, skate parks, and expansion of mauka trail systems for multiple users
- Public access to *mauka* and *makai* recreation areas
- Safety issues

The perceived need for bicycling facilities continues to rank relatively high, and the level of demand has been sustained from earlier studies. For example, a survey conducted during the planning process for the 1997 edition of SCORP revealed that more than three-quarters of the respondents (76%) felt that Hawaii needed more paths for jogging and biking. Close to half of the respondents (47%) said the state needed a lot more of them, while 29% felt that a few more paths were needed. That study also found that bicycling was the third most popular outdoor activity, after fitness walking and hiking. Bicycling was categorized as a “high popularity, relatively high intensity” activity with 14% of Hawaii adults participating.

CHAPTER 4

PLAN OBJECTIVES AND RECOMMENDED ACTIONS

4.1 BASIC PROPOSITIONS

The bases for developing the plan's objectives and recommendations stem from a series of propositions first established in the 1994 Plan. These propositions set forth HDOT's standpoints relative to bicycle transportation.

Proposition 1: Bicycles belong on Hawaii's roadways.

The bicycle is officially recognized by law, through Chapter 291C, Hawaii Revised Statutes (HRS), Statewide Traffic Code:

"Traffic laws apply to persons riding bicycles. Every person riding a bicycle upon a roadway shall be granted all of the rights and shall be subject to all of the duties applicable to the driver of a vehicle by this chapter, except as to special regulations in this part and except as to those provisions of this chapter which by their nature can have no application."

Proposition 2: The basis for the bikeway system is the existing roadway system.

A shared roadway system provides greater safety for the bicyclist than sidewalks and, in some cases, bike path facilities because of increased visibility and room for maneuvering. Appropriately designed shared roadway facilities do not measurably impact the service for motor vehicles on the roadway. Experience in many areas has shown the compatibility of the two modes of transportation.

Proposition 3: The bicycle is a viable mode of transportation.

The development of any new facility should be based on the needs and interests of the affected community, as well as the overall transportation policy goals and objectives of State and County governments. The ultimate objective should be to increase recognition and use of the bicycle as a viable transportation mode that belongs in the mix of transportation alternatives.

Proposition 4: Hawaii's bikeway system must provide for the broadest mix of bicycle riders.

Bikeway planning should seek to accommodate a broad mix of bicyclists taking into consideration that bicyclists differ greatly in their range of skills. According to the *Guide for the Development of Bicycle Facilities* (AASHTO, 1999):

"Planners and engineers should recognize that the choice of highway design will affect the level of use, the types of user that can be expected to use any given road, and the level of access and mobility that is afforded to bicyclists."

Proposition 5: A program of support must be provided in planning for bicycle transportation facilities.



A program for developing bicycle facilities alone is insufficient. There is serious need for support activities that create an environment suitable for a bicycle transportation system. These activities include, but are not limited to the following program areas:

- Facility maintenance
- Bicycle safety and education
- Public awareness of bicyclists
- Enforcement of traffic law violations by bicyclists and motorists
- Encouraging bicycle ridership

*Bicycling on
Waianuenue Avenue.
Hilo, Hawaii.*

4.2 STATE BICYCLE PLAN GOAL

The overall goal of *Bike Plan Hawaii* is:

TO ESTABLISH BICYCLING AS A SAFE AND CONVENIENT MODE OF TRANSPORTATION FOR RESIDENTS AND VISITORS THROUGHOUT THE STATE.

4.3 OBJECTIVES AND RECOMMENDED ACTIONS

To realize the overall goal of the plan, *Bike Plan Hawaii* identifies five tactical areas (objectives) in which improvements can be made. The objectives are easily remembered as the 5 “E”s:

- Engineering and Planning
- Education
- Enforcement
- Economics
- Encouragement

For each, the plan contains a set of recommended actions that would help to realize the objective. Some of the actions are already standard practice in the day-to-day activities of HDOT. Others may entail new initiatives or programs, either on an ongoing or ad hoc basis. And still others may call for HDOT to serve as a catalyst for other agencies or groups to take appropriate action. The recommended actions are neither mandates nor firm commitments. Rather, they provide a menu of facilitative actions that should be implemented as resources of manpower and funds allow.

4.3.1 ENGINEERING AND PLANNING OBJECTIVE

Objective:

PLAN AND DESIGN NEW AND IMPROVED TRANSPORTATION FACILITIES TO ACCOMMODATE AND ENCOURAGE USE BY BICYCLISTS OF ALL SKILL LEVELS.

According to the *National Bicycling and Walking Study* (FHWA, 1994):

“The key may lie in first working to create safer, more friendly environments, both physical and social, for bicyclists and those that walk. Then once people are drawn to greater use of these modes, their numbers may reinforce their greater safety on the roadway as they become more fully accepted as legitimate users of the transportation system.”

Recommended Actions:

- Design roadway projects with adequate space for bicyclists.
- Expand and improve each island’s network of safe, convenient, and integrated bikeways for both utilitarian and recreational travel.
- Adopt nationally recognized design guidelines and standards for bicycle facilities.
- Develop innovative design solutions when warranted by unusual or unique environmental conditions.
- Formulate and adopt policies and practices that maintain bikeways in a smooth, clean, and safe condition.
- Reconfigure HDOT’s bicycle facilities inventory to include shoulders and wide curb lanes that meet AASHTO guidelines.
- Inspect roadways after repair work has been completed to ensure that repairs meet standards for compaction, smoothness, and durability.

To Designate (or Not to Designate) Bikeways

The question of whether or not to use pavement markings, stencils, and/or signs to designate bikeways as bicycle facilities is an issue that affects not only design, but also the way HDOT distinguishes “existing” and “proposed” bicycle facilities. At present, only designated bikeways are considered bicycle facilities and included in the inventory of existing facilities. Roadways that are bike-friendly, and might otherwise meet AASHTO guidelines for bicycling accommodations are excluded from the inventory if not signed or marked. Instead, those roadway segments are listed as proposed bicycle facilities. An estimated 391 miles are affected in this way—possibly more.

Group B/C bicyclists prefer designated facilities for bicycle use. Therefore, when bike lanes or shoulders are provided to serve group B/C riders, some designation should be provided. In addition, signs and markings can be beneficial to traffic operations by legitimizing the presence of bicycles in the eyes of motorists and potential bicyclists, and “advertising” bicycle use. Combined with destination information, bike route signs can make the bikeway system distinctive and orient visitors who are unfamiliar with an area.

In other cases, however, it may be more appropriate *not to* designate the facility for bicycle use, even though road improvements meet AASHTO guidelines. Entire street systems (e.g., minor residential streets) are fully adequate for safe and efficient bicycle travel, and signing and striping for bicycle use would be unnecessary. Also, if the routes are not along high-demand bicycle corridors, it would be inappropriate to designate bikeways regardless of roadway conditions and signs would only add to the roadside clutter many communities find objectionable.

- Encourage counties to develop land use plans and establish zoning and subdivision regulations and site plan review procedures that promote bicycling through compact settlement patterns and require new developments to accommodate bicycles.
- Continue to integrate bicycle facilities with other modes of transportation; for example, by providing protected parking at major transit hubs and park-and-ride lots.
- Coordinate the planning, design, and construction of bicycle facilities with other implementing agencies.
- Given the similarity of needs shared by bicyclists and pedestrians, and the interconnections between bicycle and pedestrian facilities, future updates of *Bike Plan Hawaii* should be expanded to include pedestrian issues and facilities.



While motorists wait in a traffic queue on Pahi Avenue, Kapahulu, Oahu, pedestrians and bicyclists on the adjacent path are able to travel unimpeded.

4.3.2 EDUCATION OBJECTIVE

Objective:

EXPAND THE RANGE OF EDUCATION ACTIVITIES TO REDUCE BICYCLE CRASHES AND INCREASE RIDERSHIP.

Comprehensive public information and education programs are often used to raise community awareness and improve bicyclists' riding and traffic skills, *as well as* motorists' attitudes toward bicyclists. Ensuring that both bicyclists and motorists understand and practice the fundamental "rules of the road" is one way of accomplishing this goal. For a safer bicycling experience, public education programs should address effective riding principles and the use of safety equipment. Children who are offered bicycling education through the school system benefit by learning a life skill—not only in terms of bicycling as a specific activity, but also better awareness of road dynamics in general.

Recommended Actions:

- Support bicycle education programs for children in public and private schools throughout the state.
- Support bicycle education programs for adults.
- Ensure that safety materials and curricula used in the state are consistent and address the use of bicycle safety equipment and causes of bicycle crashes. Safety education programs should also improve on-road bicycling skills and judgment, and the observance of traffic laws.
- Incorporate awareness of the needs and rights of bicyclists into the driver education program, the Hawaii drivers' manual, and the drivers' license written exam.
- Monitor and analyze bicycle crash data to find ways of improving bicycle safety.
- Continue working with educational institutions to offer extension programs on state-of-the-art bicycle facility planning and design for transportation engineers and related professionals in the public and private sectors.
- Create an on-line resource center to disseminate material on bicycle facilities, safety, and efforts by other communities to increase bicycle use. The website should be interactive with bicyclists given an opportunity to provide suggestions and submit maintenance requests, and to notify officials of hazardous bicycling conditions.
- Increase awareness among Hawaii residents about the health and fitness benefits of bicycling.

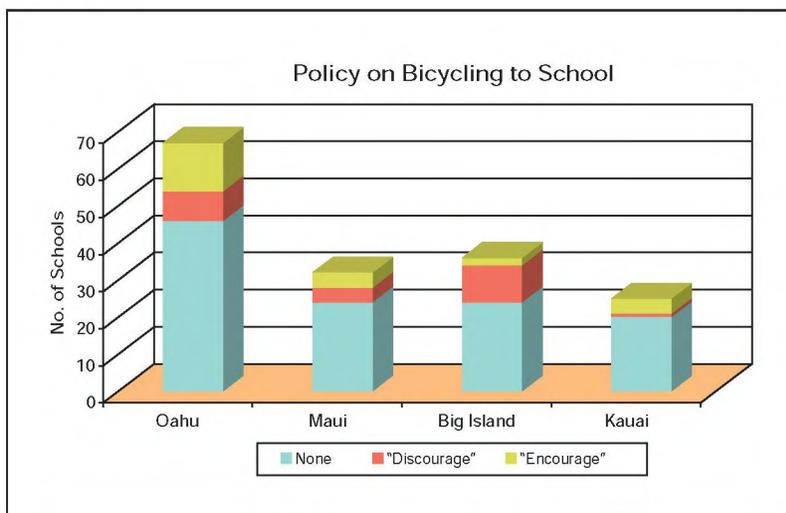


BikeEd, a program for fourth-grade students, teaches proper bicycling techniques on actual roads.



Bicycle rack at Washington Middle School, Honolulu, Oahu.

Figure 4-1



All public and private schools in grades K–12 (excluding those in the Honolulu PUC) were mailed a survey asking about their policy on students bicycling to and from school (see Appendix A). Among the 153 schools that responded, 105 schools or 69%, stated that they have no policy. The remaining 30% were almost evenly split between those that formally or informally encourage bicycling, and those that formally or informally discourage bicycling. Three schools in the latter group prohibit students from riding their bicycle to school.

Safe Routes to School

Not long ago, children routinely traveled through their neighborhoods on foot or bicycle. Today's children are more likely to be chauffeured by their parents to nearly all their activities because streets are perceived to be unsafe due to traffic, crime, or both. In the case of traffic hazards, the more traffic increases, the more parents decide it is unsafe for their children to bike or walk. One way to break the cycle is a movement called "Safe Routes to School" that is focusing on getting kids back on their bikes and feet. Coalitions of parents, school administrators, local officials, neighborhood groups, and traffic engineers work together to identify hazards along heavily traveled routes to school and recommend changes.



Kealakehe Public Pathway
Kona, Hawaii.

In the Kona region of Hawaii, the grass-roots efforts of PATH (People's Advocacy for Trails Hawaii), Kealakehe Neighborhood Watch, Kealakehe Parents Center, and other community groups, with cooperation by the state and county, led to development of the Kealakehe Public Pathway. Before the pathway was completed in 2001, the only connection between upper and lower neighborhoods and schools was a circuitous vehicular route along Palani Road to Queen Kaahumanu Highway and back up

Kealakehe Parkway. The pathway has provided a more direct route (just over a mile) for pedestrians and bicyclists by transforming a utility easement that was formerly off-limits to the general public. The project was spurred by a 1999 PATH survey which found that 93% of students went to and from school by motor vehicle—the only viable option in the eyes of many parents. Opinions have started to change. The opening day event attracted more than 450 participants. PATH and other organizations continue to promote the pathway's use by sponsoring a Walk to School Day and clean-up days as community events.

*Creating safer streets
requires the synergy of a
three-prong strategy.*



4.3.3 ENFORCEMENT OBJECTIVE

Objective:

STRENGTHEN ENFORCEMENT EFFORTS TO PREVENT ILLEGAL AND RECKLESS BEHAVIOR BY MOTORISTS AND BICYCLISTS AND SAFEGUARD THOSE USING THE BICYCLE NETWORK.

Enforcement of Hawaii's bicycle laws and local bicycle regulations is an important element in providing a safe bicycling environment. Like any other transportation system, uniform rules and regulations define user expectations and reduce the risk of injury. Rules and regulations need to be easily accessible and taught through education and encouragement programs to ensure that bicyclists and motorists are aware of and follow the "rules of the road." In Hawaii, a bicycle is considered a vehicle when operated on a roadway. Thus, bicyclists and motorists have many of the same rights and duties, and the laws governing traffic regulation apply to both.

Recommended Actions:

- Cooperate with law enforcement agencies on strategies and programs to reduce traffic violations by bicyclists that are most likely to result in serious crashes with motor vehicles and pedestrians.
- Cooperate with law enforcement agencies on strategies to reduce motorist errors and aggressive behaviors.
- As needed, review and update bicycle-related traffic laws to clear ambiguities and make them consistent with the current Uniform Vehicle Code (UVC). For example, Hawaii State law currently does not require removal of glass and other debris from an accident site, whereas UVC, Section 11 states that "Any person

Legal Restrictions on Bike Lane Usage

- If a bike lane is provided, bikes are required to use it when traveling at less than the normal speed of traffic moving in the same direction. Bicyclists may leave the lane when executing safe passing or overtaking maneuvers, preparing to make a left turn, or to avoid debris or other hazardous conditions.
- Bicyclists must ride in the direction of vehicular traffic.
- If a bike lane is provided, mopeds are required to use it—unless prohibited by local ordinance
- Pedestrians may use a bike lane as a walkway where there is no adjacent paved sidewalk.
- Motor vehicles are prohibited from using a bike lane, except when executing a legal turn, lane change or parking maneuver, authorized emergency vehicle or government vehicle performing its duty, stalled or broken vehicle or vehicle assisting, yielding to an emergency vehicle.



Aggressive motorists are often mentioned as a problem for bicyclists. Kalaniana'ole Highway, Oahu.



Wrong-way riding is illegal and unsafe. Kalaniana'ole Highway, Oahu.

Legal Restrictions on Sidewalk Usage

- Unless prohibited (by signage), bicycles may be driven on sidewalk at speed of 10mph or less
- Bicycle riding is prohibited on sidewalks in the business district.* (On Oahu, bicycling is prohibited on all sidewalks in Waikiki.)
- Bicyclist are required to yield the right of way to pedestrians.
- Bicyclists must give an audible signal before overtaking or passing pedestrians (specified only in the City and County of Honolulu and Kauai County Traffic Codes).

*"Business district" is defined as the territory contiguous to and including a highway when within any six hundred feet along such highway there are buildings in use for business or industrial purposes, including but not limited to hotels, banks, or office buildings, and public buildings which occupy at least three hundred feet of frontage on one side or three hundred feet collectively on both sides of the highway.

Sources:

Hawaii Revised Statutes, Chapter 291C [Statewide Traffic Code]; Chapter 293 Bicycles
Kauai County Code, Title VI, Motor Vehicle and Traffic Regulations; Chapter 16, Traffic Code
City and County of Honolulu, 1990 Traffic Code (1997 Edition)

Hawaii County Code, Chapter 24, Vehicles and Traffic

Note: Maui County does not have a traffic code or ordinances related to bicycle use in general. Existing ordinances relate specifically to bicycle tour operations.

Hawaii Statutes are interpreted for the layperson at
www.flex.com/%7Eoapea/BikeLaws.htm

removing a wrecked or damaged vehicle from a highway shall remove any glass or other injurious substance dropped upon the highway from such a vehicle.”

- Review, modernize, and streamline the bicycle registration system to improve accuracy in accounting for bicycles. For example, separate bicycle and mopeds in the registration and recordkeeping process.
- Publicize the requirements of bicycle registration and the importance of licensing fees to encourage registration by the bicycling public.
- Cooperate with law enforcement agencies in identifying strategies to reduce crime on bicycle corridors.

4.3.4 ECONOMICS OBJECTIVE

Objective:

INCREASE AWARENESS ABOUT THE ECONOMIC BENEFITS OF INCREASED BICYCLE USE.

Bicycling is not typically associated with economic development; yet, as a popular outdoor activity, there are natural linkages between bicycling and tourism, Hawaii's main industry. According to the Bureau of Transportation Statistics, approximately 1 in 5 American adults (41.3 million) reported using a bicycle at least once during a 30-day period between August and October, 2000. The Bicycle Market Research Institute estimated the total value of the overall U.S. bicycle market to be \$5.6 billion in 1998.¹ Estimating the size of the bicycle tourism market is difficult; however, a visit to the League of American Bicyclists' website lists dozens of bicycle touring companies and major bicycling events. States, such as Wisconsin, Vermont, Maine, and New York, are making

¹ Pedestrian and Bicycle Information Center, "Fact Sheets: Bicycling by the Numbers" at www.bicyclinginfo.org/insight/fact_sheets/

concerted efforts to market bicycle tourism and educate their citizens about the economic benefits of such campaigns. Hawaii has exceptionally attractive venues for bicycle tours, events, and competitions. The full potential of these events has yet to be realized.

Recommended Actions:

- Identify opportunities for bicycle travel that highlight the islands’ diverse scenic beauty and provide access to Hawaii’s tourism destinations.
- Participate in efforts to establish a scenic byways program. (Hawaii is unable to qualify for funds under TEA-21’s National Scenic Byways program without a program to formally designate scenic byways).
- Consider the needs of visitors when designing bicycle facilities, such as signs or markers that facilitate way-finding.
- Work with the Hawaii Tourism Authority and other appropriate entities to develop materials that promote the state as a destination for bicycling and publicize bicycle touring networks.
- Disseminate information about the individual and societal cost-savings that can occur when bicycle trips replace motor vehicle trips.
- Support and encourage bicycle events that attract visitors and encourage residents to ride their bicycles for transportation, recreation, and fitness.



Bike shops—retail, rental, repair—are on the business end of bicycling. Many of them also serve the bicycling community by providing useful information and news of community events.



The Ala Wai Promenade—with a view of the Hawaii Convention Center—is an amenity for visitors and residents. Honolulu, Oahu.

Bicycling Events and Eco-Tourism

Queen Kaahumanu Highway is heavily used for athletic training. Kona Coast, Hawaii.



Bike tour vans at staging area. Paia, Maui

The Ironman Triathlon, held annually since 1978, demonstrates the potentially significant economic impact of a successful event. The event averages 1,400 participants, of which 95% are from out of state. The State Department of Business, Economic Development, and Tourism estimates that the combined spending of participants, family, friends, and media boosts the economy with \$25.4 million in sales and \$9.2 million in additional household income—as well as \$1.6 million in State and local tax revenues.

To the extent that once-a-year events become longer term activities, the economy is more likely to respond by creating long-lasting employment. Such is the case with downhill bicycle touring on Maui, an 18-year old industry that attracts an estimated 250–450 bicyclists a day.

Bicycle tourism has a natural fit with ecotourism, whose growing popularity is seen in the United Nations General Assembly's designation of 2002 as the International Year of Ecotourism. As the tourism marketplace becomes more sophisticated, there are opportunities to cultivate niche markets. In ecotourism, a primary motivation is the opportunity to observe and appreciate the natural environment and related cultural assets. Bicycling allows people to experience the out-of-doors up close and personal. Adventure tourism is another, closely related market segment which emphasizes physical exercise and challenging situations in natural environments. Hawaii has the potential to generate more business by working to become a bicycle-friendly vacation destination.

4.3.5 ENCOURAGEMENT OBJECTIVE

Objective:

INCREASE BICYCLE TRIPS BY PROMOTING THE PERSONAL AND COMMUNITY BENEFITS OF THIS TRAVEL MODE.

Heighten awareness of bicycling activities and benefits through publicity, including attractive brochures and maps to inform citizens and to encourage their support in implementing the bicycle plan. Programs and initiatives to encourage bicycling are also an important element of creating a bicycle-friendly community. One way to promote and encourage bicycling is to provide assistance in the form of maps, brochures, and/or travel guides that make bicycling more approachable and enjoyable for novice and advanced bicyclists alike. Another effective technique is to highlight the various benefits bicycling provides.

Recommended Actions:

- Sponsor statewide promotions and events, and encourage local activities aimed at increasing awareness of bicycling opportunities.
- Distribute bicycle maps and guides—published or on-line—that inform the public of bicycle facilities and programs.
- Support the establishment of bicycle advisory committees in all counties.
- Coordinate and encourage the involvement of bicycle advocates, citizens, and local officials in implementing projects and achieving the objectives of this plan.
- Develop, implement, and promote bicycle commuter incentive programs.
- Encourage employers to support bicycle commuting.
- Continue to support transportation conferences, such as the Hawaii Traffic Safety Forum, that provide opportunities to promote and exchange ideas and information on bicycling in Hawaii and elsewhere.
- Cooperate with the Department of Health to facilitate bicycling as a fitness pursuit, as well as a transportation choice.

HDOT produced full-page ads and public service announcements for radio and TV in 2001-02 to raise awareness of bicycling safety.



The Department of Education's Safe Communities and Youth Activities Program and local businesses sponsored a poster contest on helmet safety in the Hawaii Kai area.

HAWAII BICYCLE MONTH

Share the Road Safely

Every bicycle on the road means one less car!
Please treat bicyclists with respect and courtesy.

AS A MOTORIST ARE YOU AWARE THAT:

Most accidents involving cars and adult bicyclists are caused by motorist error rather than bicyclist error. Bicyclists may use the full right lane. This may occur when the road is too narrow to fully accommodate both car and bicycle.

Bicyclists are legally considered drivers of vehicles. They must obey traffic signs and signals, as well as be accorded the same respect as other legitimate road users.

Bike paths are great for recreational bicyclists but for commuters and bicyclists traveling at higher speeds, streets are safer. Respect a bicyclist's right to choose either the path or the road.

Bicyclists are ticketed for traffic violations...and are subject to fines equal to those for motorists.

Not all bicyclists are alike. As with car drivers, there are good and bad, experienced and inexperienced bicyclists. Your courtesy will inspire the same in others.

It is a traffic violation to open a car door unexpectedly so as to create a hazard to bicyclists. Please check your mirror before opening your door.

The bicyclists you pass may be travelling 25 to 30 miles per hour. When changing lanes or making a turn near a bicyclist, assess the bicyclist's speed and yield as you would to any other vehicle. If you are about to make a right-hand turn after passing a bicyclist, make sure that you have enough space, otherwise wait for the bicyclist to go through the intersection before making your turn.

Look out for bicyclists going around obstructions in their path. While they should look before moving farther into the lane, bicyclists sometimes swerve around potholes, sewer grates and even parked cars without glancing over their shoulder to make sure the coast is clear.

Pass a bicyclist only when it can be done safely while maintaining a "safety zone" of three feet to avoid cutting the bicyclist off. Realize that the air turbulence created by your car at high speeds can cause problems for bicyclists.

SHARE THE ROAD

SAFETY TIPS FOR BICYCLISTS

- 1 Wear a helmet every time you ride. Even if you just ride on bike paths or for a short distance, make sure you put on your helmet before you go. You don't have to be going fast or far to risk serious head injuries.
- 2 Obey traffic laws. Your bike is a vehicle, and just like a car, you must stop for stop signs and stop lights.
- 3 Always ride with the direction of traffic. Even if you are riding a short distance, it is never safe to ride against traffic. Also, it is unlawful to ride facing traffic in Hawaii, as it is in all 50 states. "The right side is the right side."
- 4 Ride in a straight line. Don't weave in and out of parked cars, or do anything that would surprise motorists.
- 5 Be visible. Wear light-colored clothes and a bright helmet when you ride. If you ride at night, you must have at least a white front light and a red rear reflector on your bike.

Bike Safety Rodeo!
Saturday, October 27, 9:30 a.m. - 12:30 p.m. at Shriners Hospital for Children
State Farm Insurance's annual Bike Safety Rodeo is free and open to all elementary school-age children. All participants will receive goody bags and become eligible to win a new bicycle or safety helmet. For more information, call State Farm Insurance at 503-1178.

Bicycle Master Plan Workshops on Oahu

- November 1, 7 p.m., JW Marriott Hilton Resort and Spa, Conference Room
- November 13, 6:30 p.m., Kaneohe Community and Senior Center
- November 14, 6:30 p.m., Aiea Haina Elementary School, Cafeteria
- November 15, 6:30 p.m., Mililani Mauka Elementary School, Cafeteria

The Hawaii State Department of Transportation will hold a series of two-hour community workshops that will provide the public with information on Hawaii's statewide Bicycle Master Plan. Participants will help identify potential bikeways, hazardous areas for bicyclists and other important issues. For Neighbor Island workshops or more information, visit www.state.hi.us/dot/highways/bike or call Kinura International, Inc. at 954-8948.

Let's share Hawaii's roads safely.
This message is brought to you by:
State of Hawaii Department of Transportation
& State Farm Insurance

CHAPTER 5

BICYCLING IN THE ISLANDS

Chapter 4 discussed statewide objectives and programs. The purpose of Chapter 5 is to consider variations in bicycle transportation use and preferences across the state, by island and region. Bicycle planning in this chapter reflects a synthesis of policy statements found in local planning documents, input from public officials and workshop participants, and knowledge of an area’s development pattern and economic base.

Virtually all County general plans and regional or community level plans recognize the importance of accommodating alternative modes of transportation that make circulation more efficient and improve quality of life. Building a successful bicycling network will ultimately depend on coordinated efforts throughout the state, but many of the building blocks are already in place.

5.1 ISLAND OF KAUAI

Summary of Kauai Bicycle Facilities

	Signed Shared Roads (mi.)	Bicycle Lanes (mi.)	Shared Use Paths (mi.)	All Facilities (mi.)
Existing	14.5	1.2	6.5	22.2
Underway	0.0	0.0	3.4	3.4
Proposed	169.0	3.3	88.8	261.1
Total Network	183.5	4.5	98.7	286.7

Kauai Long-range Land Transportation Plan (1997). This HDOT document incorporates the recommendations of *Bike Plan Hawaii*.

Bicycling-related Policy Statements in Local Plans

The *Kauai General Plan (2000)* refers to *Bike Plan Hawaii* as the county’s long-range bikeway plan. Section 7.3.2 calls on the county to “support funding to develop Kauai’s bikeway system to provide for alternative means of transportation, recreation, and visitor activities (economic development).” In one section, the *General Plan* lays out a desired future for rural roads and highways on Kauai. Some components of this vision have implications for bikeway planning, including the following:

- Maintain the “country character” of rural roads.
- Limit to two lanes, with low speed limits, no sidewalks, curbs, or gutters, minimal traffic signage.
- Safe bicycle and pedestrian routes provided.
- State and county agencies have adopted “flexible highway design,” in order to enhance scenic and historic qualities and to strike a balance between flow of automobile traffic and safe facilities for buses, bicycles and pedestrians.

Objectives of Bikeway Proposals for the Island of Kauai

- Except where bicycling will be prohibited, include bicycle facilities in new roadway construction and during rehabilitation of existing roadways.
- Develop a circumferential bikeway facility along the existing highways.
- Identify scenic routes along existing highways and off-highway corridors to promote areas of safe, comfortable, and attractive bike rides.
- Develop designated bike lanes in communities with relatively high populations or smaller communities with high through-traffic volumes.
- Identify opportunities to incorporate former cane haul roads and other backroads into the bikeway network.
- Where appropriate, provide non-motorized access to the island’s ecologically and culturally important sites.

Areas that will require special design considerations include, but are not limited to the following:

Princeville to Hanalei Bay, to Hanalei Valley

Access to this area along Kuhio Highway is an important asset to residents as well as visitors. The ride along the coastline provides access to the beaches along the coast, to the Kilauea Lighthouse and refuge area, as well as the Haena area. On the mauka side of Kuhio Highway, inland valleys provide examples of traditional farms, wetlands, and native wildlife habitats. Improvements to Kuhio Highway will require special consideration given narrow pavements without shoulders along most of the segment. This is especially true along the Hanalei Valley with its one-lane bridges, narrow roads, and periodic drainage problems. The rewards of fully developed bicycling facilities in the area will include scenic and rustic views combined with an island ambience that is unique to Hanalei.

Kawaihau

Kuhio Highway serves as the main artery through the eastern side of the island. The stretch of roadway between Waipouli and Kealia is heavily developed, especially within the commercial district. In many places, bicyclists are currently required to share the road with motor vehicles, and the right-of-way would have to be widened to be fully utilized by bicyclists. Most of the residential developments are found on the mauka side of the highway. Residents living on the

hillsides travel along a limited number of collector streets to reach Kuhio Highway. Bicycle facilities along these streets, similar to the path on Kawaihau Road, would make it easier for hillside residents to bicycle.

A high-priority proposal on Kauai is a shared use path—sometimes called the Health Heritage Trail—that would eventually stretch 16 miles from Anahola to Lihue, most of which would be located near the coastline. Two segments are proceeding. The first phase includes 2.3 miles of paths within Lydgate Park and will be completed by the end of 2002 (see Box). The second phase measures 4.3 miles, beginning at the boat launch area at Waikaea Canal and extending north past Kealia Beach to Ahihi Point. It is in the design and environmental permitting stage. A third phase will run from Lydgate Park to Waikaea Canal. Major features of the shared use path are both its length and its location adjacent to the scenic Anahola-Lihue coastline. Continuous scenic access along the coastline would provide a significant attraction for mainland and overseas visitors. In addition, the coastal path would provide an alternative route for bicyclists commuting between Kapaa and Lihue, bypassing many congested and narrow roadway sections. For future development to take place, however, major efforts will be needed to acquire sufficient right-of-way, as well as public and landowner support for an uninterrupted bike path.



Existing pedestrian and bike path at Kapaa Beach Park, Kauai.

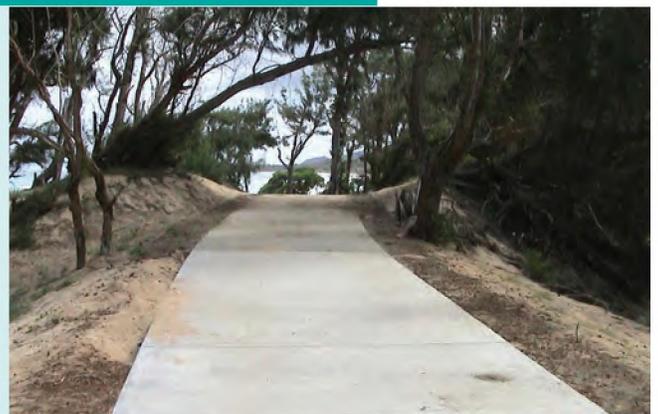


Part of the alignment for the 4.3-mile Kealia-Kapaa Pedestrian and Bike Path will incorporate a former cane haul road that runs along the coast, Kawaihau, Kauai.

Lydgate Park Bike and Pedestrian Path

Kauai residents and visitors will soon enjoy a 10-foot wide shared use path that extends for approximately 2.3 miles in Lydgate Park. The project was funded with a \$2.6 million grant from the Federal Highway Administration. Funds were secured following the successful construction of Kamalani Kai Pedestrian Bridge and an adjoining play area by volunteers. The value of the community labor—sweat equity—used to build the bridge was estimated at almost \$550,000 and satisfied the required local match.

An editorial in *The Garden Island* stated that “this entire project exemplifies the spirit of aloha found on Kaua’i.” Doug Haigh, the County’s Building Superintendent, remarked that the finished improvements will be “an awesome asset” for the island.



Bike and pedestrian path, under construction, Lydgate Park, Kauai.

Lihue-Puhi

In 2001, work began to add much needed capacity to Rice Street by converting it from three to four lanes, maximize on-street parking by allowing portions of the outside lanes on both sides of the street to be used for parking during non-peak hours, and improve the sidewalk. Bike lanes could not be accommodated within the narrow right-of-way. Nevertheless, *Bike Plan Hawaii* maintains a bike lane designation on the map for future consideration. In the meantime, bikeways should be developed on secondary streets (such as Hardy, Umi, and Puaole) to facilitate bike travel around town.

Just west of Lihue, the Kaumualii Highway widening project is currently underway and will improve bicycle access to Kauai Community College, Puhi Middle School, and the Kukui Grove Shopping Center. Developer Grove Farm is planning to construct a connector road between Kukui Grove Center and Puhi Road along portions of Nuhou Street and Kaneka Street. This roadway will include a bicycle facility and offer bicyclists an alternative to Kaumualii Highway, and also provide a linkage between residential subdivisions, public facilities (school, parks), and commercial areas.

Koloa/Poipu/Lawai

The Koloa/Poipu area of the island requires special consideration because of the resident and visitor traffic in and out of the area. The Kaumualii Highway widening project will improve the roadway by providing a consistent shoulder width from Maluhia Road to Lihue. Community members have also expressed strong support for future improvements along Maluhia Road itself (also called Tree Tunnel Road). This scenic automobile drive into historic Koloa Town could provide a similarly pleasant travel experience for bicyclists.

5.2 ISLAND OF OAHU

Summary of Oahu Bicycle Facilities

	Signed Shared Roads (mi.)	Bicycle Lanes (mi.)	Shared Use Paths (mi.)	All Facilities (mi.)
Existing	30.1	33.6	34.3	98.0
Underway	18.8	4.6	14.3	37.7
Proposed*	171.8	49.7	37.4	258.9
Total Network	220.7	87.9	86.0	394.6

* Additional bicycle facilities are proposed in the *Honolulu Bicycle Master Plan*.

Transportation for Oahu Plan 2025 (April 2001). Objective #15, part of the Quality of Life System Goal, addresses bikeway development, as follows:

- Develop and maintain “low-energy” transportation facilities, including bikeways, walkways, and other energy efficient elements which can be safely integrated with other transport modes.

Bicycling is also addressed through the travel demand model which found that bicycling and walking, combined, constitute 11% of total daily trips made on Oahu.

Bicycling-related Policy Statements in Local Plans

(See regional discussions, below)

Objectives of Bikeway Proposals for the Island of Oahu

- Except where bicycling will be prohibited, include bicycle facilities in new roadway construction and during rehabilitation of existing roadways.
- Develop a circumferential bikeway along existing highways, including Farrington Highway, Kamehameha Highway, Kalanianaʻole Highway, Ala Moana Boulevard, and Nimitz Highway.
- Identify scenic routes along existing highways and off-highway corridors to promote areas of safe, comfortable, and attractive bike rides.
- Develop designated bike lanes within communities with high through-traffic volumes. Where bike lanes are not provided on collector roads and arterials, encourage the installation of 14-foot curb lanes.
- Identify routes that promote bicycle commuting and interregional travel.

Areas that require special design considerations include, but are not limited to the following:

Central Oahu

Central Oahu is characterized by plantation-era communities (Waipahu and Wahiawa) and master planned suburban residential communities. The region is still on a growth trajectory with future plans for additional residential subdivisions and employment growth in existing and new commercial and industrial areas.

Central Oahu Sustainable Communities Plan (Draft version): The master-planned residential communities will be designed or redeveloped to support pedestrian and bike use within the community and transit use for trips outside the community.

One of the policies for the region’s general transportation system is a “reduction in automobile use.” To support this policy, the SCP calls for:

- Provision of circulation systems with separated pedestrian and bicycle paths and convenient routes for public transit service
- Design of street systems in new development areas with layouts to facilitate bus routes and encourage pedestrian travel

- Provision of supporting facilities and amenities for pedestrian, bicycle, and public transit use (bicycle racks at commercial centers, bicycle storage facilities at employment centers, and bus shelters at bus stops will be encouraged)

A location requiring special design consideration is the juncture of Waipahu and Pearl City, near Leeward Community College and the Waiawa Interchange. Options include the widening of Kamehameha Highway and Farrington Highway (specifically the bridge over the H-1 and H-2 freeways) and/or the use of former cane haul roads (between Pearl City/Waipahu and Waipio/Mililani).

Another bottleneck is the Kipapa Gulch crossing on Kamehameha Highway. Currently under consideration is a proposal to use Old Kamehameha Highway through Kipapa Gulch in order to develop a shared use path linking Mililani to the Central Oahu Regional Park in Waiola.

Leeward Oahu

The flat terrain and sunny, dry climate of Leeward Oahu favor bicycling as an alternative form of transportation and for recreation. Leeward Oahu includes both the rapidly growing Ewa plain, as well as the Waianae Coast whose vision is “firmly embedded in the rural landscape.” These differences are echoed in the transportation and bikeway needs identified in their respective regional plans.

Waianae Coast Sustainable Communities Plan: There is a need for a “safe bicycle route along the entire Waianae Coast, and up some of the major valley roads, as far as the concentrations of urban/suburban development.” The SCP encourages plans and programs for alternative modes of transportation, “including bikeways, pedestrian walkways and paths, and creative use of existing unutilized transportation corridors such as the old OR&L railroad right-of-way. This ROW could be used for a multiuse path for bikers, roller bladers, skateboarders, and pedestrians that would be safe from vehicular traffic.”

Ewa Development Plan: The DP refers to the *Kapolei Area Bikeway Plan* published by Campbell Estate in 1991. Similarly, *Bike Plan Hawaii* also incorporates the recommendations contained in the *Kapolei Bikeway Plan*. The Ewa DP stresses the need for a road infrastructure that will keep pace with urbanization, but also acknowledges the desirability of reducing automobile use by:

- Providing a circulation system with separated pedestrian and bicycle paths and convenient routes for public transit service
- Use of more traditional “grid” patterns of street systems in new development areas to facilitate bus routes and encourage pedestrian travel
- Providing supporting facilities and amenities for pedestrian, bicycle, and public transit use. The use of bike trails, bicycle racks at commercial centers, bicycle storage facilities at employment centers as well as bus shelters at bus stops will be encouraged.

New bikeways are being constructed in conjunction with new roads. Bike lanes are found on Farrington Highway and Kamokila Boulevard between Kapolei Golf Course and Kalaeloa Boulevard, and on collector roads in the residential areas of Kapolei. In contrast, the new subdivisions in Ewa are taking a different design strategy with the proliferation of sidepaths, rather than bike lanes. (Like sidewalks for pedestrians, sidepaths are separated from motorized traffic. Sidepaths are wider than sidewalks and intended for use by bicyclists and pedestrians.) Unfortunately, sidepaths are sometimes provided in lieu of a bike lane or wide curb lane. When designing sidepaths, care must be given to coordinating the segments so they do not shift from one side of the street to the other (as in Geiger Road and Kolowaka Road, crossing Fort Weaver Road).

A major bicycle project currently underway is the Leeward Bikeway. HDOT acquired a 40-foot right-of-way for the former Oahu Railroad and Land Company (OR&L) railway from the U.S. Department of Transportation. Under the terms of the deed transfer, HDOT is required to develop the Leeward Bikeway. There will be a 10-foot wide path, approximately 14 miles in length from Waipio Point Access Road through the Ewa Plain, between the communities of Kalaeloa and Kapolei, and along the Waianae



Sidepath along Kolowaka Road, Ewa, Oahu.

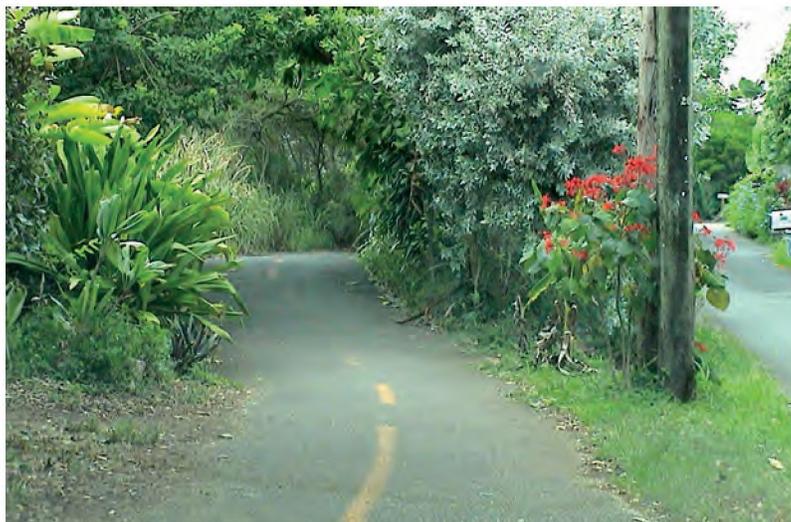
Coast to Lualualei Naval Road. It will skirt the Hawaiian Railway Society Train Station/Museum and, in places, run alongside an active rail line (with barriers separating the two facilities where clearances are insufficient). Combined with the Pearl Harbor Historic Trail—under the jurisdiction of the City and County of Honolulu—the entire bicycle facility will extend from Halawa, near the USS Arizona Memorial Visitor Center to Nanakuli, a total of 18.6 miles. Because the bikeway links residential communities with employment centers, it could become a major commuting route. There are also numerous opportunities along the bikeway for connections to recreation and commercial destinations.

North Shore

The Koolauloa and North Shore regions are expected to remain uncrowded, rural areas with low population density, small-scale commercial districts, and limited growth. Part of their rural character is the limited roadway infrastructure. Kamehameha Highway provides the only roadway linking the rural coastal communities and the highway is an important facility for non-motorized transportation. For local residents, it serves as “main street,” providing bicycle and pedestrian access to stores, post offices, schools, and parks. Parts of the highway are very scenic with dramatic views of the ocean and mountains, thereby appealing to long-distance touring bicyclists.

North Shore Sustainable Communities Plan:

- Provide more opportunities and support facilities for convenient and safe pedestrian and bicycle travel. Bikeway development should be coordinated with private landowners to ensure that safety, liability, and a mixture of use issues can be adequately addressed.



Ke Ala Pupukea shared use path.
North Shore, Oahu.

- Emphasize accessibility from residential streets to bus routes, parks, schools, and commercial centers. Design roadways to facilitate bicycle and pedestrian travel.

Koolauloa Sustainable Communities Plan:

- Provide an integrated system of bikeways for work, school, shopping trips, and recreation, including rides to playgrounds, beach parks, and other recreational areas.
- Provide for bicycle routes along private streets throughout the Laie community.

Some sections of Kamehameha Highway already provide adequate shoulders for bicycling, but the narrow right-of-way in other sections has reduced shoulder widths. In the Sunset Beach-Pupukea area, the Ke Ala Pupukea shared use path runs parallel to the highway and provides an alternative linear route. Given the path’s popularity, the community is exploring extension of the path to Waimea Bay, and possibly to Haleiwa Beach Park. In the Koolauloa region, the Vision Group has studied possible alignments for a shared use path from Laie to Kahuku Village.

Windward Oahu

Koolaupoko Sustainable Communities Plan: One of the key elements of the regional transportation system is to “emphasize alternatives to the private passenger vehicle as modes for travel.”

[E]mphasis on automobiles as the principal means of transportation is inconsistent with other elements of the vision expressed in this *Sustainable Communities Plan*.

Transportation system improvements in Koolaupoko should be directed instead towards alternative travel modes, including public transit and pedestrian and bicycle facilities.

In Windward Oahu, the existing bikeway system consists of discontinuous segments of bike lanes, bike routes, and bike paths in Kaneohe, Kailua, Lanikai, and Waimanalo. There is significant community interest in connecting the segments and expanding the overall bikeway system.

Bike Plan Hawaii proposes additions to the region’s bikeway system to create an interconnected grid through the more populated areas, thereby enhancing the attractiveness of bicycling for

commuting and incidental trips. Bike lanes would be an appropriate component of ongoing “traffic calming” efforts in residential areas. Another planning objective is to strengthen interregional linkages: to East Honolulu via Kalanianaʻole Highway and to Koolauloa via Kamehameha Highway.

The Kailua neighborhood has a fairly well-established bicycle grid. In Kaneohe the aim is to improve the link between residential areas and the main commercial areas, schools, and civic center. Unlike Kailua, major highways cut through Kaneohe. The bike boulevard concept may offer a suitable solution for avoiding high-volume, high-speed roads, and should be investigated further.



Bike lane along Kailua Road, Kailua, Oahu.

East Oahu

East Honolulu is nearly built out, but only recently has it reached the critical mass needed for large-scale commercial activity. Demographic shifts also contribute to the region’s evolution, including a growing elderly population, some “empty nesters” moving out, and younger families moving into multi-generational households.

East Honolulu Sustainable Community

Plan: The SCP recognizes the potential for bicycling as an alternative mode of travel, especially for local trips. Among the measures recommended are:

- Modify rights-of-way design in selected area—particularly along designated bike lanes and routes, principal pedestrian routes and street crossings, and near bus stops—change travelway widths of curb radii, pavement texture, introduce appropriate signage, and provide more generous landscaping.
- Implement traffic calming measures in appropriate residential areas to reduce average motor vehicle speeds and make vehicular routes less direct, thereby increasing safety and enjoyment for pedestrians and bicyclists.



Bike lane along Kalanianaʻole Highway, East Honolulu, Oahu.

Kalanianaʻole Highway is a well-used and scenic corridor, characterized in the SCP as “the linkage between [the] hillside and valley neighborhoods. It is a major route for joggers and bicyclists, as well as vehicles, and its attractively landscaped median helps to unify the image of East Honolulu as a distinct region.”

During the *Bike Plan Hawaii* update process, local residents recommended that proposed bike facilities on the residential collector roads be changed from bike lanes to signed shared roads. Other suggestions focused on identifying “child-friendly” routes in Aina Haina and Hawaii Kai, and the Portlock detour to avoid the left-turn movement from Kalanianaʻole Highway onto Lunalilo Home Road.

Primary Urban Center (PUC): Kahala to Pearl City

In updating *Bike Plan Hawaii*, bikeway planning in the PUC was limited to roadways under state jurisdiction. One road segment targeted for near-term improvement is Nimitz Highway between Middle Street and Waiakamilo Road. The absence of bike lanes constitutes a key missing link in the bike corridor from the airport to Waikiki. Heavy vehicles, including delivery trucks, trailers hauling containerized cargo, and tour buses, create uncomfortable riding conditions. One possibility for improving bicycle accommodations in the “missing link” section is to combine this work with a future road resurfacing project. Because the corridor is fully developed, it would be difficult to acquire additional right-of-way; however, the possibility of reallocating existing space, for example by narrowing the median and restriping, should be considered.

The City and County of Honolulu has made great strides in developing bicycle facilities in areas where large numbers of bicyclists are concentrated. A bicycle circuit has been completed at the east end of Waikiki, through portions of Kapahulu, and the mauka side of the Ala Wai Canal—complementing the recreational facilities around Kapiolani Park. A bikeway around Diamond Head, nearing completion, will further extend the Waikiki bike routes. The Diamond Head circuit will also connect to a new bike station being planned on the Kapiolani Community College campus.

Another concentration of bicycle facilities is located around the University of Hawaii at Manoa, linking the academic campus to surrounding residential and commercial areas. Planning studies are currently underway for bicycle improvements on Ala Wai Boulevard (makai side of canal) and Young Street. Cross-town bicycling will get a major boost with development of the proposed bicycle boulevard on Young Street. This street has the advantage of relatively low-volume and low-speed traffic, but it also contains a large number of driveways and signalized intersections that must be addressed.

The Pearl Harbor Historic Trail is a shared use path that has been open to the public for more than two decades. With the proposed construction of the Leeward Bikeway, the overall bicycle facility will benefit communities from Aiea to Nanakuli. The State and County should continue to collaborate on this regional facility, as well as developing connections to and from residential areas and attractions along the pathway.

Honolulu Bicycle Master Plan. Since 1999, the Honolulu Bicycle Master Plan has provided a widely consulted blueprint for the city. The facility development component of the plan revolves around three main themes. Under each theme, specific projects are assigned to one of three priority levels.

- “Lei of Parks”—a system of paths and bike lanes linking regional and local parks in urban Honolulu. The paths are intended to attract many types of users. Because the facilities are generally separated from automobile traffic, they are expected to appeal to family and beginning riders. At the same time, the facilities within the “Lei of Parks” will provide access to many destinations, thus making them suitable for commuters as well.
- Bicycle Friendly Route No. 1—a continuous bicycle facility that provides a direct connection between Kahala and Pearl City. Located primarily makai of the Lunalilo Freeway (H-1), this bikeway is tailored to experienced bicyclists. The intent of Bike-Friendly Route No. 1 is to give commuters and other bicyclists a direct and safer bikeway through urban Honolulu.
- College Access Routes—a series of projects to improve bicycle access to universities and community colleges within Honolulu. The plan recognizes that universities and colleges can generate a disproportionately large share of bicycle trips, especially campuses with limited parking for automobiles.



The Aia Wai Promenade is part of the City and County of Honolulu’s “Lei of Parks”—a network of green spaces connected by bike routes and paths. Waikiki, Oahu.

Priority I projects in *Bike Plan Hawaii* will be coordinated with Priority I projects in the Honolulu Bicycle Master Plan to ensure that bicyclists are able to continue their rides beyond the PUC.

5.3 ISLAND OF MAUI

Summary of Maui Bicycle Facilities

	Signed Shared Roads (mi.)	Bicycle Lanes (mi.)	Shared Use Paths (mi.)	All Facilities (mi.)
Existing	37.8	21.6	1.0	60.4
Underway	7.5	11.0	7.0	25.5
Proposed	261.5	13.3	62.4	337.2
Total Network	306.8	45.9	70.4	423.1

Maui Long-range Land Transportation Plan (1997). This HDOT document incorporates the recommendations of *Bike Plan Hawaii*.

Bicycling-related Policy Statements in Local Plans

One of the transportation objectives in the *Maui General Plan* (1990) is “to support an advanced and environmentally sensitive transportation system which will enable people and goods to move safely, efficiently and economically.” Related to this objective is a policy to “support the development of a county-wide network of bikeways and pedestrian paths.”

Objectives of Bikeway Proposals for the Island of Maui:

- Except where bicycling will be prohibited, include bicycle facilities in new roadway construction and during rehabilitation of existing roadways.
- Develop a circumferential bikeway facility along the existing highways.
- Identify scenic routes along existing highways and off-highway corridors to promote areas of safe, comfortable, and attractive bike rides.
- Develop designated bike lanes within certain communities/districts (e.g., between Wailuku and Kahului) with relatively large populations or smaller communities with high through traffic volumes (e.g., Kihei and Paia).

Areas that will require special design considerations include, but are not limited to the following:

Wailuku-Kahului

The Wailuku-Kahului area comprises Maui’s urban core, and the region is well along to providing a bicycle-friendly grid. Bike lanes were recently added to Kaahumanu Avenue as part of a widening and improvement project. They provide a transportation spine for bicyclists, with access to destinations in Wailuku and Kahului. In Kahului, bike lanes can be found on many of the secondary arterials (avenues) in the residential area. Expansion of the network will provide more convenient connections to elementary, intermediate, and high schools, Maui Community College, major shopping centers, the Kahului industrial area, and parks. The Wailuku-Kahului Community Plan specifically addresses the need “to offer safe and pleasant means of access by bicycle along routes accessing school sites.” Improvements on the older streets of Wailuku will be more challenging as they tend to be narrower with limited building setbacks.

Bike lanes installed as part of Kaahumanu Avenue widening project. Kahului, Maui.

Northshore Bikeway, adjacent to Stable Road. Kahului, Maui



There are several bicycle facilities linking Wailuku-Kahului with other regions, including the bike lane on Kahekili Highway, the Northshore Bikeway, and shoulder improvements that will be implemented as part of the Mokulele Highway widening project.

Upcountry-Paia-Haiku

Paia-Haiku Community Plan, Transportation Objectives and Policies:

- Establish a regional network of bikeways and pedestrian paths. This should include providing adequate space to accommodate bicycle traffic throughout the Paia Town area, including along Baldwin Avenue from Paia to Makawao.
- Encourage convenient pedestrian and bicycle access between residences and neighborhood commercial areas, parks and public facilities, in order to minimize use of the automobile within residential communities.

Makawao-Pukalani-Kula Community Plan, Transportation Objectives and Policies:

- Establish safe pathways connecting schools, recreation facilities, and commercial and residential centers for use by walkers, joggers, equestrians, and bicyclists.

Upcountry Greenways Master Plan. The Upcountry Greenways Master Plan is currently being developed by the County Planning Department in collaboration with residents and the bicycling community. It will propose a system of multi-user trails covering an area from Ulupalakua to Haiku. The trail system will provide recreational facilities and serve as an alternative interregional transportation system. Based on a preliminary draft of the Greenways Plan, the proposed routes are expected to be compatible with the network that is shown in *Bike Plan Hawaii*.

The Upcountry region is also important for the bicycle tour industry. Most of the bicyclists riding downhill from Haleakala National Park pass through Makawao Town and continue on Baldwin Avenue. A high priority project is to complete bicycle improvements to Baldwin Avenue. Initial designs were modified to avoid the displacement and relocation of large shower trees. *Bike Plan Hawaii* further recommends the provision of pull-out areas along the Haleakala Crater access road so that escort vans can pull over periodically and allow other motor vehicles to pass.



Every year, thousands of people experience Haleakala and the Upcountry region on a downhill bicycling tour. Baldwin Avenue, Maui.

Kihei-Makena

Kihei-Makena Community Plan, Transportation Objectives and Policies:

- Strengthen the coordination of land use planning and transportation planning to promote sustainable development and to reduce dependence on automobiles. New residential communities should provide convenient pedestrian and bicycle access between residences and neighborhood commercial areas, parks, and public facilities.

- Plan, design, and construct a pedestrian and bikeway network throughout the Kihei-Makena region which considers the utilization of existing stream beds, drainageways, wetlands and public rights-of-way along coastal and inland areas.

Implementing Actions:

- Preserve and enhance the identity of Kihei’s neighborhoods by designing the north-south collector road in discontinuous segments. Work with landowners, neighborhoods, and community groups to plan and implement an adjacent but separate trail/greenway/bikepath to provide non-motorized public access along the full length of the road reserve. In sections where no roadway is built, the trail/greenway/bikepath may be broadened to form a neighborhood park, public access, or open space area.

The Mokulele Highway widening project will improve the connection between Kihei and Kahului. Once in the Kihei-Makena region, there are two existing north-south corridors for bicyclists: a well-used bike lane on South Kihei Road which is popular despite heavy traffic, and a designated bike route along Piilani Highway. There is a project for interim widening of Piilani Highway; however, shoulder widths will continue to accommodate bicyclists.

Bike lane along South Kihei Road, Kihei, Maui.



A third corridor, called the North-South Connector, is in development about midway between South Kihei Road and Piilani Highway. The new roadway will be integrated with an off-road path called the Kihei Greenway. The first increment, a 3,000-foot segment from East Waipulani Street to Lipoa Street, is underway. The 12-foot wide,

asphalt-paved path will feature landscaping, lighting, and amenities (benches). The entire pathway is envisioned as a four-mile long linear park, running through the middle of Kihei, and will be beneficial for children bicycling to and from schools along the route. For much of its length, the greenway will be adjacent to the North-South Connector Road; however, since the road is not planned as a continuous thoroughfare, the greenway will offer greater connectivity to non-motorized traffic.

Bicycle facilities on mauka-makai connectors are equally important, but the older, narrow streets will be difficult to modify. In contrast, newer streets, such as Kenolio and Alanui Ke Alii, have been designed with bike lanes or wide curb lanes. The shift in roadway design evident in the Kihei region is illustrative of the county’s efforts to make new streets bike friendly.

Hana

Hana Community Plan, Transportation Objectives and Policies:

There are no specific references to bicycling, but the plan includes objectives that will serve bicyclists.

- Improve road conditions through more frequent resurfacing and repair.
- Encourage a program of roadway safety improvements, including shoulder widening, pull-over spots, and installation of new signage and guardrails that do not detract from the region's scenic and rural character.

Significant road work will be required in order to access Hana via the Hana Highway to the north and Piilani highway to the south. It is recommended that future proposed bikeways along these routes be developed concurrently with HDOT and Maui County roadwork activities.

West Maui

West Maui Community Plan, Transportation Objectives and Policies:

- Support improvements for the safe and convenient movement of people and goods, pedestrians and bicyclists in the Lahaina region particularly along Honoapiilani Highway, Front Street, and Lower Honoapiilani Road and seek to establish a regional network of bikeways and pedestrian paths.
- Promote residential communities that provide convenient pedestrian and bicycle access between residences and neighborhood commercial areas, parks and public facilities, in order to minimize use of the automobile.
- Establish Front Street and Wainee Street as local roads within Lahaina Town with an emphasis on enhancing pedestrian and bicycle amenities through (a) reduction of on-street parking; and (b) improvements to pedestrian circulation.

Implementing Actions:

- Establish major recreation ways for pedestrians and bicycles from the pali to Lahaina town and to Kapalua along the coastal highways, including Honoapiilani Highway and Lower Honoapiilani Road, and along the southern side of Kahoma Stream and other major drainage channels.
- Redesign mauka-makai streets in Lahaina town to enhance pedestrian and bicycle movement to include enhanced sidewalk/mall facilities, bicycle lanes, and street furniture with particular attention to Lahainaluna Road.
- Modify Front Street and Wainee between Prison and Papalua Streets for pedestrian/bicycle emphasis. Pedestrian connections through block interiors should be encouraged as part of larger development projects.

Currently the longest bicycle facility on Maui is the signed bike route on Honoapiilani Highway from Maalaea to Kapalua. For improved safety, a lighted warning system has been installed at the tunnel to alert motorists when bicyclists are inside.

Opportunities to develop additional bicycle facilities have opened with the decline of agricultural production. One possibility is a greenway on former cane haul roads from Olowalu, passing in front of Pioneer Mill, and extending to Kaanapali.

5.4 ISLAND OF MOLOKAI

Summary of Molokai Bicycle Facilities

	Signed Shared Roads (mi.)	Bicycle Lanes (mi.)	Shared Use Paths (mi.)	All Facilities (mi.)
Existing	0.0	0.0	0.0	0.0
Underway	5.8	0.0	0.0	5.8
Proposed	52.0	0.0	0.0	52.0
Total Network	57.8	0.0	0.0	57.8

Molokai Community Plan, Infrastructure Goal:

Maintain the East End Highway at its current pavement width except for blind turns or other places necessary for public safety.

- Provide and maintain safe pedestrian trails, bikeways, jogging paths, and equestrian trails along highways.
- Improve the maintenance of roads and shoulders, particularly for local streets in the Kaunakakai area.

Objectives of Bikeway Proposals for the Island of Molokai:

- Except where bicycling will be prohibited, include bicycle facilities in new roadway construction and during rehabilitation of existing roadways.
- Develop bikeway facilities along the existing highways.
- Identify scenic routes along existing highways to promote areas of safe, comfortable, and attractive bike rides.
- Acquire a street sweeper to maintain bikeways.

Although Molokai has no official bicycle facilities, many of the highways that connect the small towns and villages have good shoulders, including Kamehameha V Highway (to Milepost 8), Maunaloa Highway, and the recently improved Kalae Highway. There is sufficient right-of-way to increase the shoulder width along Kamehameha V Highway between Milepost 8 and Milepost 10. Beyond Milepost 10, confusion over property ownership and the presence of historic artifacts make it difficult to widen the narrow roads, and such widening is specifically opposed in the

Community Plan. Nevertheless, the road to Halawa Valley is very scenic and continues to be a favorite bicycling route for residents and visitors. Bicycling events also use this route. Therefore, to better accommodate bicyclists, judicious placement of signs should be considered as an alternative to engineered improvements.

5.5 ISLAND OF LANAI

Summary of Lanai Bicycle Facilities

	Signed Shared Roads (mi.)	Bicycle Lanes (mi.)	Shared Use Paths (mi.)	All Facilities (mi.)
Existing	0.0	0.0	0.0	0.0
Underway	0.0	0.0	0.0	0.0
Proposed	18.2	0.0	0.0	18.2
Total Network	18.2	0.0	0.0	18.2

Objectives of the Bikeway Proposals for the Island of Lanai:

- Except where bicycling will be prohibited, include bicycle facilities in new roadway construction and during rehabilitation of existing roadways.
- Develop bikeway facilities along the existing highways.
- Identify scenic routes along existing highways to promote areas of safe, comfortable, and attractive bike rides.

Lanai has no bikeway facilities, but vehicular traffic on the island is unique in character. Traffic volumes are low, and given the small, close-knit community, motorists drive with much aloha. On the other hand, because bicycling is relatively uncommon, motorists are sometimes surprised when encountering bicyclists on the road.

Bike Plan Hawaii calls for bike facilities to connect the airport and the major resort areas at Koele and Manele Bay. There is also a proposal to formalize a bike route on the scenic, rural road leading to the north end of the island.

5.6 ISLAND OF HAWAII: BIG ISLAND

Summary of Hawaii (Big Island) Bicycle Facilities

	Signed Shared Roads (mi.)	Bicycle Lanes (mi.)	Shared Use Paths (mi.)	All Facilities (mi.)
Existing	18.3	2.8	6.3	27.4
Underway	31.7	9.8	9.4	50.9
Proposed	530.4	49.6	214.4	794.4
Total Network	580.4	62.2	230.1	872.7

Hawaii Long Range Land Transportation Plan (1998): This HDOT document adopts the proposals of *Bike Plan Hawaii*, but also includes “several of the more promising ‘non-motorized roadway’ corridors” that were suggested during the public participation process. Among these proposals are projects now identified as Waimea Greenway and Trails and the Railroad Avenue Bikeway (Hilo to Puna).

Bicycling-related Policy Statements in Local Plans:

Hawaii County General Plan (1989), Transportation Goals

- Provide a transportation system whereby people and goods can move efficiently, safely, comfortably and economically.
- Make available a variety of modes of transportation which best meets the needs of the County.

Thoroughfare and Streets Policy:

- The design of urban streets shall consider their implications for urban design and potential multiple uses of the right-of-way within the limits of feasibility and quality road design.
- The County shall encourage the development of pedestrian and bicycle facilities within designated areas of the community.

Objectives of Bikeway Proposals for the Island of Hawaii:

- Except where bicycling will be prohibited, include bicycle facilities in new roadway construction and during rehabilitation of existing roadways.
- Develop a circumferential bikeway facility along the existing highways.
- Identify scenic routes along existing highways (e.g., Hawaii Belt Road, Queen Kaahumanu Highway, Mamalahoa Highway) and off-highway corridors to promote areas of safe, comfortable, and attractive bike rides.
- Develop designated bike lanes (e.g., Alii Drive, Kuakini Highway) with higher density communities or smaller communities with high volumes of through traffic (Waimea).
- Consider utility easements, abandoned railroad rights-of-way, and old government roads as potential corridors for shared use paths.

Hawaii Volcanoes National Park

In 2002, the Hawaii Volcanoes National Park issued its first comprehensive guide to bicycling in the park. The bicycling project was funded by park fees. An informative pamphlet shows the routes for six bike rides. They range from moderate to challenging and cover some 114 miles through deserts and rain forests, past craters and rift zones.

- Improve connectivity and access between subdivisions by linking dead-end streets with pathways for bicycle and foot traffic.

Hilo

The bike lane on Kanoelehua Avenue, combined with the bike lane on Kamehameha Avenue and proposed bike lane on Bayfront Highway form the basic framework for Hilo’s bikeway network. These facilities provide access to some of the

city's important commercial and recreational areas. Existing bike lanes around the University of Hawaii-Hilo serve another important destination, but could be further improved by linking the campus with the shopping district along Kanoelehua Avenue. Filling in the bikeway grid on the older streets may require right-of-way acquisition or more extensive development (such as covering drainage ditches).



Bike lane along Kanoelehua Avenue, Hilo, Hawaii.

Puna

A top priority of the Puna region is the Railroad Avenue Bikeway, a project supported by County Council Resolution No. 206-2K. The focus of the Puna Railroad Bikeway is to link the bedroom communities in central Puna with schools and businesses in Pahoa, Keaau, and Hilo. The first phase of the project, between Hilo and Hawaiian Paradise Park is under private ownership (W. H. Shipman, Ltd.). At present, use is restricted to those requiring access to farm lots, some private homes, an agricultural dump site, and a powerline utility easement. Low volume, low speed traffic currently on the roadway would be compatible with bicycle use, therefore limited motorized access could continue. With the bikeway as a central spine, feeder bike routes should connect to nearby schools and towns. Future mauka-makai corridors have been identified through several Puna subdivisions; however, the issue of private road ownership will present a hurdle for infrastructure funding. For Keaau town, there are two sets of proposals to develop a bike path system—one by Shipman Ltd and another by the Olaa Historical Society—both are shown on the Bike Plan map, recognizing that the final product may be a blend of the two.



This section of the proposed Railroad Avenue Bikeway, which passes through the Hawaiian Paradise Park subdivision, is composed of packed crushed cinder and currently used for local vehicular circulation. Puna, Hawaii.

Kailua-Kona

The master plan for the Keahole to Keauhou region of North Kona calls for several new north-south arterial and collector roads. The *Keahole to Honaunau Regional Circulation Plan* (expected to be completed in 2003) will map corridors for future rights-of-way and be used to develop ordinances that designate land areas for right-of-way acquisition in pace with development. Several projects are already underway, including widening of Queen Kaahumanu Highway and construction of a



Shoulders along Queen Kaahumanu Highway are well used by athletes in training. Kona Coast, Hawaii.

separate, shared use path in the Queen K right-of-way. Given continuing, high volumes of bicycle riders on the highway shoulders, *Bike Plan Hawaii* recommends the installation of signs that clearly identify Queen Kaahumanu Highway as a bike route. Other projects underway are improvements to Kuakini Highway in Kailua village, the first increment of Ke Ala o Keauhou (previously called the Kahului-Keauhou Parkway or Alii Parkway) from the Lako Street extension to Keauhou, and the Mamalahoa Highway Bypass. All of these road projects will provide and/or improve accommodations for bicyclists.

Walua Road Pedestrian and Bicycle Scenic Route

"Path" section of the Walua Road Pedestrian and Bike Scenic Route.

On May 25, 2000, County officials and residents of Kailua-Kona gathered to celebrate a paved extension around Kaumalumu Gulch. With this link in place, the Big Island built its first shared use path, and the community gained a new amenity—the Old Walua Road Bike and Pedestrian Scenic Route. The 3.6-mile route is actually a combination of off-road path and quiet residential street. Ann Peterson, former executive director of PATH (People's Advocacy for Trails Hawaii) reports on the favorable feedback from residents, among them:

- "I went out and bought a new bike—mine was so rundown from lack of use."
- "Now that there's a safe place to ride, my child is getting a new bike this Christmas."

"Roadway" section of the Walua Road Pedestrian and Bike Scenic Route.



Waimea

Portion of the alignment for Waimea Greenways and Trails, currently a well-trodden footpath. Waimea, Hawaii.

Many Waimea bikeway segments are on relatively hilly terrain, thereby raising several design challenges, such as limited line-of-sight above hill crests and alignment selection for bicyclists of different skill levels. One of the proposals with broad appeal because of its separation from busy highways and consideration of children's needs is Waimea Trails and Greenways. This decade-long



initiative is now in the design stage with funding through the TEA-21 Transportation Enhancement program. The long-term plan is for a network of paths that provide routes for non-motorized circulation within and adjacent to the town. The initial phase of the project is focusing on an alignment close to Waikoloa Stream that will provide "back door" access to schools and businesses along Kawaihae Road and Mamalahoa Highway. Another segment is associated with development of the Ulu Laau Nature Park.



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?



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

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?

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 Kaianiana'ole 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 Kekuanaoa Street (Airport Access Road) from Kanoelehua Avenue to Hilo Airport Terminal
No. 18 (Hilo Close-up Map)

Bike lane on Kekuanaoa 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 Shard 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)

CHAPTER 7

BICYCLE FACILITY PLANNING AND DESIGN

7.1 SELECTING FACILITY TYPE

To varying extents, bicycles will be ridden on all roadways where they are permitted. Therefore, all new roadways, except those where bicyclists will be legally prohibited, should be designed and constructed under the assumption that they will be used for bicycling.

The *Guide for the Development of Bicycle Facilities* (or *Bike Guide*) by the American Association of State Highway and Transportation Officials (AASHTO), 1999, is the primary source for bikeway guidelines used by HDOT. The department also refers to AASHTO's more general design manual, *A Policy on Geometric Design of Highways and Streets* (or *Green Book*), 2001.

Selecting the most appropriate type of bikeway is dependent on many factors, including the targeted user group(s), specific corridor conditions, potential impacts, and facility costs. The FHWA has developed procedures to assist transportation professionals in making appropriate recommendations for on-road bicycle facilities in its publication *Selecting Roadway Design Treatments to Accommodate Bicycles*. At the heart of this document are “look-up” tables that suggest appropriate design treatments given various factors related to traffic operation and design and the environment. HDOT routinely incorporates recommendations derived from this document into the bikeway planning and engineering process.

Making Streets More Bicycle Friendly

Problem Surveys indicate more people would bicycle more often if they had safer places to ride. But so many of today's streets are crowded with fast motor vehicle traffic that nothing is left for the slower cyclist. A lack of operating space along a roadway can make bicyclists and motorists feel uncomfortable or even unsafe.

Solution Provide appropriate on-road facilities and adequate operating space for bicyclists:

- Bike lanes and wide curb lanes in urban and suburban locations
- Paved shoulders along rural highways
- Bicycle access to and from transit stops
- Secure bicycle parking
- Proper maintenance, with regular sweeping and repairs

Source: *Increasing Physical Activity through Community Design*. National Center for Bicycling and Walking, May 2002.

Key parameters that need to be considered when identifying and evaluating roadway treatments to better accommodate bicycling include the following.

User Groups. The intended user needs are identified based on the three types of bicycle users: A-Advanced, B-Basic, and C-Children. Group A riders can generally be accommodated on the majority of roadways by making these facilities more “bicycle friendly.” Group B/C riders can generally be accommodated by identifying select travel corridors (often those with lower traffic demands or lower speeds) and by providing designated bicycle facilities on these routes. (See, also, Chapter 2)

Environment. Urban and rural settings may need different design treatments to appropriately reflect their surroundings.

On-street Parking. The presence of on-street parking increases the width needed in the adjacent travel lane or bike lane to accommodate bicycles. Extended mirrors, inadequate sight lines, and opening car doors can pose potential hazards for bicyclists.

Traffic Volume. Roadways with relatively higher traffic volumes generally represent greater potential risk for bicyclists. Frequent passing and overtaking situations are less comfortable for Group B/C bicyclists unless special design treatments are provided.

Traffic Speed. The average operating speed is more important than the posted speed limit. Wind turbulence caused by higher speed levels can cause bicyclists traveling within the roadway to become unstable and lose control.

Heavy Vehicles. The regular presence of trucks and buses can increase risk and have a negative impact on the comfort of bicyclists. At high speeds, the wind blast from such vehicles can increase the risk of falls. Even at lower operating speeds, shared lane use is less compatible. Bicyclists prefer extra roadway width to accommodate greater separation from such vehicles.

Other Parameters. Other parameters that need to be considered may include curb-cut (driveway) frequency, high crash locations, rumble strips, and grade. Each roadway is unique, and proper measures need to be taken to identify all potential obstacles and opportunities for bicycle travel. For off-road facilities, considerations include landownership, conditions of use, surrounding land uses, and environmental resources.

Signage

Another key document in bikeway planning is the *Manual on Uniform Traffic Control Devices* (MUTCD), 2000, (also at <http://mutcd/fhwa.dot.gov/>) which contains standards for signs and striping used on public roadways. Signs fall into four categories with strict standards as to their shape and color depending on the category:

- Regulatory
- Warning
- Construction
- Information/Guide

The placement of signs should be limited to those necessary to:

- Inform highway users of traffic laws or regulations (regulatory signs).
- Convey a warning that would not be reasonably apparent to a vehicle operator in the interest of his/her safety or that of other vehicle operators, bicyclists, or pedestrians (warning signs).
- Notify drivers and bicyclists of hazards or detours relative to a construction or maintenance project (construction warning signs). Signs should be placed so as not to obstruct bikeways or force cyclists into traffic lanes.
- Guide or direct motorists, bicyclists, or pedestrians (information signs).



(far left) Regulatory sign: black lettering on white
Information sign: white lettering on green

(left) Warning sign: black lettering on yellow



(bottom) Construction warning sign: black lettering on orange

7.2 BICYCLE COMPATIBLE ROADWAYS

On-road bicycle facilities have the most potential to provide key connections in a bicycle network because roadways form the circulatory system of most communities. Generally the most critical variable affecting the ability of a roadway to accommodate bicycle traffic is width. Sufficient roadway width mitigates the impacts of adjacent traffic characteristics (such as traffic volumes, travel speeds, heavy vehicles) on bicyclists. Adequate roadway width for bicycle travel may be achieved by providing paved shoulders, wide curb lanes, or bike lanes.

A resource in bikeway planning is *Flexibility in Highway Design*, U.S. Department of Transportation, Federal Highway Administration. Publication No. FHWA-PD-97-062 (www.fhwa.dot.gov/environment/flex/).

On many streets where traffic volumes and speeds are low, bicyclists can share the road with no modifications to the roadway. Honolulu, Oahu.



7.2.1 PAVED SHOULDERS

Shoulders are appropriate and preferable to bike lanes in rural areas if they are paved and maintained. Given that there are legal differences between shoulders and bike lanes (motor vehicles can use the former, but not the latter), planners and engineers must consider all factors before deciding to implement one versus the other.

The AASHTO *Bike Guide* specifies a minimum width of 4 feet for paved shoulders. Where 4-foot widths cannot be provided, any additional shoulder width is better than none. A shoulder width of 5 feet is recommended when side obstructions are present, such as parked cars, guardrails, barrier curbing, fire hydrants, and utility poles. Additional shoulder width may also be appropriate with increased traffic speeds and truck volumes.

Paved shoulder on Kamehameha Highway, North Shore, Oahu.



A highway right-of-way has several potential uses, including walkway for pedestrians, waiting area for bus riders, and bikeway, Kalanianaʻole Highway, Hawaii Kai, Oahu.

Guidelines for shoulder width in AASHTO's *Green Book* are usually sufficient to accommodate bicyclists.

Reasons for Roadway Shoulders

Safety—highways with paved shoulders have lower accident rates because they:

- Provide space to make evasive maneuvers
- Accommodate driver error
- Add recovery area to regain control of a vehicle
- Provide space for disabled vehicles to stop or drive slowly
- Provide increased sight distance
- Reduce passing conflicts between motor vehicles and bicyclists and pedestrians

Capacity—highways with paved shoulders can carry more traffic because they:

- Allow for easier exiting from travel lanes to side streets
- Provide greater effective turning radii for trucks
- Provide space for disabled vehicles, mail trucks and other delivery vehicles, and bus stops, leaving the travel lane unobstructed
- Provide space for bicyclists to ride at their own pace

Maintenance—highways with paved shoulders are easier to maintain because they:

- Provide structural support and durability to the pavement
- Discharge water further from the travel lanes, reducing the undermining of the base and sub-grade
- Provide space for maintenance operations

Source: Oregon Department of Transportation. June 1995. *Oregon Bicycle and Pedestrian Plan*, 2nd Edition.

7.2.2 WIDE CURB LANES

Wide curb lanes for bicycle use are usually preferred where paved shoulders are typically not provided, such as urban areas where streets are improved with curbs and gutters. In general, 14 feet of usable lane width is recommended for shared use in a wide outside lane. Usable width is defined from lane stripe to edge stripe. Curb lanes less than 14 feet can be intimidating to bicyclists because it is difficult for motor vehicles (especially trucks and buses) to pass. A slightly wider outside lane (15 feet) may be necessary on steeper stretches of roadway where bicyclists need more maneuvering space, adjacent to on-street parking where hazardous conditions for passing bicyclists exist, and where drainage grates and raised reflectors reduce the effective width of the outside lane. Widths much wider than 14 feet that extend continuously along a stretch of roadway may encourage the undesirable operation of two motor vehicles on one lane, especially in urban areas, and are not recommended. Where more than 15 feet of pavement width exists, consideration should be given to striping bike lanes or shoulders.

To implement wide outside lanes on multi-lane roadways where roadway widening is not practical, it is recommended that the inner lanes, left-turn lane, and/or median be narrowed in order to provide more width in the outer lane. AASHTO supports reducing inner lanes to 11 feet meet the minimum design criteria to provide greater width in the right-hand lane.

7.2.3 SIGNED SHARED ROADWAYS

Signed shared roadways are roads that have been identified by signing as preferred bike routes. Signed shared roadways can include paved shoulders or wide outside lanes. There are several reasons for designating signed bike routes:

- the route provides continuity to other bicycle facilities such as bike lanes and shared use paths
- the road is a common route for bicyclists through a high-demand corridor
- in rural areas, the route is preferred for bicycling due to low motor vehicle traffic volume or paved shoulder availability
- the route leads to an internal neighborhood destination, such as a park, school, or commercial district, that is not readily apparent from the main thoroughfare

Signing indicates to bicyclists that there are particular advantages to using these routes compared to alternate routes. However, such routes may not represent ideal conditions for all bicyclists.

Signage is also intended to make motorists more aware of potential bicycling activity along a particular roadway and heightens the overall presence of bicycling within the corridor. Conversely, excessive signage can be confusing and distracting to both motorists and bicyclists, and may lessen the effectiveness of signs in general.

Bicycle Boulevard

Some cities on the Mainland have developed a bikeway type called the “bicycle boulevard,” distinguished by signs or pavement markings. These are residential streets that provide routing alternatives to more highly traveled arterials. To improve travel time for bicyclists, unnecessary “Stop” signs have been removed. At the same time, traffic calming measures may be necessary to discourage motorists from using them as short-cuts. Residential streets meeting the following conditions are optimal locations for bicycle boulevards:

- Existing low vehicle volumes
- Very little commercial frontage
- Roadway parallel to a major arterial or a high-traffic collector street (within approximate ¼ mile)
- Not a transit or truck route
- Roadway is reasonably continuous

The City and County of Honolulu’s Young Street Park Boulevard—currently in design—will establish a prototype facility. The design objective of this project is to create a park-like atmosphere along the street by introducing landscape and hardscape elements to calm traffic, yet retain access for local vehicular traffic. Another prime candidate for designation as a bicycle boulevard is a route in Kaneohe, Oahu, along Pua Inia, Puohala, Aumoku and Namoku Streets (Map Nos. 71 and 71). These interior roadways allow bicyclists to avoid the higher volume traffic on Kamehameha Highway and Kaneohe Bay Drive.

The AASHTO *Bike Guide* recommends that the following criteria be considered prior to signing a route:

- The route provides through and direct travel in bicycle-demand corridors.
 - The route connects discontinuous segments of shared use paths, bike lanes, and/or other bike routes.
 - An effort has been made to adjust traffic control devices (e.g., stop signs, signals) to give greater priority to bicyclists on the routes, as opposed to alternative streets. This could include the placement of bicycle-sensitive detectors where bicyclists are expected to stop.
 - Street parking has been removed or restricted in areas of critical width to provide improved safety.
 - A smooth surface has been provided (e.g., adjust utility covers to grade, install bicycle-safe drainage grates, fill potholes, etc.)
 - Maintenance of the route will be sufficient to prevent accumulation of debris (e.g., regular street sweeping).
 - Wider curb lanes are provided compared to parallel roads.
- Shoulder or curb lane widths generally meet or exceed minimum width requirements: 4 feet for shoulders and 14 feet for wide curb lanes.
 - Placement of reflective bollards and rumble strips allows safe passage by cyclists in traffic and wet weather without causing abrupt maneuvering into the traffic lane.

(left) Bike Route signs can give clearer direction if destination information is provided.

(right) As in this sign, posted along the Airport Viaduct bike path, Makalapa, Oahu.



7.3 BIKE LANES

Bike lanes are constructed when it is desirable to delineate and separate available road space for use by bicyclists and motorists. Bike lanes are typically appropriate for urban and suburban settings. They are marked with the bike lane symbol (the figure of a bicyclist with helmet). Pavement stenciling should include a straight directional arrow to reinforce the one-way travel flow of the bike lane.

The recommended width of bike lanes is 5 feet; however, the optimum width should increase as the roadway conditions become more challenging for bicyclists.

Recommended Bike Lane Widths	Roadway Characteristics
5 feet (4 feet minimum)	Exclusive of the gutter pan and curb
5 feet	Adjacent to barrier curb or other static obstruction on the side of the roadway
5 feet	Adjacent on-street parking

A bike lane should be delineated from the motor vehicle travel lanes with a 6-inch solid white line. An additional 4-inch solid white line can be placed between the parking lane and the bike lane. This second line will encourage parking closer to the curb, providing added separation from motor vehicles and, where parking is light, it can discourage motorists from using the bike lane as a through travel lane.

Bike lanes should be one-way facilities that carry bike traffic in the same direction as adjacent motor vehicle traffic. Two-way bike lanes on one side of the roadway are not recommended when they result in bicycle riding against the flow of motor vehicle traffic. On one-way streets, the bike lane generally should be placed only on the right side of the street. Where this occurs, one-way road couplets should be provided to accommodate bicycle travel in both directions.



*Bike lane on
Farrington Highway,
Kapolei, Oahu.*

If on-street parking is permitted, the bike lane should be placed between the parking area and the travel lane. Bike lanes should never be placed between the parking lane and the curb line. The minimum width for combining a bike lane and parking is 13 feet. Pavement markings should be provided to delineate the parking stalls.

7.3.1 INTERSECTION AND INTERCHANGE STRIPING AND STENCIL PLACEMENT

If a loop detector is embedded in the bike lane, striping can encourage bicyclists to wait in the area where the device is effective. The width of the approaching bike lane should remain consistent and be placed to minimize potential conflicts between bicycles and motor vehicles.

At intersections with exclusive right-turn lanes, the bike lane should continue along the left side of the right-turn lane (see Figure 7-1). In addition, the approach shoulder width should continue through the intersection, where feasible, to accommodate right-turning bicyclists or bicyclists who prefer to use crosswalks. The solid striping to the approach should be replaced with a broken line consisting of 2-foot dashes and 6-foot spaces. The length of the broken line section is usually 50 to 200 feet.

When significant bicycle volumes are present, a left-turn bike lane may be provided, in which case it should be located to the right of the right-most left-turn only lane (see Figure 7-2).

Figure 7-1

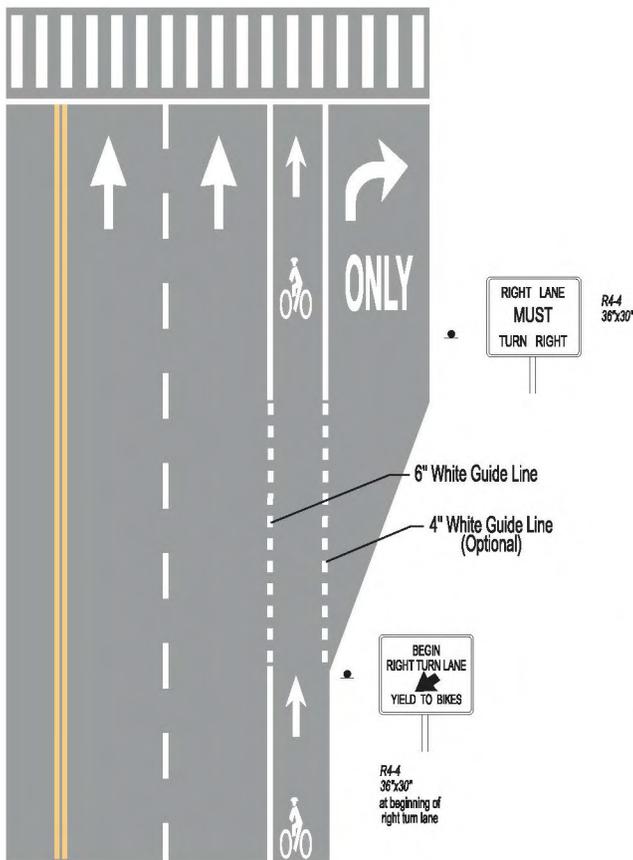
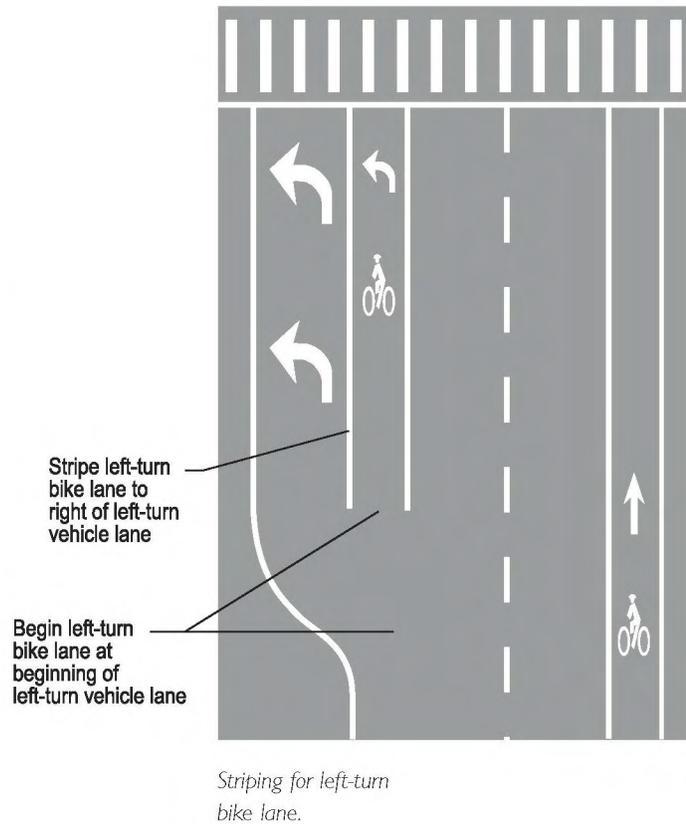


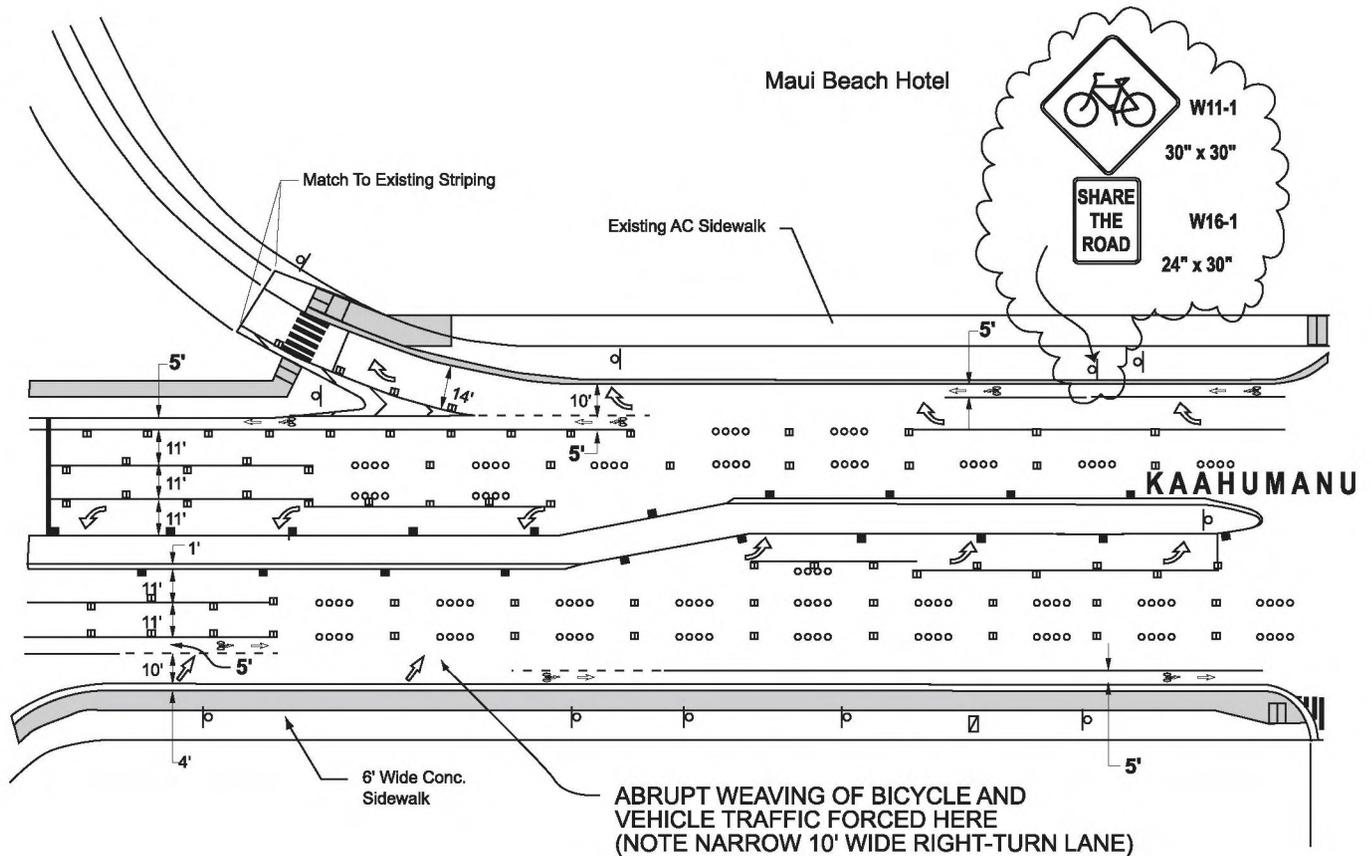
Figure 7-2



Bike lane striping for through travel at intersections with right-turn only lane.

Figure 7-3 shows an actual example of pavement markings at an intersection involving a right-turn deceleration lane (Kaahumanu Avenue at Kahului Beach Road, Kahului, Maui). While Figure 7-1 shows a more desirable lane configuration, not all roadways have the option of being designed with a separate deceleration lane. Figure 7-3 illustrates a way to make the lane drop more “bike friendly,” with pavement markings that make the bicycle travel zone more predictable to motorists and cyclists.

Figure 7-3



Ingress and egress points at interchange ramps create a similar situation requiring bicyclists to merge, weave, or cross other vehicles. These potential conflict points are more difficult when there is a wide disparity in speed between traffic on the ramp and bicycle traffic crossing the ramp, or significant grade separations. If a bike lane or route must pass through an interchange area, appropriate signage and striping should be designed to limit potential conflict areas and define the crossing/weaving area.

Example of bike lane with dedicated right-turn lane. Kaahumanu Avenue, Kahului, Maui.

Where adequate road space is available, bike lane-type striping through intersections is recommended even in areas with shoulder bikeways or wide curb lanes.

Stencils should be placed after most intersections; this alerts drivers and bicyclists entering the roadway of the exclusive nature of the bike lanes. Stencils should be placed after every intersection where a parking lane is placed between the bike lane and the curb. Supplementary stencils may also be placed at the end of a block to warn cyclists not to enter a bike lane on the wrong side of the road. To prevent premature wear, care must be taken to avoid placing stencils in an area where motor vehicles are expected to cross a bike lane—usually driveways and the area immediately after an intersection.

Figure 7-4 shows a typical intersection layout, including bike lane striping and placement of stencils and signs. The intersection is made bike friendly by providing space near the traffic islands, as well as pavement markings and signs denoting shared lanes.

Figure 7-5 contains details of bike lane striping and stencils.

The bike lane directs bicyclists to ride close to traffic, where they are more visible to motorists. Honolulu, Oahu.



Figure 7-4

Typical intersection layout showing bike lane striping and placement of stencils and signs.

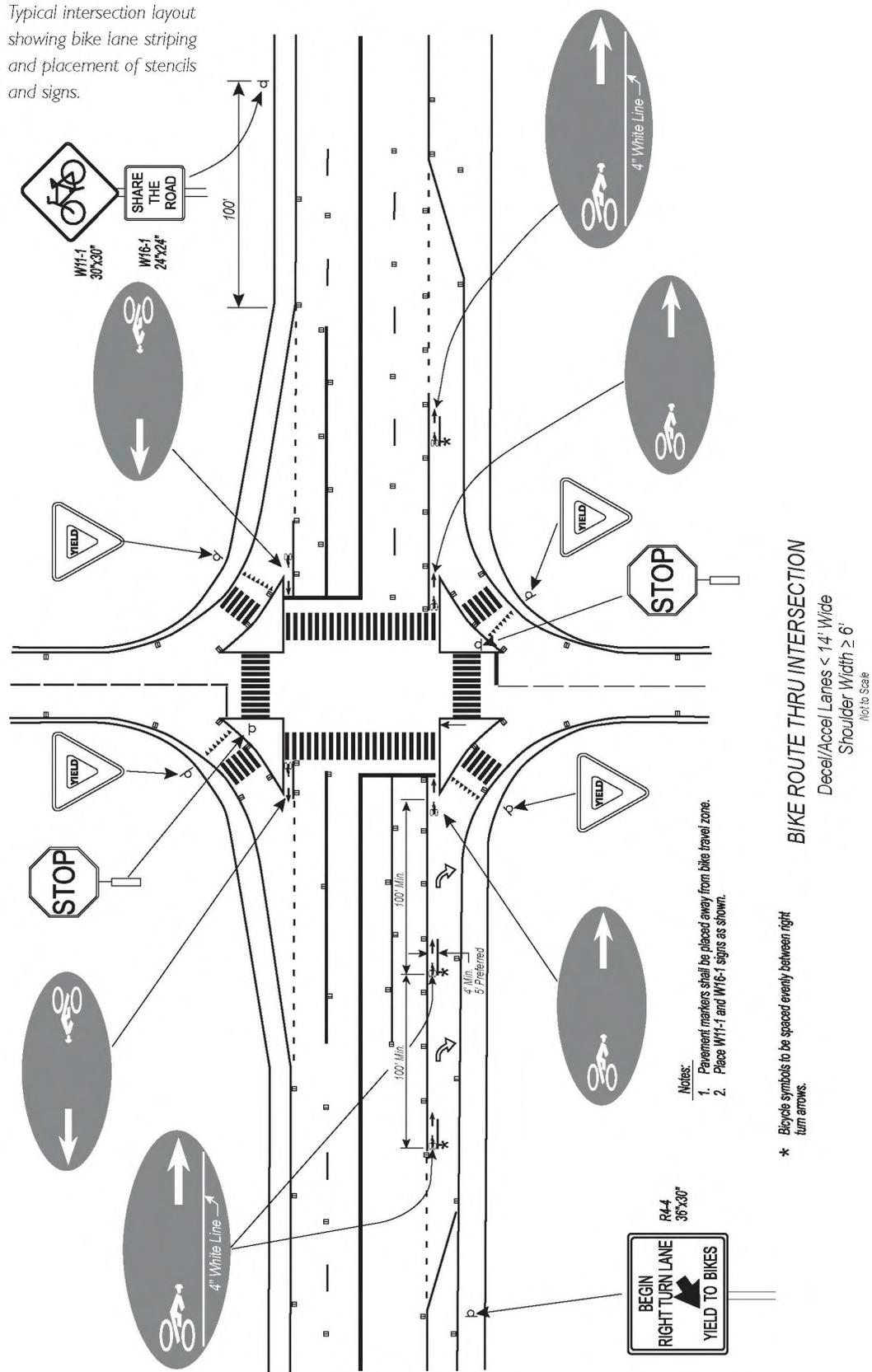
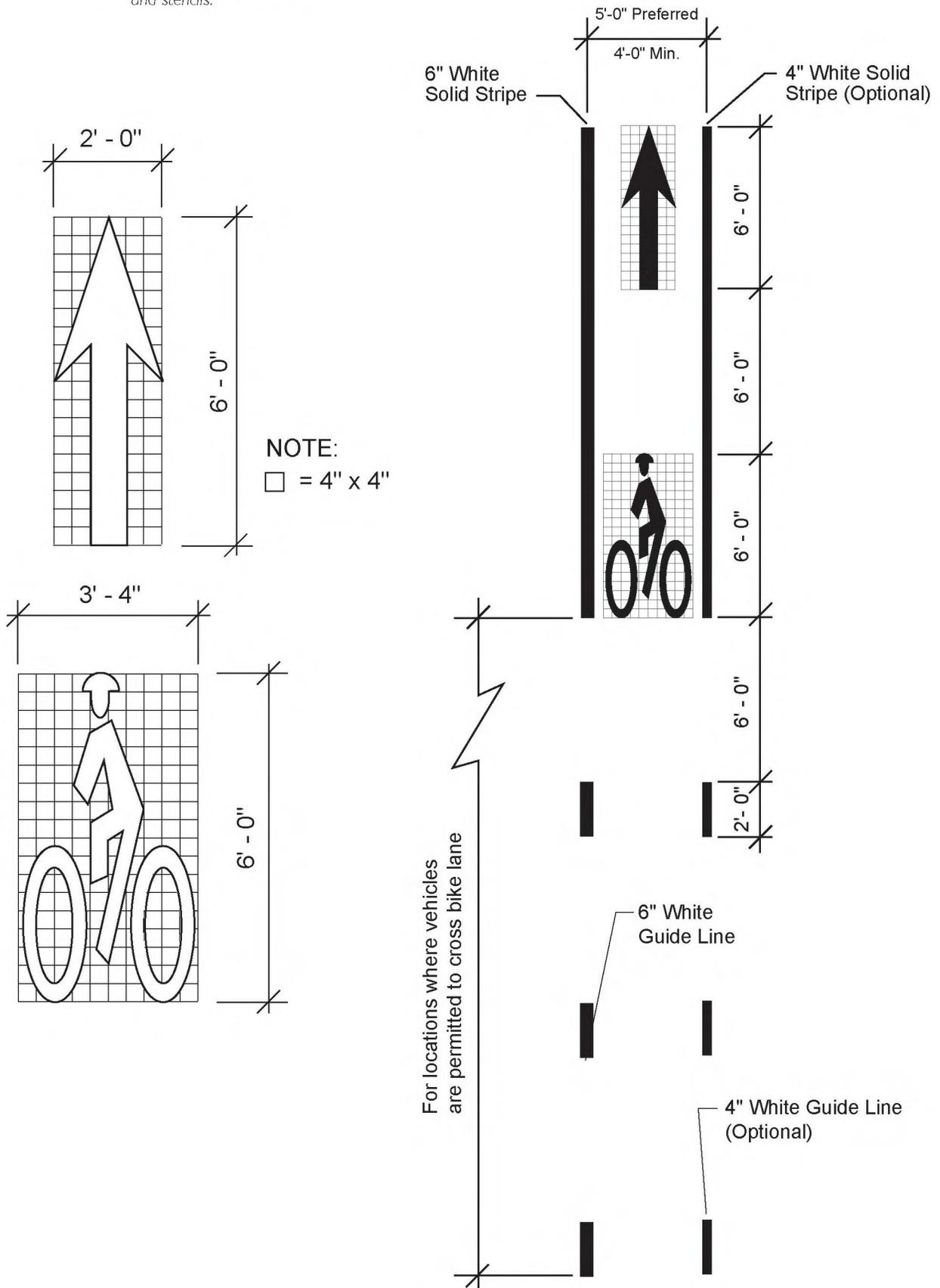


Figure 7-5

Detail of bike lane striping and stencils.



7.3.2 FINDING SPACE FOR BIKE LANES

A number of alternatives are available where roadways must be retrofitted to accommodate bike lanes.

Alternatives	Considerations
Prohibit on-street parking to provide bike lane	Bike lanes are infeasible on streets with variable parking, i.e., where parking is permitted during the day, but turns into a travel lane during peak periods.
Reduce travel-lane width—12-foot lane widths could be narrowed to 11 feet and bike lane provided	This scheme is usually impractical if existing travel lanes are already 11 feet or less. For local urban streets, lanes may be reduced to 10 feet with due consideration to existing traffic characteristics based on an engineering study.
Remove travel lane and convert to bike lane	Loss of roadway capacity may result in congestion for motor vehicles.
Widen existing roadways to provide bike lane	An extremely expensive undertaking if buildings are already constructed up to property line. May be possible if a building setback has been delineated.

Where space is a major limitation, bike routes will have to suffice until space can be made available. Nevertheless, it is recommended that bike lanes be the ultimate goal in urban areas.

7.4 SHARED USE PATHS

A shared use path is a bikeway that is physically separated from motor vehicle traffic by open space or a barrier. Shared use paths typically are developed on a continuous right-of-way that experiences minimal crossflow by motor vehicles. Installing a shared use path should not preclude the installation of on-road bicycle facilities.

Shared use paths are commonly designed for two-way travel. Under most conditions, the recommended paved width for a bi-directional path is 10 feet. Users may include bicyclists,

Using Sidewalks as Bikeways

In residential areas, sidewalk riding by young children is common. Potential conflicts are somewhat lessened with lower bicycle speeds and lower auto speeds; however, they still exist and the use of sidewalks for bicycle travel is generally unsatisfactory. Even if extra-wide sidewalks are constructed, it does not necessarily add to the safety of bicycle travel, since wide sidewalks encourage higher speed bicycle use and increase the potential for conflicts with motor vehicles at intersections and driveways—where drivers generally do not expect fast-moving objects to be traveling on sidewalks, and may not be able to respond quickly enough. Conflicts between bicyclists and pedestrians or bicyclists and fixed objects may also occur.

Sidewalk bikeways should be considered only under very limited circumstances, such as:

- Providing bikeway continuity along high speed or heavily traveled roadways having inadequate space for bicyclists, and uninterrupted by driveways and intersections for long distances
- On long, narrow bridges, where ramps are installed at the sidewalk approaches.

The Pearl Harbor Historic Trail is popular with many types of users. Aiea-Pearl City, Oahu.



Pedestrian (left) and bicycle (right) paths are separated by a hedge. Waikēle, Oahu.



skaters, skateboarders, wheelchair users (both non-motorized and motorized), and pedestrians including walkers, runners, people with baby strollers, and dog-walkers. If the path is expected to carry a large number or wide variety of users, or is required to accommodate large maintenance vehicles, or involves steep grades, it may be necessary or desirable to increase the width to 12 feet, or even 14 feet. Shared use paths can also be striped to separate user types and reduce potential conflicts.

A minimum 2-foot wide graded area should be maintained adjacent to both sides of the path; 3 feet if there are signs, trees, poles, fences, guardrails, and other obstructions. Where the path is adjacent to canals, ditches, or steep slopes, a wider separation should be considered. Other situations may dictate a physical barrier, such as dense shrubbery, railing, or chain link fence.

Preferred Locations for Shared Use Paths

- Coastlines
- Abandoned railroad rights-of-way
- Cane haul roads
- Streams and canals
- Parks and nature areas
- Utility easements
- Connections between streets with cul-de-sacs



Longer, unbroken corridors, such as this remnant of Old Mamalahoa Highway, have good potential as off-road bikeways. South of Waimea, Hawaii.



A short-cut connects this residential street with a school campus just beyond. Mililani Mauka, Oahu.

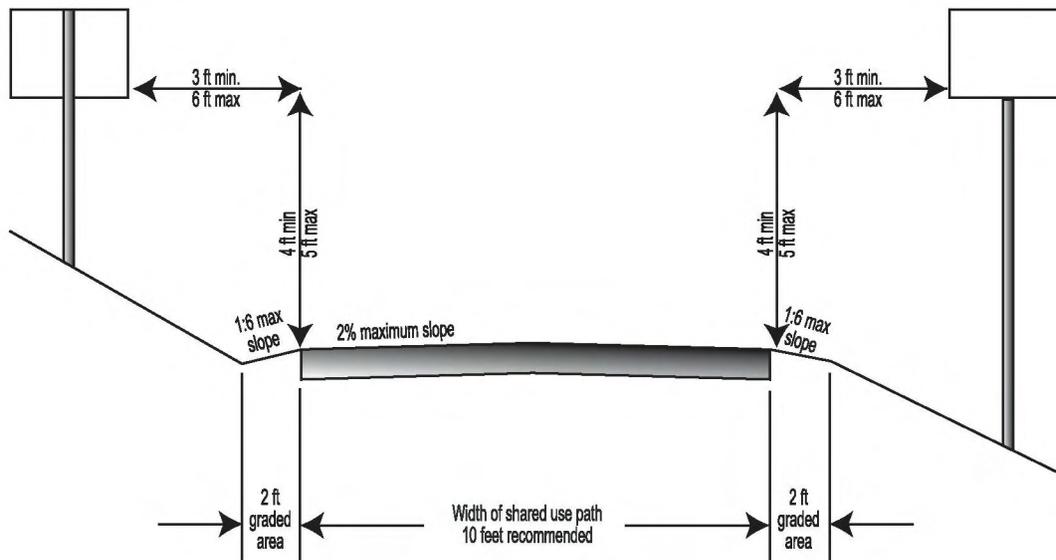
The vertical clearance to obstructions should be a minimum of 8 feet. Vertical clearance may need to be greater to permit passage of maintenance and emergency vehicles. See Figure 7-6 for a typical section of a shared use path.

When a shared use path is located adjacent to a roadway, a wide separation is desirable. This demonstrates to both the bicyclist and the motorist that the path functions as an independent facility. A 5-foot separation between the edge of the highway shoulder and the shared use path is desirable. If this is not possible, a suitable physical barrier is recommended.

ADA guidelines require that cross slopes not exceed 2% to avoid the severe difficulties that greater cross slopes can create for people using wheelchairs. In addition, grades on shared use paths should be kept to a minimum. Grades greater than 5% are undesirable.

Figure 7-6

Typical cross-section of a two-way shared use path.



7.4.1 STRIPING AND SIGNAGE

Adequate signing and marking are essential on shared use paths. Crossing signs are needed on roadways to provide appropriate warning to motorists of an upcoming path intersection. In addition, directional signing on a path—for example, to indicate destinations, distances, route numbers, and names of cross streets—should be used in the same manner as they are used on highways.

7.4.2 INTERSECTIONS

Intersections between paths and roadways are often the most critical issue in shared use path design. Shared use paths should cross roadways as close to an intersecting road as practical. This allows for good sight distances for both motorists and bicyclists. As the path approaches the

This mid-block crossing on the Ala Wai Promenade near the Hawaii Convention Center is a challenge for users. Honolulu, Oahu.



crossing, it should be aligned with the destination of the crossing on the other side of the road. Curb cuts should be appropriately aligned and be the same width as the path. The crossing should also be as perpendicular as possible to the road being crossed.

7.5 PAVEMENT CONDITION AND OBSTRUCTIONS

Bicyclists tend to ride a distance of 32 to 40 inches from a curb face; therefore, it is important that the surface in this area be smooth and free of debris. The smoothness of the riding surface affects the comfort, safety, and speed of bicyclists. Wide cracks, joints, or drop-offs at the edge of the travel way can trap a bicycle wheel and cause loss of control. Holes and bumps in the pavement can cause bicyclists to swerve into the path of adjacent motor vehicle traffic. In areas with irregular surface conditions, either the obstacles need to be addressed or the width of the bicycle accommodation adjusted to maintain a uniform usable pavement width.



Rumble strips on Kalanianaʻole Highway. Waimanalo, Oahu.

Manhole covers and utility plates present obstacles to bicyclists due to their slipperiness and change in surface elevation with the surrounding pavement. While they can be retrofitted to minimize their adverse impacts, it is best to design the roadway so they are not located within the typical path of bicyclists.

Drainage grates should be placed outside the paved shoulder area. If the grate encroaches on the shoulder, there should be a minimum of 4 feet of clear asphalt. Regardless of placement or type of roadway, all grates on the roadway should be bicycle safe.

Rumble strips are vertical interruptions in the pavement surface intended to alert drivers through sound and vibration. Where bicyclists are expected to share the road with motorists, a clear space of 18 to 24 inches through which bikes may travel should be provided at the right-hand

edge and in the center of the travel lane. They should not be installed in bike lanes on streets with bike lanes. On shoulders, rumble strips can be depressed grooves or raised pavement markers. Shoulder rumble strips should be placed adjacent to the edge stripe with a minimum of four feet of usable shoulder width available to the right of the grooves or raised pavement markers.

In existing roadways where there are no roadside swales or curbs and gutters, shoulders also act as a drainage swale. Hydraulic capacity in those cases should not be reduced. Spread from the runoff will encroach into the driving lane and might create a hazardous driving situation.

When asphalt berms (sometimes called “slugs”) are constructed on roadway shoulders to divert storm water into catch basins, or to separate non-motorized travel from the vehicular travel lane, they should be constructed in a manner that will not obstruct bicyclists from using the shoulder or transitioning between the shoulder and the travel lane (for example to pass pedestrians who also using use the travel way).



Asphalt berms separate motorized and non-motorized travel ways on Puainako Street, Hilo, Hawaii.

All bikeways should be maintained during construction that affects high speed arterials or highways. If construction detours are implemented, they should accommodate bicycles through the entire length of the detour. Construction warning and detour signing designed for bicycles should be used throughout the entire construction zone, with care taken not to obstruct any operational bike lane or shoulder. Construction plates used on the roadway should be skid resistant and installed flush with the surrounding pavement or marked as an obstacle. When they cannot be provided flush, then ramps of asphalt should be provided to reduce the difficulty for bicyclists.

7.6 OTHER BICYCLE FACILITIES

If commuting and recreational bicycling are to be encouraged in Hawaii, some thought must be given to facilities that enhance the convenience and enjoyment of bicycling. Other accommodations for bicyclists include secure parking facilities, comfort stations and rest stops, and easy transitions to other modes of transportation.

7.6.1 BICYCLE PARKING AND STORAGE

Secure bicycle parking facilities must be provided at important bicycle destinations. These would include major employment and shopping centers, schools and universities, cultural and recreational centers, and in particular, mass transportation stops/stations (such as park-and-ride

facilities, bus terminals and major transfer points, and ferry landings).

Many types of parking facilities are possible. The degree of security depends on (1) the structural design and (2) the location of the facility. The following types are listed according to degree of security offered by each, low to high:

- Personal chain, cable, and lock
- Bicycle rack
- Bicycle rack with chain or cable
- Bicycle rack with frame or wheel clamp
- Bicycle rack with frame or wheel clamp and lock
- Bicycle locker
- Bicycle enclosure
- Supervised or attended parking facility

Guidelines for locating bike racks:

- Racks should not be obscured by landscaping, fences, or other obstructions
- Racks should be lit at night to protect both the bicycle and the user
- Racks should be located within 50 feet of building entrance and clearly visible from the building entrance and its approaches, or there should be a sign indicating the location of bicycle parking

Bike racks have become a common feature of the streetscape. Honolulu, Oahu.



Bike Rack Program in Honolulu

The City and County of Honolulu has engaged in an extensive program to install bicycle racks in high-demand areas. Purchase and installation of the racks has cost about \$125,000 with monies from the Bikeway Fund. Chris Sayers, Honolulu Bicycle Coordinator, explains the effort, as follows:

In 1994 I started with the “ribbon” racks in municipal lots and places where there was sufficient space. These racks hold up to 9 bikes. In 1996 I started looking at the sidewalk area because, by ordinance, bicycles are prohibited from parking on sidewalks except in bike racks. Well there weren’t any racks on the sidewalks. So we started with the inverted U-shaped racks. In 1998 Mayor Harris decided he wanted something more aesthetically pleasing and asked me to find some new designs. I found the Dero “BikeBike” on the internet. We have since installed about 330 of these.

As far as where they get installed, we don’t have any set guidelines but I like to get 5 feet of clearance so generally we need an 8-foot sidewalk. Sometimes I get requests but mostly I’ve been going out looking for locations. The main thing is that they don’t impede pedestrian traffic.

I’ve gotten many positive comments about the “Bike bike racks.” People feel that even when there are no bikes parked in them it’s sort of free advertising for bicycling. Another subtle benefit is that we install them in the direction that bikes should be traveling—sort of a subliminal way of deterring wrong-way riding. And of course they look nice.

- Signage directing bicyclists to an appropriate parking location should be readily apparent wherever a “No Bicycle Parking” sign is posted
- Ground surface of the bicycle parking area should be an all-weather and drainable material, such as asphalt or concrete
- Racks should be located outside the typical pedestrian travel path, and visible to pedestrians
- Racks should be located a sufficient distance from motor vehicles to prevent damage to parked bicycles and motor vehicles



*Bike rack on Kapiolani Boulevard.
Honolulu, Oahu.*

7.6.2 COMFORT STATIONS AND BIKE STATIONS

Comfort/bike stations could be a more significant part of Hawaii’s bikeway system, especially in relation to recreational and commuter bicycling and in conjunction with intermodal use of bicycles.

In many cases, facilities available at state and county parks already provide places for bicyclists to rest, obtain water, and find protection from the weather. If they are located at intervals suited to the average pedal distances of bicyclists, additional comfort stations need not be specially constructed. More basic stops, providing only shelter and water, might be considered near steep terrain and in high-rainfall areas. In other areas, more comprehensive comfort stations may be warranted, for example, as part of longer distance, perimeter bikeways. These would be especially convenient for touring bicyclists and could include restrooms, drinking water, secure parking facilities, and shelter. Shower facilities are another feature that could be provided at comfort stations located at intermodal terminals, employment centers, and larger educational institutions.

The City and County of Honolulu is currently building the first bicycle station on the Kapiolani Community College campus, adjacent to Diamond Head Road. The facility is located along an existing bike path. Users are expected to include college commuters and recreational cyclists touring the Diamond Head area. The new building will house men’s and women’s restrooms and shower/dressing room facilities, with bike racks, drinking fountain, and picnic tables nearby.

7.7 INTERMODAL ACCOMMODATIONS

Being light and compact, bicycles offer a variety of opportunities for use in conjunction with other modes of transportation. Transporting a bicycle on a car, bus, ferry, or airplane gives a bicyclist greater flexibility in terms of travel distance, effort expended, and time needed.

7.7.1 BIKES ON BUSES

The entire fleet of the Oahu Transit Service (TheBus) is outfitted with racks capable of holding two bicycles at any one time. Since 1995, older buses have been retrofitted, while new buses have been ordered with racks attached. There is no additional charge for bicycles.



Hele-on Bus on the Big Island is also capable of transporting bicycles. The fleet includes two types of buses—vehicles with underneath storage space which is used for bicycles and refurbished buses from Oahu in which case bicycles are brought on board. The Hawaii County Bus Transit Agency recommends that bicyclists call to pre-arrange transport since the ability to accommodate bicycles is contingent on space availability.

*TheBus with bike rack.
Honolulu, Oahu.*

7.7.2 BIKES ON AIRPLANES AND FERRIES

Regularly scheduled, commercial flights generally allow passengers to check in bicycles as baggage. Each of the three major interisland carriers will transport bicycles for a fee of \$20.00 one way. Bicycles must be packed in passenger supplied boxes or hard cases, and are loaded on a space-available basis.

Ferry service is currently available between Maui and Molokai and between Maui and Lanai. Bicycles can be transported on board the ferries for fees of \$10-15 one way. They do not have to be packed, but passengers may need to supply ropes or elastic cords to secure their vehicle.

7.8 OPERATION AND MAINTENANCE OF FACILITIES

*Shoulder maintenance
needed on this stretch of
Kamehameha Highway.
Windward Oahu.*



John Goody

Maintenance is an important consideration for all transportation facilities including on-road bicycle facilities and shared use (off-road) paths. A well-cared facility will help to reduce accidental falls and is more likely to attract users. For bicyclists, roadway surface condition is a major factor in their choice of routes, safety of travel, and enjoyment of the experience.

Maintenance operations are usually undertaken by the public agency with jurisdiction over the facility; however, in some instances, nonprofit groups and private organizations may assist in some maintenance tasks.

Sweeping and litter removal is the central task of routine maintenance. Periodic maintenance also include a more extensive set of activities, such as trash and litter removal, pavement repair,

replacement of signs, restriping, and pruning and mowing to control landscaping encroachment into the bikeway. Table 7-1 identifies a potential schedule for various maintenance activities.

Some of the needed maintenance activities represent new tasks for maintenance crews and would require additional or re-allocated funding to be accomplished.

**Table 7-1
Potential Maintenance Schedule**

Maintenance Activity	Recommended Frequency
<i>On-road Bikeways</i>	
Routine inspection and identification of needed repairs	2 times per year
Respond to reports of hazardous pavement failure	As needed
Sweep street with bike lanes and highway shoulders	4 times per year (once a quarter)
Maintain street traffic markings	As needed, at least every 3 years
Repair or replace signs and pavement markings	As needed
Maintain landscaping encroachment	As needed
Sweeping during construction	Daily
<i>Off-road Bikeways</i>	
Routine inspection and identification of needed repairs	2 times per year
Sweep paved bikeways	2 times per year
Path repairs	As needed
Repair or replace signs and pavement markings	As needed
Vegetation control	As needed
Path resurfacing	10-12 years



*Street sweeping along
Farrington Highway,
Waianae Coast, Oahu.*

Nonprofit groups and organizations may be able to assist in some tasks. In the past volunteers have cleaned up segments of the Pearl Harbor Bike Path as a public service activity. Implementation of a regular volunteer program, similar to the Adopt a Highway Program, would help to extend State and local resources that are available for maintenance activities.

Volunteers clean up the Pearl Harbor Bike Path as part of a community service project.



Lisa Reinke



Lisa Reinke

Citizens may notify HDOT of bikeway hazards on state roadways and submit specific maintenance requests by contacting the State Bicycle and Pedestrian Coordinator. *Bike Plan Hawaii* also recommends that the HDOT bike webpage be configured to allow bikeway users to report maintenance concerns.

The City and County of Honolulu Bicycle Coordinator and the Departments of Public Works on the neighbor islands are available to field reports of bicycling hazards on county roadways.

CHAPTER 8

PLAN IMPLEMENTATION STRATEGIES

8.1 IMPLEMENTATION: FROM PLAN TO REALITY

The primary emphasis in modern land transportation planning has been to accommodate motor vehicles. Cars, trucks, and buses will continue to be important in moving people and goods throughout the state; however, there is a role for other modes of travel as well. The purpose of this master plan is to identify ways in which bicycling facilities—and the environment for bicycling, more generally—can be improved, thereby giving people more meaningful modal choices. To achieve the objectives contained in this plan will require long-term, incremental changes that go beyond the process of creating the plan itself. Implementation will depend on continued work within HDOT, coordination with County governments, and sustained public involvement.

8.2 COORDINATION WITH COUNTY GOVERNMENTS

Bike Plan Hawaii guides the activities of the State Department of Transportation; however, the proposed bikeway network includes facilities that are outside State jurisdiction. The plan recognizes that coordination between State and County efforts is essential in realizing statewide improvements in bicycle transportation.

HDOT's interests can be categorized into three levels:

- **State-owned components** encompassing the State highway system in which HDOT policies govern the planning, designing, construction, and maintenance of facilities.
- **State-assisted components** including roadways where there is State and/or Federal investment in local projects. HDOT collaborates in the decision-making process for projects on these routes, thereby influencing the planning and design decisions made for those improvements.
- **State-interest components** including County and private roads. HDOT has an interest in ensuring that the bicycle network is interconnected and serves the mobility and accessibility needs of bicyclists. HDOT has no oversight responsibilities for the planning and design of this system.

To facilitate plan implementation, HDOT has worked with County transportation and planning agencies in developing the plan. County governments are encouraged to incorporate *Bike Plan Hawaii* into their general plan and community plans, and to consult the master plan maps when reviewing development proposals or making permitting decisions.

Other opportunities for State-County coordination on bike route planning should be identified. These include, for example, the City and County of Honolulu's Street Tree Beautification Program (administered by the Department of Parks and Recreation) and the Livable Community Projects.

8.3 PUBLIC INVOLVEMENT

This document is a tool for citizens of Hawaii to advocate for and support State and County investment in bicycle facilities and programs. Bicycle advisory committees and bicycling advocacy groups are encouraged to implement the plan by continuing to offer comments and suggestions on specific projects and the execution of recommended programmatic actions. Comments provided during the formative stages of project development are more likely to be accommodated. Interested groups and individuals are also welcome to participate in the decision-making process to fund transportation projects.

The Statewide Transportation Improvement Program (STIP) is the official document required for approval of Federal funds in surface transportation projects. It is a three-year programming document that identifies and establishes the implementation priority for State and County transportation projects to be funded in part with Federal highway or transit funds. A limited number of agencies are authorized to submit proposals. HDOT can propose inclusion of State projects in the STIP. With the consent of their respective Mayors and Councils, the Department

Land Use Regulations as a Partner in Bikeway Development

Language in land use regulations can support the development of bikeways through one or more of the following mechanisms:

- Recommend that bicycle access be included as part of *all* development proposals
- Require that bicycle access be provided in all new development proposed within *specific geographic areas*
- Require that bicycle access be provided for *specific types of new development*
- Require that bicycle access be provided in accordance with *specific design criteria*
- Require that *all new site plans show existing and proposed bicycle facilities*
- Offer *regulatory bonuses or relief from regulatory burdens* for development projects that incorporate high-quality bicycling amenities in accordance with local goals and plans



Waipio Gentry is a model for promoting non-motorized modes of transportation. A network of internal pathways connect streets with

cul-de-sacs, provide access to the local elementary school and park, and links with the adjacent Crestview community. Waipio, Oahu.

of Transportation Services on Oahu and the Departments of Public Works on the neighbor islands can propose inclusion of County projects in the STIP.

As the state's only metropolitan region, the City and County of Honolulu works through a metropolitan planning organization (the Oahu Metropolitan Planning Organization or OMPO) which oversees preparation of the Oahu Transportation Improvement Program (TIP). When approved by the Policy Committee (the decision-making body of OMPO) and the Governor, the TIP is incorporated as the Oahu element of the STIP. The other three counties go through a similar process led by HDOT. The outcomes of their deliberations are incorporated directly into the STIP. Projects in the STIP must be consistent with each county's respective long-range transportation plan. The STIP is updated at least every two years and may be amended as necessary. The STIP and Oahu TIP are closely related to the State's and Counties' capital improvement programs.

Public input can be made in the development of the regional transportation plans and in development of the STIP and Oahu TIP. Public comments may be solicited at scheduled meetings of the Citizen Advisory Committee or other forums. Interested parties also have an opportunity to comment on the Review Draft and significant revisions prior to approval of the final documents.

For transportation projects that do not go through the STIP/TIP process, implementing agencies, such as HDOT and the County transportation agencies, hold public information meetings or hearings on specific projects. As government entities, they are required to provide published meeting notices, receive oral and/or written comments, and indicate the disposition of significant comments received.

8.4 FUNDING

Effective funding for bicycle facilities is critical to the implementation of the plan, yet the limitations of public funds are an unavoidable fact of life. One popular means of funding projects is to include bicycle accommodations as part of larger roadway improvement projects. Such "incidental" improvements are made in conjunction with new construction and reconstruction projects, many of which use State, County, and/or

Funding 101: A Short Course in Funding Decisions

- FHWA potentially may reimburse up to 80% of total eligible project costs. Because FHWA funds are accessed through a reimbursement process, State or County funds must be appropriated and expended upfront. The unreimbursable "local match" may be in the form of State and/or County funds; fair market value of donated labor; land or materials; non-FHWA Federal funds; or a combination thereof.
- Bicycle projects cannot use State funds unless the Legislature appropriates the funds and the Governor allots the funds.
- Bicycle projects cannot use County funds unless a County Council appropriates the funds and the respective Mayor allots the funds.
- FHWA will not reimburse State or County expenditures for a bicycle project unless the project is included in the Statewide Transportation Improvement Program (STIP) and all other FHWA requirements are met.
- The HDOT Director determines which neighbor island projects are included in the STIP.
- Within fiscal constraints set by the HDOT Director, the Oahu Metropolitan Planning Organization determines which Oahu projects are included in the STIP.

Federal funding. Incidental projects could include paved shoulders, bike lanes, or wide curb lanes. HDOT and County public works departments have made significant improvements in bicycle accommodations through this means.

Another important type of bikeway project can be described as stand-alone or independent. These projects are not necessarily tied to larger projects in terms of timing or location. Retrofitting projects and paths tend to fall in this category. Given the strong demand for limited funds, funding is very competitive.

8.4.1 TEA-21

While TEA-21 provides tremendous flexibility in funding bicycle and pedestrian improvements, it retains the requirement that bicycle projects be “principally for transportation rather than recreation purposes,” with the exception of the Recreational Trails Program. FHWA has determined that to meet the “transportation purpose” requirement, a bicycle facility must be more than a closed loop trail within a park that can *only* be used for recreational purposes—users must be able to get somewhere other than back to their starting point. Beyond this, any bicycle facility providing access from one point to another can and will be used for transportation purposes and is therefore eligible for funding under TEA-21. While bicycle projects now qualify for more funding programs; nationwide, relatively few projects exclusively for bicycling have been funded by categories other than Transportation Enhancement and Recreational Trails.

With TEA-21 scheduled to expire at the end of FY 2003, Congress is working on a new transportation authorization bill.

8.4.2 FEDERAL-AID HIGHWAY PROGRAM— NATIONAL HIGHWAY SYSTEM (NHS)

National Highway System funds are restricted to projects within NHS corridors. Bicycle transportation facilities may be funded through this source if located on land adjacent to any highway on the National Highway System. This does not mean the project has to be physically located within the same right-of-way, but the project must serve essentially the same route as the NHS corridor. For example, construction of a shared use path following a freeway corridor would be eligible for NHS funds if the intent of the path is to reduce the number of short-distance automobile trips on that freeway.

Actual FY01: \$47,433,000

Actual FY02: \$48,032,000

Estimated FY03: \$44,460,000

8.4.3 SURFACE TRANSPORTATION PROGRAM (STP) FLEXIBLE

Surface Transportation Program (STP) funds can be used flexibly to reimburse State or County agency expenditures for a wide variety of transportation purposes, including new roads, bridges, and resurfacing. STP funds may also be used for either the construction of bicycle transportation facilities or non-construction projects related to safe bicycle use (such as maps, brochures, and public service announcements).

Actual FY01: \$29,196,000

Actual FY02: \$29,588,000

Estimated FY03: \$27,339,000

8.4.4 CONGESTION MITIGATION AND AIR QUALITY (CMAQ) IMPROVEMENT PROGRAM

The CMAQ component funds projects and programs that reduce transportation-related emissions. Funds are distributed based on population and the severity of pollution. Since Hawaii does not have air quality issues, the severity of pollution is not a factor in determining the state's share. Furthermore, unlike states that do have air quality problems, Hawaii has total discretion to use CMAQ funds, similar to STP Flexible funds.

Actual FY01: \$8,904,000

Actual FY02: \$9,023,000

Estimated FY03: \$8,284,000

8.4.5 TRANSPORTATION ENHANCEMENT (TE)

Both STP Flexible and CMAQ funds may be used for Transportation Enhancement (TE) activities; however, of the State's apportionment of flexible FHWA funds, 10% is specifically set aside, and can *only* be used for TE activities. In Hawaii, the TE funds total between \$3 and \$4 million per year.

The law provides a specific list of activities that are eligible for TE funding and these include "provision of facilities for pedestrians and bicycles, provision of safety and educational activities for pedestrians and bicyclists," and the "preservation of abandoned railway corridors (including the conversion and use thereof for pedestrian and bicycle trails)."

TE is managed and administered by HDOT at the state level. Between FY 1992 and FY 2001, the TE Program set aside a total of \$51.3 million in all categories of projects across Hawaii.

A Request for Proposals to use FHWA TE funds is issued periodically by HDOT. Only five agencies are authorized to submit their own TE proposals: HDOT, Honolulu Department of Transportation Services, Kauai County Department of Public Works, Maui County Department of Public Works, and Hawaii County Department of Public Works. Upon request, these agencies will submit TE proposals by other public agencies or private organizations.

Eligible Categories for Transportation Enhancement Funding

Currently there are twelve TE Program categories eligible for funding:

- Provision of facilities for bicycles and pedestrians
- Provision of safety and educational activities for bicyclists and pedestrians
- Acquisition of scenic easements and scenic or historic sites,
- Scenic or historic highway programs (including tourist and welcome center facilities)
- Landscaping and other scenic beautification
- Historic preservation
- Rehabilitation and operation of historic transportation buildings, structures, or facilities (including historic railroad facilities and canals)
- Preservation of abandoned railway corridors (including the conversion and use thereof for bicycle or pedestrian trails)
- Control and removal of outdoor advertising
- Archaeological planning and research
- Environmental mitigation to address water pollution due to highway runoff or reduce vehicle-caused wildlife mortality while maintaining habitat connectivity
- Establishment of transportation museums

In order to be eligible for prioritization, a project must meet certain requirements, including:

- A relationship to the surface transportation system.
- Qualification under one of the Enhancement Program categories (see Table 8-1).
- A local match (usually 20% of total eligible TE project cost) in the form of local funds, fair market value of donated labor, land or materials; use of non-FHWA funds, or a combination thereof.
- On Oahu, proposed TE projects are prioritized using OMPO procedures. The list of prioritized projects must be approved by the OMPO Policy Committee before being submitted to HDOT. On the neighbor islands, proposed TE projects are prioritized using procedures adopted by the respective Countywide Transportation Planning Process (CTPP) Policy Committee.
- Commitment by a State of County agency to maintain the proposed TE improvement.

Ultimately, the HDOT Director prepares and updates the statewide prioritized list of proposed TE projects. All TE proposals prioritized under adopted OMPO and CTPP procedures can be considered for Federal funding. In order to receive Federal funds, these projects must be programmed into the current Oahu TIP and/or STIP. In the development of the Oahu TIP and STIP, OMPO and CTPP priorities are followed to the maximum extent practical. However, the Director may deviate and give higher priorities to projects required by FHWA, State initiatives, unique projects with time constraints, and/or multi-agency projects with strong community support.

Actual FY01: \$3,650,000

Actual FY02: \$3,698,000

Estimated FY03: \$3,400,000

**Table 8-1
Qualified TE Expenditure Categories**

Bicycle (and Pedestrian) Facilities	
Eligible	Non-eligible
Paved shoulder/wide outside lanes	Maintenance activities
Bike paths	Bicycle facilities that serve a recreational function only
Bike lanes	Widening of roadway to HDOT standards
Bicycle lockers and racks	Incidental element of new highway project to accommodate routine use (paved shoulders, wide curb lanes)
Bicycle (and Pedestrian) Safety and Educational Activities	
Eligible	Non-eligible
Development of educational materials	Activities currently funded and provided by the community such as police bicycle patrols and school safety patrols
Safety campaigns and programs	
Safety training	
Activities related to safety enforcement	

Table 8-2 shows examples of bicycling related TE projects.

Table 8-2
Representative Transportation Enhancement Projects Obligated as of October 1999

Project Name and Location	Federal Funds	Phase	Year
Lydgate Park Bike/Pedestrian Path Wailua, Kauai	\$2,707,390	Construction	2001
Honoapiilani Highway & Kekaulike Avenue, Improvements for Bikeways, Maui	\$290,252	Construction	2001
Lydgate Park Bike/Pedestrian Path Wailua, Kauai	\$160,000	Engineering	2000
Leeward Bikeway Ewa, Oahu	\$1,918,405	Right-of-way	2000
Alii Drive, Improvements along Oneo Bay, Hualalai Rd to Waiua Rd Kailua-Kona, Hawaii	\$240,000	Engineering	2000
Kaumualii Highway Bikeway Improvements (17.0 mi.) Koloa, Kauai	\$645,954	Construction	1998
Honoapiilani Highway Bikeway Improvements (16.7 mi.) Lahaina, Maui	\$593,570	Construction	1998
Kuhio Highway Shoulder Improvements for Bicycle Route (2.7 mi.) Lihue, Kauai	\$437,321	Construction	1997
Diamond Head Road Bikeway (1.1 mi.) Honolulu, Oahu	\$88,000	Engineering & Design	1997
Kaelepulu Stream Bikeway Bridge (0.1 mi.) Kailua, Oahu	\$836,171	Construction	1997
Kanoiehua Avenue Widening (1.9 mi.) Hilo, Hawaii	\$245,293	Construction	1997
Kahului Airport Bikeway (1.3 mi.) Kahului, Maui	\$342,767	Construction	1997
Akoni Pule Highway Shoulder Improvements (9.7 mi.) Kohala, Hawaii	\$1,641,600	Construction	1997

8.4.6 PUBLIC LANDS HIGHWAYS

The Public Lands Highways Program was originally established in 1930 with funds provided by the General Fund of the U.S. Treasury. The intent of the program is to improve access to and within the nation's Federal lands. Any type of transportation project, including accommodations for bicycles, is eligible as long as it provides or improves access to Federal lands that are also served by a public lands highway. According to FHWA, a "public lands highway" is defined as "a forest road under the jurisdiction of and maintained by a public authority and open to public travel or any highway through unappropriated or unreserved public lands, nontaxable Indian lands, or other federal reservations under the jurisdiction of and maintained by a public authority and open to public travel."

Eligible projects may include transportation planning, research, engineering, and construction of highways, roads, and parkways or transit facilities. Provisions for bicyclists are also acceptable. Projects selected under this program are eligible for 100% Federal funding. State transportation departments are the only agencies that can submit projects to the FHWA division office. Hawaii's share of funding under this program is set by competition with other states for discretionary FHWA funds or Congressional earmark, and no local match is required.

In the past, the Public Lands Highways program has funded a number of projects throughout the state as shown in Table 8-3.

**Table 8-3
Representative Public Lands Highways Projects**

Project Location and Description	Total Award	Year
Statewide improvements at various national parks and including Hawaii Volcanoes, Haleakala, Pu'uhonua O Honaunau, Kaloko Honokohau, and the USS Arizona Memorial, and at various national wildlife refuges, including Kealia Pond and Kilauea Point	\$6,000,000	2002
Hanalei Valley/Wildlife Refuge scenic stop on Kuhio Highway, Kauai	\$630,500	2001
Eruption site at Hawaii Volcanoes National Park, end of Chain of Craters Road, construct parking, turn around, and pedestrian safety improvements	\$588,000	2001
Ohiki Road (entrance to Hanalei National Wildlife Refuge), road rehabilitation	\$100,000	2001
Pu'ukohola Heiau National Historic Site, intersection improvements at Kawaihae Road and Park Maintenance Road	\$614,617	2000
Pu'ukohola Heiau National Historic Site, Kawaihae Road and Spencer Beach Intersection	\$1,127,383	2000
Kealia Pond NWR Entrance Road at Mokulele Highway intersection, rehabilitation of roadway, intersection improvements, and resurfacing parking lot	\$958,100	2000
Keanakolu Road at the Hakalau Forest NWR, roadway rehabilitation	\$348,400	2000

8.4.7 TRANSIT ENHANCEMENT

Similar to the Transportation Enhancement Program, TEA-21 legislation also provides money for enhancements to transit systems including the accommodation of bicycles, bicycle access, and multi-modal connections. Projects typically funded include the installation of bicycle storage facilities and the installation of equipment for transporting bicycles on mass transit vehicles.

8.4.8 SCENIC BYWAYS

Under the Scenic Byways Program, FHWA recognizes the value of national and state-designated scenic byways, roads with special scenic, historic, recreational, cultural, archaeological and/or

natural qualities. Discretionary funding is available for a variety of categories related to scenic byways including the construction of facilities along a scenic byway for the use of bicyclists. Nationwide, approximately \$25 million a year is available. Hawaii received a one-time grant of \$200,000, but without a scenic byways program, funds are not routinely available.

8.4.9 RECREATIONAL TRAILS FUND

The Recreational Trails Fund is a reimbursable funding program. Of the funds apportioned to a state, 30% must be used for motorized trail uses, 30% for non-motorized trail uses, and 40% for diverse trail uses (any combination).

In Hawaii, the program is administered by the Department of Land and Natural Resources through the Na Ala Hele Trails and Access Program. Monies through this program are available for the purposes of providing and maintaining recreational trails and trail-related facilities. While the emphasis of the TEA-21 Transportation Enhancement Program is on “transportation” projects, the focus of the Recreational Trails Fund is “recreation.” In order to be eligible, a project must involve a trail or trail-related facility that is open to the public. With significantly less money available through this program, the focus is towards projects involving implementation and construction. Planning activities for future trails or trail facilities are not eligible. Eligible activities include: development of urban trail linkages near homes and workplaces, maintenance and restoration of existing recreational trails, easement acquisition and development for trails/trail corridors, construction of new trails that meet identified needs on state, county, or private lands. The Na Ala Hele Program seeks to open the trails to as diverse a group of users as warranted by operational and environmental conditions.

Actual FY01: \$533,000

Actual FY02: \$534,000

Estimated FY03: \$562,000

8.4.10 SAFE COMMUNITIES PROGRAM

The Safe Communities Program is housed in the Public Affairs Office of HDOT. Staff members are available to work with interested community groups statewide to establish a Safe Community Program in their neighborhood. The staff will help determine whether the best solution to a safety problem is education, engineering or enforcement, or a combination. In addition, the Safe Communities Program administers a funding program which distributes mini-grants amounting to about \$2,000 each. Funds are restricted for programs aimed at modifying behavior, rather than construction projects.

The grant program is open to public agencies and Safe Community groups. A Request for Proposals is issued around February, the deadline for application is in April, and awards are made in July.

Interested parties may request a booklet which identifies the program's priority areas and describes the application process. Bicycling-related issues are currently categorized as Priority 3. Proposals are evaluated by the Traffic Safety Councils in each county and by the Governor's Highway Safety Council. The final determination on all awards is made by the Director of Transportation.

8.4.11 FEDERAL—NON-TRANSPORTATION FUNDS

Community Development Block Grants (CDBG) through the Department of Housing and Urban Development (HUD) are a potential source of funds for community-based projects, such as commercial district streetscape improvements, sidewalk improvements, safe routes to school, or other neighborhood-based bicycling facilities that improve local transportation options or help revitalize neighborhoods.

8.4.12 STATE HIGHWAY FUND

Section 248-9, HRS pertaining to the state highway special fund states that monies in the fund may be expended for, among other things, "the costs of acquisition (including real property and interests therein), planning, designing, construction and reconstruction of the state highway system, and bikeways, including, without limitation, the cost of equipment and general administrative overhead[.]"

Section 264-18, HRS further states that "(a) Out of the state highway fund reasonable amounts shall be expended as necessary by the state for the establishment of bikeways. Bikeways shall be established, whenever practicable, wherever a highway, road, or street is being constructed, reconstructed, relocated, or rehabilitated. (b) Bikeways are not required to be established under subsection (a):

- (1) Where the establishment of the lanes, paths, routes, and ways would be contrary to public safety; or
- (2) If the cost of establishing the lanes, paths, routes, and ways would be excessively disproportionate to the need of probable use; or
- (3) Where low population density, other available ways, or other factors indicate an absence of any need for the lanes, paths, routes, and ways.

8.4.13 BIKEWAY FUND

By statute, all bicycle registration fees are deposited into a fund known as the Bikeway Fund and are expended in the county in which the fees are collected. Monies can be used for the following purposes:

- Acquisition, design, construction, improvement, repair, and maintenance of bikeways, including the installation and repair of storm drains and bridges.

- Installation, maintenance, and repair of bikeway lights and power, including replacement of old bikeway lights.
- Purposes and functions connected with traffic control and safety upon bikeways.
- Payment of interest on and redemption of bonds issued to finance bikeway construction and improvements.
- Promotion of bicycling transportation and recreation.

The size of each county's Bikeway Fund is directly proportional to the number of bicycles registered. In 2000, the City and County of Honolulu collected \$417,300 in registration fees. For the other counties, the Bikeway Fund may be too small to construct new bikeways; however, allocations may be used to maintain existing bikeways or to underwrite bicycle education and promotion activities.

Counties with significant bicycle rental businesses may consider raising additional revenues by legislating a surcharge on rented bicycles, similar to rented motor vehicles.

8.4.14 HAWAII HEALTH INITIATIVE

Hawaii Health Initiative (HHI) is a program administered by the State Department of Health and funded by the state's share of tobacco settlement dollars. Sixty percent of the monies are dedicated to public health. In 2002, DOH began the "Start Living Healthy" campaign to publicize a three-prong approach to preventing chronic diseases: improve dietary habits, increase physical activity, and decrease tobacco use. Bicycling, of course, fits squarely in the physical activity component.

DOH's Physical Activity Promotion Project currently supports Kaho'omiki, Hawaii's Council on Physical Activity (previously known as the Governor's Council on Physical Fitness and Sports). In addition to the statewide council, there are neighbor island physical activity coalitions: the Garden Isle Fitness Task Force, Friends of Fitness-Kona, Hilo Fitness Coalition, and Molokai Physical Activity Coalition.

HHI has two major grant programs:

- Small community grant (about \$24,000). Example: plans to expand recreational facilities at the Old Kona Airport.
- Targeted initiatives grant (about \$100,000). Example: Kamaaina Streets Coalition project to implement traffic calming measures on Oahu.

Funds cannot be used for capital improvements but are ideal as seed money for planning, design, and to support the search for other funds. Because the grant award process is undergoing change, interested organizations should contact the Department of Health. On the neighbor islands, bicycling organizations are encouraged to work with the neighbor island fitness coalitions to submit joint proposals.

CHAPTER 9

AGENCIES AND ORGANIZATIONS CONTACTED IN PREPARING THE PLAN

Federal Agencies

Federal Highway Administration, U.S. Department of Transportation

U.S. Park Service, Department of the Interior

State Agencies

Department of Transportation

Highways Division

Construction and Maintenance Branch

Design Branch

Planning Branch

Staff Services Branch

Traffic Branch

Kauai District

Oahu District

Maui District

Molokai Baseyard

Hawaii District

State Transportation Planning Office

Public Affairs Office

Department of Education

Safety Community Youth Activities

Superintendent

Department of Health, Chronic Disease Management and Control Branch and Nutrition and

Physical Activity Section

Department of Land and Natural Resources

Division of State Parks

Na Ala Hele Trail and Access Program

State Historic Preservation Division

Disability and Communication Access Board

Hawaii Tourism Authority

University of Hawaii-Hilo, Facilities Office

County of Kauai

County Council

Department of Public Works, Building Division

Department of Public Works, Road Maintenance

Economic Development Office

Planning Department

Police Department

City and County of Honolulu

Department of Design and Construction
Department of Facilities Maintenance
Department of Parks and Recreation
Department of Planning and Permitting
Department of Transportation Services
Honolulu Bicycle Coordinator
Honolulu Mayor's Advisory Committee on Bicycling
Oahu Transit Service
Police Department

Regional Agency

Oahu Metropolitan Planning Organization

County of Maui

County Council
Department of Public Works and Environmental Management, Engineering Division
Economic Development Office
Mayor's Bicycle Advisory Committee
Office of the Mayor, Transportation Coordinator
Planning Department
Police Department

County of Hawaii

County Council
Department of Parks and Recreation
Department of Public Works, Engineering Division
Mass Transit Agency
Mayoral Bicycle and Pedestrian Advisory Committee
Office of the Mayor
Planning Department
Police Department
Research and Development Office

Private Individuals and Organizations

A&B Properties, Kauai
Aina Nui Corporation, affiliate of the Estate of James Campbell
Grove Farm Company
Hawaii Bicycling League
Hawaii Cycling Club
Kauai Bicycle Users Group (ad hoc)
Keaau Planning Group
Maui Activity Owners Association
Maui Bicycle Alliance
Olaa Historical Society
PATH—People's Advocacy of Trails Hawaii
W. H. Shipman Ltd.

Participants of 21 public information meetings-workshops, see Supplemental Volume on Community Participation

CHAPTER 10

REFERENCES AND RESOURCES

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City and County of Honolulu, Department of Design and Construction. March 2002. *Diamond Head Road Recreation Master Plan*. Prepared by Townscape, Inc.

City and County of Honolulu, Department of Planning and Permitting. October 2002. *Aiea-Pearl City Livable Communities Plan*. Prepared by Wilson Okamoto & Associates, Inc. and others.

City and County of Honolulu, Department of Transportation Services. April 1999. *Honolulu Bicycle Master Plan*. Prepared by Helber Hastert & Fee, Planners; Bicycle Federation of America; Engineering Concepts, Inc.; and David Cheever Marketing. www.co.honolulu.hi.us/dts/bikeway/index.htm

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Federal Highway Administration, U.S. Department of Transportation. *Designing Sidewalks and Trails for Access: Part I of II: Review of Existing Guidelines and Practices*. Publication No. FHWA-HEP-99-006. www.fhwa.dot.gov/environment/bikeped/access-I.htm

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OTHER STATE AND LOCAL GOVERNMENT DOCUMENTS ON PLANNING AND DESIGNING BICYCLE FACILITIES

Note: The Pedestrian and Bicycle Information Center at www.bicyclinginfo.org provides a clearinghouse for many State and local bicycle plans. Click on the **Policy and Planning** button.

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State of Washington, Facilities for Nonmotorized Transportation, Design Manual, June 1989.

ADDITIONAL RESOURCES—NATIONAL

American Association of State Highway and Transportation Officials
444 North Capitol Street, NW, Suite 249
Washington, DC 2001
www.aashto.org

Federal Highway Administration
400 Seventh Street, SW
Washington, DC 20590
www.fhwa.dot.gov/environment/bikeped/index.htm

National Bicycle Safety Network
www.cdc.gov/ncipc/bike/default.htm

National Center for Bicycling and Walking
1506 21st Street, NW, Suite 200
Washington, DC 20036
www.bikewalk.org

National Highway Traffic Safety Administration
www.nhtsa.dot.gov

Pedestrian and Bicycle Information Center
UNC Highway, Safety Research Center
730 Airport Road, Suite 300
Campus Box 3430
Chapel Hill, NC 27599-3430
www.bicyclinginfo.org

Rails to Trails Conservancy
1100 17th Street SW, 10th Floor
Washington, DC 20036
www.trailtrails.org

Surface Transportation Policy Project
1100 17th Street, NW, 10th Floor
Washington, DC 20036
www.transact.org

ADDITIONAL RESOURCES—HAWAII

Vincent Llorin, Bicycle and Pedestrian Coordinator
Department of Transportation
601 Kamokila Boulevard, Room 602
Kapolei, HI 96707
Ph. (808) 692-7675
www.state.hi.us/dot/highways/bike/bikeplan/index.htm

Hawaii Bicycling League
3442 Waialae Avenue, #1
Honolulu, HI 96816
Ph. (808) 735-5756
www.hbl.org

Na Ala Hele Trail and Access Program
Department of Land & Natural Resources
Division of Forestry and Wildlife
1151 Punchbowl St., Room 224
Honolulu, Hawaii 96813
www.hawaiitrails.org

Island of Oahu

City and County of Honolulu
Chris Sayers, Bicycle Coordinator
Department of Transportation Services
650 South King Street, 3rd Floor
Honolulu, HI 96813
Ph. (808) 527-5044
www.co.honolulu.hi.us/dts/bikepage.htm

Honolulu Mayor's Advisory Committee on Bicycling
c/o Chris Sayers (above)
Ph. (808) 527-5044

Island of Maui

County of Maui
Mayor's Bicycle Advisory Committee
c/o Dave DeLeon, Committee Executive Liaison
200 South High Street
Wailuku, HI 96793
Ph. (808) 270-7855

Maui Bicycle Alliance
Walter S. Enomoto, Acting President
293 S. Mokapu Street
Kahului, HI 96732
Ph. (808) 870-0130
www.mauibicyclealliance.org

Island of Hawaii

Big Island Community Councils Project
Puna Community Trails Council
www.bicommouncil.org/punatrai.htm

Hawaii Cycling Club
P.O. Box 3246
Kailua-Kona, HI 96745
Ph. (808) 329-0197
www.hawaiicyclingclub.com

County of Hawaii
Mayoral Bicycle and Pedestrian Advisory Committee
Ron Reilly, Chair
c/o Department of Parks and Recreation
101 Pauahi Street, Suite 6
Hilo, HI 96720
Ph. (808) 961-8311
cohparcs@interpac.net

PATH-Peoples Advocacy for Trails Hawai'i
P.O. Box 62
Kailua-Kona, HI 96745
Ph. (808) 326-9495
www.hialoha.com/path/

Waimea Trails and Greenways Committee
Waimea Preservation Association
P.O. Box 6570
Kamuela, HI 96743
Ph. (808) 885-6707

GLOSSARY OF TERMS AND ACRONYMS

AASHTO – American Association of State Highway and Transportation Officials

ADA – Americans with Disabilities Act of 1990. Federal law which requires accessible public transportation services for persons with disabilities, including facilities along highways, trails, sidewalks, and other public settings.

Bicycle – A vehicle propelled solely by human power upon which a person may ride.

Bicycle Facility – A general term denoting improvements and provisions made by public agencies specifically to accommodate or encourage bicycling, including parking and storage facilities.

Bicycle Lane (or Bike Lane) – A portion of a roadway which has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists.

Bicycle Path (or Bike Path) – see Shared Use Path.

Bicycle Route (or Bike Route) – A general term referring to a course that may be traveled by bicycle between an origin and a destination. The 1994 plan's use of "bicycle route" as a type of bicycle facility has been changed to "signed shared roadway" to be consistent with terminology used in the AASHTO Guide for the Development of Bicycle Facilities.

Bikeway – A general term for any road, street, path, or way which is used for bicycle travel, regardless of whether such facilities are designated for exclusive use of bicycles or are to be shared with other transportation modes. A bikeway may be signed or unsigned for bicycle use.

CMAQ – Congestion Mitigation and Air Quality improvement program

FHWA – Federal Highway Administration

Greenway – A pathway for various modes of transportation, including bicycles, that contains elements of a linear park.

HBL – Hawaii Bicycling League

HDOT – State of Hawaii Department of Transportation

HRS – Hawaii Revised Statutes

ISTEA – The Intermodal Surface Transportation Efficiency Act, passed by Congress in 1991, authorized Federal spending for transportation projects from FY 1992 to FY 1997.

LRTP – Long-range (land) transportation plan

MACB – Mayor's Advisory Committee on Bicycling (City and County of Honolulu)

MBAC – Mayor's Bicycle Advisory Committee (Maui County)

MUTCD – Manual on Uniform Traffic Control Devices

OMPO – Oahu Metropolitan Planning Organization

PATH – People’s Advocacy for Trails Hawaii

PUC – Primary Urban Center, an area of urban Honolulu stretching from Kahala to Pearl City.

Right-of-way – A general term denoting land, property, or interest therein, usually in a strip, acquired for or devoted to transportation purposes.

Right of Way – The right of a vehicle or pedestrian to proceed in a lawful manner in preference to another vehicle or pedestrian.

SCP – Sustainable Communities Plan (for regions in the City and County of Honolulu)

Shared Roadway – A roadway that is open to both bicycle and motor vehicle travel. This may be an existing roadway, street with wide curb lanes, or road with paved shoulders.

Shared Use Path – A bikeway physically separated from motorized vehicular travel by an open space or barrier, and either within the highway right-of-way or within an independent right-of-way. Shared use paths may be used by other non-motorized users.

Shoulder – The portion of roadway contiguous with the traveled way for accommodation of stopped vehicles, emergency use, and lateral support of sub-base, base, and surface courses.

Sidepath – An informal term referring to a portion of a street or highway right-of-way, separated from motor vehicle traffic, and designed for non-motorized modes of travel, including bicycles. Sidepaths are typically wider than sidewalks to accommodate pedestrians and bicycles.

Sidewalk – A portion of a street or highway right-of-way designed for preferential or exclusive use by pedestrians.

Signed Shared Roadway – A shared roadway which has been designated by signing as a preferred route for bicycle use.

STP – Statewide Transportation Plan

STP Flexible – Surface Transportation Program Flexible funding program.

STIP – Statewide Transportation Improvement Program

TE – Transportation Enhancements

TEA-21 – Transportation Equity Act for the 21st Century, passed by Congress in 1998, re-authorized and expanded many provisions of ISTEA. TEA-21 expires in FY 2003.

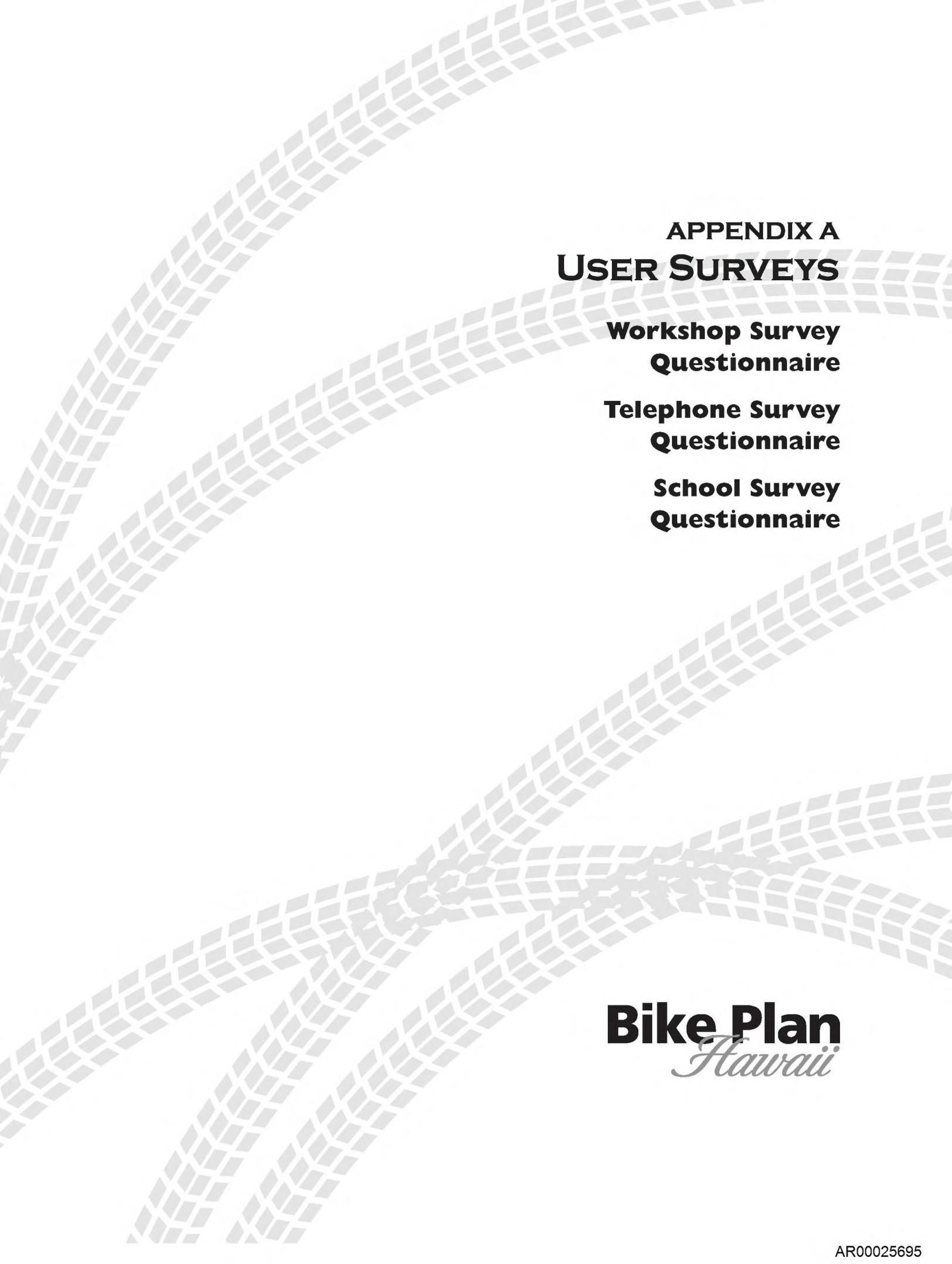
TIP – Transportation Improvement Program

TOP 2025 – Transportation for Oahu Plan 2025

Trail – An identifiable linear course for use by non-motorized vehicles. Specific trails may be marked for use by bicycles. The Hawaii Revised Statutes classify trails as corridor trails, segment or connector trails, and special use trails.

US DOT – United States Department of Transportation

Wide Curb Lane (or Wide Outside Lane) – A through travel lane that is wider than 12 feet (usually 14 feet) to better accommodate both bicycles and motor vehicles in the same lane.



APPENDIX A
USER SURVEYS

**Workshop Survey
Questionnaire**

**Telephone Survey
Questionnaire**

**School Survey
Questionnaire**

Bike Plan
Hawaii

Bike Plan Hawaii

Workshop Participant Survey

1. How many bicycles are at your home address? _____
2. Where is your residence located (name of town or subdivision) _____
3. How often do you and other members of your household ride bikes?

	Almost everyday	Several days a week	Several days a month	Several days a year	Rarely
Self	<input type="checkbox"/>				
Household member #2	<input type="checkbox"/>				
Household member #3	<input type="checkbox"/>				
Household member #4	<input type="checkbox"/>				
Household member #5	<input type="checkbox"/>				

4. For your household as a whole, how important is bicycling for the following types of trips?

	Very Important	Somewhat Important	Not Important
Commuting (to work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recreation/fitness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Errands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
School	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. What do you like about bicycling in your community?

6. What problems do bicyclists face in your community?

7. Where would you like to see improved bicycle facilities?
 From _____ To _____

8. Other concerns regarding engineering, education, enforcement, economy and/or encouragement

Thank you for completing this questionnaire.
 Kimura International, Inc., 1600 Kapiolani Boulevard, Suite 1610, Honolulu, HI 96814

WARD RESEARCH, INC.

BIKE SURVEY WR2861

Record Number _____ (v01)

Interviewer Name _____

Time Ended _____

Date _____ I.D.# _____ (v02)

Time Started _____

Respondent Name _____

Total Minutes _____ (v03)

Respondent Phone Number - (v04)

O'ahu Only (area of island):

- Area 1
- Area 2
- Area 3

- Oahu 01
- Maui 02
- Big Isle 03
- Kauai 04 (v05)

.....
Hello, my name is ____ from Ward Research, a professional market research firm here in Honolulu. We are conducting a short survey today to help the State of Hawaii plan for bicycle transportation in local communities. I would like to ask you a few questions if I may. This survey will take no more than 10 minutes and let me assure you that all your answers will remain completely confidential.

First, let me begin by asking you ...

Q1a. How many automobiles are there at your home address? automobiles

Q1b. Does anyone in your household ride The Bus on a regular basis?

- yes 01
- no 02

Q1c. And how many bicycles are there at your home address? bicycles

(INTERVIEWER: IF ONE OR MORE IN Q1C, CONTINUE. ELSE SKIP TO TO Q5.)

Q2. And in order to get a better understanding of bicycle riders, please tell me the age and gender of each person in your household who rides a bicycle.

Q2.	AGE	GENDER
Bicycle Rider #1		M F
Bicycle Rider #2		M F
Bicycle Rider #3		M F
Bicycle Rider #4		M F
Bicycle Rider #5		M F
Bicycle Rider #6		M F
Bicycle Rider #7		M F
Bicycle Rider #8		M F
Bicycle Rider #9		M F
Bicycle Rider #10		M F

Q3. (ASK FOR EACH BIKE RIDER IN Q2) How often does the (READ AGE & GENDER OF EACH PERSON GIVEN IN Q2) in your household ride his/her bicycle? Would you say almost everyday, a few days a week, a few days a month, or once a month or less?

	<u>Almost Everyday</u>	<u>A few days a week</u>	<u>A few days a month</u>	<u>Once a month or less</u>	<u>Don't know</u>
Bicycle Rider #1	1	2	3	4	9
Bicycle Rider #2	1	2	3	4	9
Bicycle Rider #3	1	2	3	4	9
Bicycle Rider #4	1	2	3	4	9
Bicycle Rider #5	1	2	3	4	9
Bicycle Rider #6	1	2	3	4	9
Bicycle Rider #7	1	2	3	4	9
Bicycle Rider #8	1	2	3	4	9
Bicycle Rider #9	1	2	3	4	9
Bicycle Rider #10	1	2	3	4	9

For the next series of questions, I would like for you to answer thinking from the perspective of the “bikers in your household”.

Q4. Please tell me how important is bicycling for the following types of trips? For each type of trip I read, please tell me if it is very important, somewhat important, not very important, or not important at all to your household as a whole. First **(READ LIST. ROTATE)**...

	<u>Very important</u>	<u>Somewhat Important</u>	<u>Not Very Important</u>	<u>Not Important At All</u>	<u>Don't know</u>
Commuting (to work)	4	3	2	1	9
Recreation/exercise	4	3	2	1	9
Errands in your neighborhood	4	3	2	1	9
School	4	3	2	1	9

(ASK EVERYONE)

Q5. And in general, how strongly do you support changes in bicycle facilities and policies to enable Hawaii to become more bicycle-friendly? Would you say...**(READ LIST)**:

- Very strongly 4
- Somewhat strongly..... 3
- Not very Strongly..... 2
- Or, Not Strongly At All 1
- Don't know **(DO NOT READ)** 9

Q6. I would now like to read you a list of ideas for improving bicycle transportation in the state of Hawaii. Please tell me how strongly you support each idea, very strongly, somewhat strongly, not very strongly, or not strongly at all. First... **(READ LIST. ROTATE.)**

	<u>Very Strongly</u>	<u>S/W Strongly</u>	<u>Not Very Strongly.</u>	<u>Not Strongly At All</u>	<u>Don't know</u>
1 Create separate, on-road bicycle lanes with striping on the pavement	4	3	2	1	9
2 Add paved shoulders or widen narrow roads, but don't provide separate bike lanes	4	3	2	1	9
3 Build more off-road bicycle paths that are totally separate from the street.	4	3	2	1	9
4 Clear debris and other obstructions from shoulders	4	3	2	1	9
5 Conduct safe bicycle riding classes in the public schools	4	3	2	1	9
6 Improve bicycle-oriented signage ("Share the Road" signs, bike route markers)	4	3	2	1	9
7 Enforce motor vehicle laws regarding bicycles	4	3	2	1	9
8 Provide secure places to park or store bicycles	4	3	2	1	9
9 Support orientation rides (weekend rides with experienced bike leaders)	4	3	2	1	9
10 Add bicycling items to the state driving exam (such as how to interact with bicyclists on the road)	4	3	2	1	9

Q6a: **(IF MORE THAN ONE IDEA GIVEN A "4" RATING IN Q6, ASK:)** You said that you strongly support **(READ IDEAS GIVEN A 4 RATING)** Of these, which one SINGLE idea would you say you support the most? **(INTERVIEWER: PROBE FOR ONE RESPONSE ONLY)**

Q7. If bicycling were a safer mode of transportation, how likely would you personally be to use a bicycle more frequently for **(READ LIST)**. Would you say very likely, somewhat likely, not very likely, or not likely at all?

	<u>Very Likely</u>	<u>S/W Likely</u>	<u>Not Very Likely</u>	<u>Not Likely At All</u>	<u>Don't know</u>
Recreation or exercise	4	3	2	1	9
Shopping trips or errands around your neighborhood	4	3	2	1	9
Commuting to work	4	3	2	1	9
Going to and from school by children in your household	4	3	2	1	9

Q8. And how willing would you be to support the use of government funding, namely the allocation of funds from the State Department of Transportation's budget, to address biking issues? Would you be strongly in favor, somewhat in favor, somewhat opposed, or strongly opposed to the use of government funding to address biking issues?

- Strongly in favor 4
- Somewhat in favor 3
- Somewhat opposed 2
- Or, Strongly opposed 1
- Don't know **(DO NOT READ)** 9

And thinking about biking conditions in your neighborhood community...

Q9. A good bicycle plan considers the condition of the routes where people ride frequently or would like to ride more frequently. Where, specifically, would you like to see improved bicycle facilities? **(INTERVIEWER: PROBE FOR SPECIFIC CURRENT LOCATION)**

Q10. What else, if anything, would you like to say about bike transportation in your area?

These final few questions are for classification purposes only...

Q11. Are you a registered voter in the State of Hawaii?

- Yes..... 1
- No 2

Q12. How many years have you lived in Hawaii?

- less than 2 years..... 1
- 2 - less than 5 years..... 2
- 5 - less than 10 years..... 3
- 10 or more years..... 4
- born and raised in Hawaii..... 5
- don't know/refused (**DO NOT READ**)..... 9

Q13. And how many people are there, in total, in your household?

people in household

Q14. How many of these are under 18 years?

people in household

Q15. What is your ethnic identification? (**IF MIXED, ASK**) Would that include Hawaiian?

- Caucasian 1
- Chinese..... 2
- Filipino..... 3
- Hawaiian/part-Hawaiian 4
- Japanese 5
- mixed 6
- other (specify) 8
- refused (**DO NOT READ**)..... 9

(v)

Q16. What was your age on your last birthday? (99 = refused)

years

Q17. And what was your household's total income for 2001 before taxes? Please stop me when I get to the correct category.

- under \$25,000..... 1
- \$25,000 - but under \$35,000..... 2
- \$35,000 - but under \$50,000..... 3
- \$50,000 - but under \$75,000..... 4
- \$75,000 - but under \$100,000..... 5
- \$100,000 or more..... 6
- refused (DO NOT READ)..... 9

That was my final question. Let me assure you once again that your responses will remain completely confidential. If you would like to be notified of the results of this survey, as well as upcoming events such as community workshops on the Bike Plan, we can email or mail updates to you if you would like. IF YES, GET EMAIL OR MAILING ADDRESS.

Email Address: _____

OR Mailing Address: _____
Street Address

_____ City

_____ Zip

Thank you very much for participating in this survey.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:

HWY-TO
2.5671

February 8, 2002

Dear Principal:

Subject: State of Hawaii Bike Master Plan Update—School Survey

We are revising and updating *Bike Plan Hawaii*, the 1994 master plan for State bikeways. As part of our data gathering, we are contacting public and private schools throughout the state to gather information on bicycle usage, bike-related policies and programs, and ways to promote safe bicycling for school-aged children.

Our planning efforts are focusing on suburban and rural Oahu—areas within urban Honolulu were recently addressed in the City and County of Honolulu's 1999 Bicycle Master Plan. The planning area also covers all of Kauai, Maui, Lanai, Molokai, and the Big Island.

The primary goal of the bicycle master plan is to integrate bicycle facilities into the State's transportation system by proposing a network of bikeways and auxiliary bicycling facilities. We seek to promote bicycling as a viable, alternate means of transportation. Through our community workshops, we have also heard from many residents who want to enhance biking safety through educational programs and enforcement of traffic regulations.

We would appreciate your assistance by filling out the enclosed questionnaire and returning it in the enclosed envelope by **March 4, 2002**. This survey is being administered by our consultants, Kimura International, Inc. If you have any questions, please call Vincent Llorin, State Bicycle and Pedestrian Coordinator, at 692-7675.

Your comments and input are a valuable part of this project. Thank you for your time and cooperation.

Very truly yours,

GLENN M. YASUI
Administrator
Highways Division

Bike Plan Hawaii
School Survey
State Department of Transportation

School Name: _____

Address: _____

Contact Person: _____

Phone: _____

Grade levels : _____ Estimated student enrollment: _____

1. Estimated percentage of students living in a two-mile radius:

- 90-100%
- 75-89%
- 50-74%
- 25-49%
- Less than 25%

2. Estimated percentage of students living in a five-mile radius:

- 90-100%
- 75-89%
- 50-74%
- 25-49%
- Less than 25%

3. What is the school's position on students commuting to school by bicycle?
(Please note that this question refers to bicycling to and from school, and not bicycling on the campus itself.)

- Formal (written) policy prohibiting students from riding bicycles to school
- Informal policy discouraging students from riding bicycles to school
- Informal policy encouraging students to ride bicycles to school
- Formal (written) policy encouraging students to ride bicycles to school
- None

4. How many students commute to school by bicycle on an average day?

- None
- 1-24
- 25-49
- 50-99
- 100 or more

5. How many faculty or staff members commute to school by bicycle on an average day?

- None
- 1-9
- 10-24
- 25 or more

6. Does your school participate in a structured bike education program (such as BikeEd, sponsored by the Hawaii Bicycling League or PATH—People’s Advocacy for Trails Hawaii)?

- Yes
- No

6a. If you answered “Yes” above, how would you rate the program?

- Very successful
- Moderately successful
- Not successful

What are the pluses and minuses of the program?

6b. If you answered “No” above, would your school be interested in a bike education program?

- Yes
- No

7. In your opinion, what are the major impediments to increased bike commuting by students and faculty? (please check all that apply)

- Commuting distances
- Commuting time
- Weather conditions
- Hilly terrain
- Unsafe roads/heavy traffic
- Lack of bicycles
- Inability to ride bicycle
- Lack of storage facility on campus (bike racks)
- Bike thefts
- Other: _____

8. What improvements (on- and off-campus) would encourage more students and faculty to commute to school by bicycle? *Please name specific streets and/or intersections that require safety improvements.*

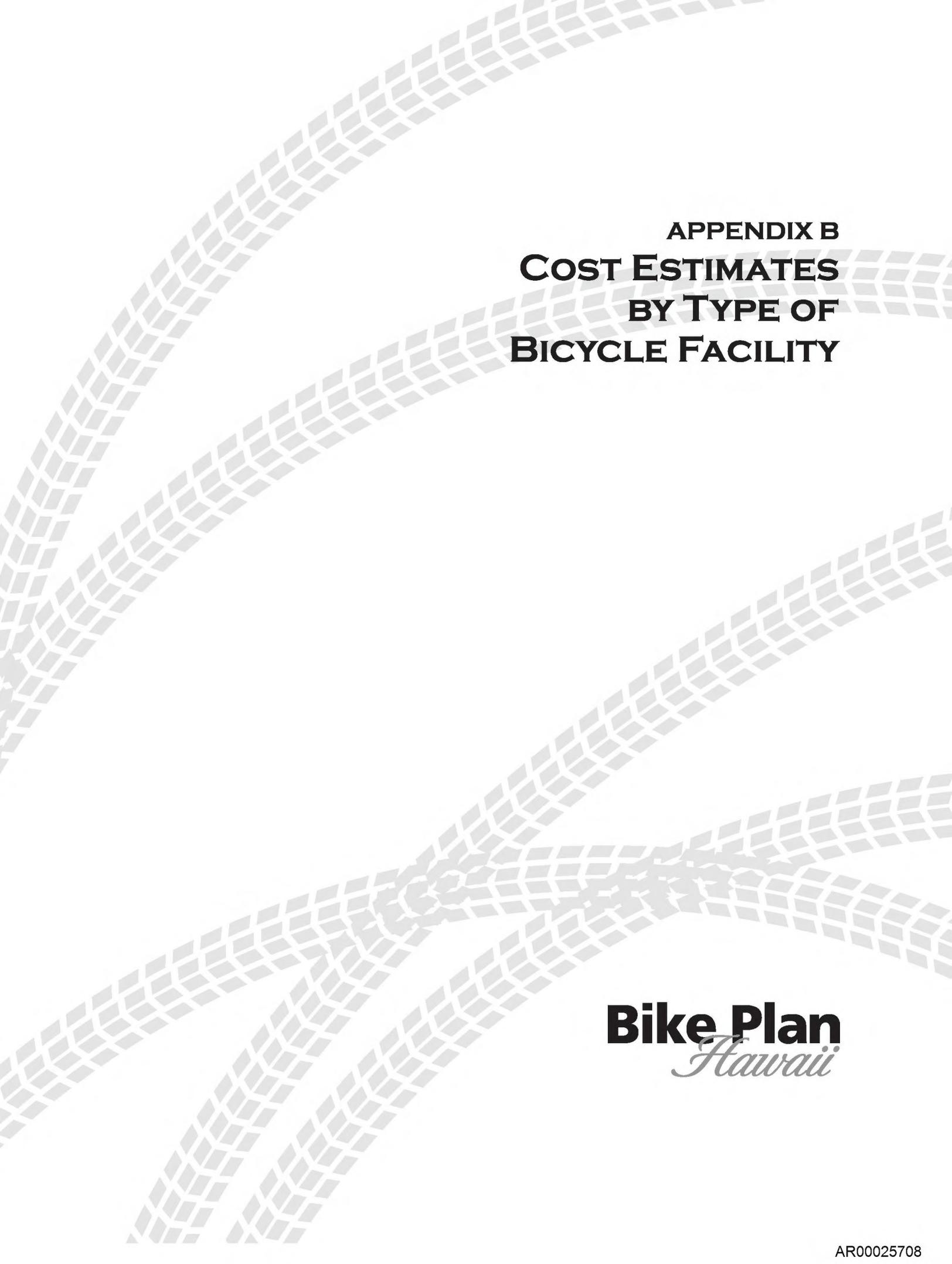
9. Other comments or suggestions on how to promote safe biking to and from school?

10. If there were a "Safe Routes to Schools" program to identify, improve, and/or create safe travel corridors for students, would your school be interested?

- Yes, the administration would be interested—please send more information when available
- Yes, the PTSA is likely to be interested
- Not at this time
- Don't know

Thank you for your cooperation. Please return this questionnaire in the stamped envelope.

Kimura International, Inc.
1600 Kapiolani Boulevard, Suite 1610
Honolulu, HI 96814
Ph. (808) 944-8848



**APPENDIX B
COST ESTIMATES
BY TYPE OF
BICYCLE FACILITY**

Bike Plan
Hawaii

J. UNO & ASSOCIATES, INC.

COST ANALYSIS

PROJECT: **BIKE PLAN HAWAII**
LOCATION: VARIOUS LOCATIONS
ARCHITECT: KIMURA INTERNATIONAL, INC.
PREPARED BY: J. UNO

DATE: July 2, 2002

DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL COST
BIKE ROUTE- Signed, Shared Roadways				
Class 'A' - Minor Work				
Add Signage, per mile assumes 1 sign per 1,000 ft.	5	ea	\$250.00	\$1,250
Class 'B' - Significant Work Required				
Clear, Weed Shoulders, 4' wide	21,120	sf	\$0.12	\$2,534
Paint Stripes	10,560	lf	\$1.25	\$13,200
Add Signage, per mile assumes 1 sign per 1,000 ft.	5	ea	\$250.00	\$1,250
Subtotal, per mile				\$16,984
Class 'C' - New Facility Required				
Clear & Grub Shoulders, 6' wide	31,680	sf	\$0.16	\$5,069
Excavation & Embankment	1,175	cy	\$22.50	\$26,438
Fine Grade, Compact Shoulders	31,680	sf	\$0.40	\$12,672
A.C. Pavement, 4' wide	21,120	sf	\$2.50	\$52,800
Paint Stripes	10,560	lf	\$1.25	\$13,200
Add Signage, per mile assumes 1 sign per 1,000 ft.	5	ea	\$250.00	\$1,250
Subtotal, per mile				\$111,428

Assumes one side of the proposed route only.
Assumes Private Contractor selected by competitive bid.
Assumes Oahu Costs, Add 15% for Hawaii, Maui & Kauai.
Assumes no stream crossings, retaining or fill conditions.
Assumes average site accessibility.
No Engineering, Right of Way, Legal or other "soft" costs
have been included.

J. UNO & ASSOCIATES, INC.**COST ANALYSIS**

PROJECT: **BIKE PLAN HAWAII**

LOCATION: VARIOUS LOCATIONS

ARCHITECT: KIMURA INTERNATIONAL, INC.

PREPARED BY: J. UNO

DATE:

July 2, 2002

DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL COST
BIKE LANES - Exclusive, Striped Lane with Painted Icon				
Class 'A' - Minor Work Required				
Sweep, Clear Existing Bike Lane	21,120	sf	\$0.02	\$422
Touch Up Stripes, 15%	1,584	lf	\$1.25	\$1,980
Touch Up Icons	10	ea	\$35.00	\$350
Add Signage, per mile assumes 1 sign per 1,000 ft.	5	ea	\$250.00	\$1,250
Subtotal, per mile				\$4,002
Class 'B' - Significant Work Required				
Sweep, Clear Existing Bike Lane	21,120	sf	\$0.02	\$422
Paint Stripes	10,560	lf	\$1.25	\$13,200
Paint Icons	10	ea	\$35.00	\$350
Add Signage, per mile assumes 1 sign per 1,000 ft.	5	ea	\$250.00	\$1,250
Subtotal, per mile				\$15,222
Class 'C' - New Facility Required				
Demolish Existing Curb, Gutter & Sidewalk	26,400	sf	\$1.20	\$31,680
Clear & Grub Shoulders	63,360	sf	\$0.16	\$10,138
Excavation & Embankment	2,350	cy	\$22.50	\$52,875
Fine Grade, Compact Shoulders	63,360	sf	\$0.40	\$25,344
Relocate Utilities	1	ls	\$55,000.00	\$55,000
Concrete Sidewalk	21,120	sf	\$4.50	\$95,040
Concrete Curb & Gutter	5,280	lf	\$16.00	\$84,480
A.C. Pavement	36,960	sf	\$2.50	\$92,400
Paint Stripes	10,560	lf	\$1.25	\$13,200
Paint Icons	10	ea	\$35.00	\$350
Add Signage, per mile assumes 1 sign per 1,000 ft.	5	ea	\$250.00	\$1,250
Subtotal, per mile				\$430,077

J. UNO & ASSOCIATES, INC.
COST ANALYSIS

PROJECT: **BIKE PLAN HAWAII**
 LOCATION: **VARIOUS LOCATIONS**
 ARCHITECT: **KIMURA INTERNATIONAL, INC.**
 PREPARED BY: **J. UNO** DATE: **July 2, 2002**

DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL COST
BIKE PATHS, Shared Use Paths				
Class 'A' - Minor Work Required				
Clear, Weed Existing Path, 5' wide	26,400	sf	\$0.12	\$3,168
Add Signage, per mile assumes 1 sign per 1,000 ft.	5	ea	\$250.00	\$1,250
Subtotal, per mile				\$4,418
Class 'B' - Significant Work Required				
Fine Grade, Compact Path	73,920	sf	\$0.40	\$29,568
A.C. Pavement	52,800	sf	\$2.50	\$132,000
Paint Stripes	10,560	lf	\$1.25	\$13,200
Paint Icons	10	ea	\$35.00	\$350
Add Signage, per mile assumes 1 sign per 1,000 ft.	5	ea	\$250.00	\$1,250
Subtotal, per mile				\$176,368
Class 'C' - New Facility Required				
Clear & Grub Path	73,920	sf	\$0.16	\$11,827
Excavation & Embankment	3,900	cy	\$22.50	\$87,750
Fine Grade, Compact Path	73,920	sf	\$0.40	\$29,568
A.C. Pavement	52,800	sf	\$2.50	\$132,000
Paint Stripes	10,560	lf	\$1.25	\$13,200
Paint Icons	10	ea	\$35.00	\$350
Add Signage, per mile assumes 1 sign per 1,000 ft.	5	ea	\$250.00	\$1,250
Subtotal, per mile				\$264,118



**APPENDIX C
EXISTING
BICYCLE FACILITIES**

Kauai

Oahu

Maui

Hawaii

Bike Plan
Hawaii

Inventory of Bicycle Facilities in the State of Hawaii (as of August 2003)

Total by Island	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)
Kauai	14.5	1.2	6.5	22.2
Oahu	30.1	33.6	34.3	98.0
Maui	37.8	21.6	1.0	60.4
Hawaii	18.3	2.8	6.3	27.4
Statewide	100.7	59.2	48.1	208.0

Miles Added Since 1994 Plan

Total by Island	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)
Kauai	11.7	1.2	5.5	18.4
Oahu	12.5	13.0	13.0	38.5
Maui	5.8	19.8	1.0	26.6
Hawaii	11.1	2.8	6.3	20.2
Statewide	41.1	36.8	25.8	103.7

Island of Kauai

Existing Bicycle Facilities

Facility Location	Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)	Addition since 1994 Plan	Notes
Lihue							
Kaumualii Highway Rice St–Vicinity of Maluhia Rd	S	9.0				●	
Kapule Highway Rice St–Kuhio Hwy	S	2.8					
Kaneka Street and Nuhou Street Puli Rd–Pikake St	C		1.2			●	
East Shore							
Kuhio Highway Kapule Hwy–Kuamoo Rd	S	2.7				●	
Lydgate Park Path Through park	C			2.5		●	
Kawaihau Bike Path (Interim) Kapaa Elem School– Kapahi Park	C			3.0		●	
Kapaa Beach Park Path Adjacent to Kapaa Beach Park	C			1.0			
Kauai Total							
State Facilities		14.5	0.0	0.0	14.5		
County Facilities		0.0	1.2	6.5	7.7		
All Jurisdictions		14.5	1.2	6.5	22.2		
<i>Completed prior to 1994 Plan</i>		2.8	0.0	1.0	3.8		
<i>Added since 1994 Plan</i>		11.7	1.2	5.5	18.4		

Island of Oahu

Existing Bicycle Facilities

Facility Location	Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)	Addition since 1994 Plan	Notes
Central Oahu							
Whitmore Avenue Kamehameha Hwy— NCS Wahiawa	S	1.8				●	
California Avenue Plum St—Kamehameha Hwy	C		0.5				
California Avenue Kamehameha Hwy—Kilani Ave	C	0.8					
Kilani Avenue California Ave—N. Cane St	C	1.4					
Mahele Street Kilani Ave—California Ave	C	0.1					
North Cane Street Kilani Ave—California Ave	C		0.1				
Kahelu Avenue Kamehameha Hwy—end of road	C		0.6			●	
Kamehameha Highway Ka Uka Blvd—Waipio Uka Blvd	S	0.9				●	
Kunia Road Anonui St—Honowai St	S	1.2				●	
Kunia Road Honowai St—Farrington Hwy	S			0.4		●	
Anonui Street Kunia Rd—Vicinity of Royal Kunia Golf Course II	C		1.1			●	
Kupuohi Street Anonui St—Kupuna Lp (North)	C		0.6			●	
Waipio Uka Street Path Ka Uka Blvd—Kamehameha Hwy	C			1.4		●	
Paiwa Street H-1 Freeway— Mauka end of road	C			0.8		●	

Island of Oahu

Existing Bicycle Facilities

Facility Location	Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)	Addition since 1994 Plan	Notes
Central Oahu							
Lumiaina Street Paiwa St—Lumiaua St	C			0.8		●	
Farrington Highway Fort Weaver Rd—Paiwa St	S	2.0				●	b
Managers Drive/ Mokuola H-1 Overpass—Nalii St	C		0.8			●	
East Oahu							
Kealahou Street Kalanianaʻole Hwy—Hawai Kai Dr	C	0.8					
Hawaii Kai Drive Kealahou St—Lunalilo Home Rd	C	1.1					b
Lunalilo Home Road Kalanianaʻole Hwy— Hawaii Kai Dr	C	1.8					
Kalanianaʻole Highway Lunalilo Home Rd—Keahole St	S	0.9					
Kalanianaʻole Highway Keahole St—Ainakoa Ave	S		5.0				
Leeward Oahu							
Farrington Highway Orange St—Ala Hema St	S	1.4				●	
Kamokila Boulevard Farrington Hwy—Kapolei Pkwy	C		0.7			●	
Kapolei Parkway Kamokila Blvd—Kalaeloa Blvd	C		0.2			●	
Farrington Highway Kamokila Blvd—Kapolei Golf Course Rd	C		1.5			●	
Kealanani Avenue Farrington Hwy—Kamaaha Ave	C		0.6			●	
Kamaaha Avenue Fort Barrette Rd— End of road (Kapolei Pkwy)	C		1.1			●	

Island of Oahu

Existing Bicycle Facilities

Facility Location	Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)	Addition since 1994 Plan	Notes
Leeward Oahu							
Fort Weaver Road Farrington Hwy—Iroquois Pt. Rd	S			3.8			
Fort Weaver Road Ewa District Park— Ewa Beach Park	S		2.2				
Geiger/Iroquois Pt. Road Kapolei Pkwy—Keaunui Dr	C			0.7		●	
Kapolei Parkway Kolowaka Dr—Launahahele St	C			0.7		●	
Keaunui Drive Keaunui Park—Iroquois Pt. Rd	C			0.7		●	
Kolowaka Drive Kapolei Pkwy—Keaunui Dr	C			0.8		●	
Keoneula Boulevard Fort Weaver Rd—Kaileolea Dr	C			0.2		●	
Kaileolea Drive Keoneula Blvd—Kapolei Pkwy	C		0.4			●	
Kunia Road Farrington Hwy—Honowai St	S			0.8			
Pearl Harbor Bike Path West Loch Comm. Shoreline Park—Vicinity of Fort Weaver Bike Path near Renton Rd	C			1.2			
North Shore							
Ke Ala Pupukea Bike Path Waialea Beach Park— Before Waimea Bay	C			3.5		●	
Haleiwa Bypass Kam Hwy (near Weed Circle)— Kam Hwy (near Haleiwa Beach Park)	S	1.8				●	

Island of Oahu

Existing Bicycle Facilities

Facility Location	Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)	Addition since 1994 Plan	Notes
Windward Oahu							
Aalapapa Drive Mokulua Dr—End of road	C		1.2				
Mokulua Drive Alapapa Dr—End of road	C		1.3				
Kawailoa Road S. Kalaheo Dr—Mokulua Dr	C			0.3		●	
South Kalaheo Avenue Kuulei Rd—Kailua Rd	C	0.4					
Kailua Road S. Kalaheo Ave—Kuuala	C			0.1			
Kuulei Road S. Kalaheo Ave—Kainalu Dr	C		0.3				
Kailua Road Kuulei Rd—Hamakua Dr	C		0.2			●	
Kailua Road Hamakua Dr—Kalanianaʻole Hwy	S		1.5			●	
Kainalu Dr Kainui Dr—Kailua Rd	C		1.8			●	
Hamakua Drive Hahani St—Keolu Dr	C	0.4					
Kalanianaʻole Highway Flamingo St—Wailea St	S	2.4					
Kaneohe Bay Drive Paki Pl—Kainui Dr	C	1.9					
Kainui Drive N. Kalaheo Ave—End of road	C		0.9				
North Kalaheo Avenue Kaneohe Bay Dr—Kainui Dr	C	0.3					
Mokapu Road Kaneohe Bay Dr—Old Mokapu Rd	C		0.5				
Kamehameha Highway Likelike Hwy—Koolau View Dr	S			1.1			a

Island of Oahu

Existing Bicycle Facilities

Facility Location	Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)	Addition since 1994 Plan	Notes
Windward Oahu							
Kamehameha Highway Kahuhipa St—Haiku Rd	C	0.3					a
Haiku Road Kahekili Hwy— Kamehameha Hwy	C		0.7				
Kahekili Highway Haiku Rd—Kulukeoe St	S		0.9			●	
Primary Urban Center							
18th Avenue Diamond Head Rd—Kilauea Ave	C	0.4				●	
University Avenue Kapiolani Blvd—Dole St	C		0.8				
Dole Street University Ave—St. Louis Dr	C	1.1					
Maile Way University Ave—Oahu Ave	C		0.1				
Oahu Avenue Maile Wy—Alaula Wy	C	0.5				●	
Metcalf Street Wilder Ave—University Ave	C		0.3				
McCully Street Kapiolani Blvd—Wilder Ave	C	0.8					
Ala Wai Canal Mauka Promenade Ala Moana Blvd—Ala Wai Elem School	C			1.0			
Adj. to Manoa/Palolo Drainage Canal Ala Wai Elem School—Date St	C			0.4			
Kapahulu/Date Street Path Manoa/Palolo Drainage Canal—Date St—Ala Wai Blvd (behind Waikiki Library)	C			0.7			
Kapahulu Avenue Paki St—Kalakaua Ave	C			0.9			

Island of Oahu

Existing Bicycle Facilities

Facility Location	Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)	Addition since 1994 Plan	Notes
Primary Urban Center							
Paki Avenue Poni Moi Rd—Kapahulu Ave	C			0.9			
Kalakaua Avenue Poni Moi St—Monsarrat Ave	C		0.3			●	
Kalakaua Avenue Monsarrat Ave—Ala Moana Blvd	C	1.7				●	
Ala Moana Park Path Magic Island—Kewalo Basin	C			1.6			
Young Street Isenberg St—Victoria St	C	1.6					
Hotel Street Vicinity of Ward Ave—Alapai St	C	0.2					
Civic Center Bike Path Alapai St—Richards St	C			0.3			
Waiakamilo Rd— Houghtailing St Nimitz Hwy—N. School Street	C		1.2				
Sand Island Access Road Nimitz Hwy—Sand Island State Park	S		3.0				
Nimitz Highway Radford Dr—Puuloa Rd	S			3.6			
Nimitz Highway Puuloa Rd—Middle St	S			0.8		●	
Nimitz Highway Waiakamilo—Fort St. Mall	S		1.8				
Middle Street Bike Path Nimitz Hwy—N. King St	C			0.5			
Salt Lake Boulevard Puuloa Rd—Aliamanu Elem. School	C		0.7				
Salt Lake Boulevard Bougainville—Luapele St	C	0.3				●	

Island of Oahu

Existing Bicycle Facilities

Facility Location	Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)	Addition since 1994 Plan	Notes
Primary Urban Center							
Pearl Harbor Bike Path Halawa Gate (Pearl Harbor)– Lehua St	C			4.4			
Pearl Harbor Bike Path Lehua St–Waipio Pt. Access Rd	S			1.5		●	
Pearl Harbor Bike Path Waipio Pt. Access Rd– Waipahu Depot St	S			0.4		●	
Kuala Street Acacia Rd–Waimano Home Rd	C		0.7			●	
Oahu Total							
State Facilities		12.4	14.4	11.3	38.1		
County Facilities		17.7	19.2	23.0	59.9		
All Jurisdictions		30.1	33.6	34.3	98.0		
<i>Completed prior to 1994 Plan</i>		<i>16.6</i>	<i>20.6</i>	<i>21.3</i>	<i>58.5</i>		
<i>Added since 1994 Plan</i>		<i>12.5</i>	<i>13.0</i>	<i>13.0</i>	<i>38.5</i>		

Notes:

- a. Inventoried in 1994; no signs.
- b. Warning (black on yellow) signs only

Island of Maui

Existing Bicycle Facilities

Facility Location	Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)	Addition since 1994 Plan	Notes
West Maui							
Honoapiilani Highway Waiale Rd— Fleming Beach Park	S	24.4					
Lahainaluna Road Kalena St—Lahainaluna Interm. School	C		1.6			●	
Keawe Street Honoapiilani Hwy—End of road	C		0.5			●	
South Maui							
Piilani Highway Mokulele Hwy—End of Hwy	S	7.2					
East Lipoa Street S. Kihei Rd—Piilani Hwy	C		0.5				
Kenolio Street Kaonoulu St—Ohukai St	C		0.7			●	
Kaonoulu Street S. Kihei Rd—Piilani Hwy	C		0.2			●	
Kulanihakoi Street Piilani Hwy—Mahealani Pl	C		0.5			●	
S. Kihei Road Uilani St—Okolani Dr	C		3.5			●	
Alanui Ke Alii S. Kihei Rd—Piilani Hwy	C		0.5			●	
Okolani Drive S. Kihei Rd—Piilani Hwy	C		0.8			●	
Wailea Alanui Drive Okolani Dr—Kilohana Dr	C		0.5			●	
Makena Alanui Drive Wailea Blue Golf Course— Maui Prince	C		2.5			●	

Island of Maui

Existing Bicycle Facilities

Facility Location	Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)	Addition since 1994 Plan	Notes
Upcountry							
Kekaulike Avenue Haleakala Crater Rd—Kula Hwy	S	3.0				●	
Haiku Road Pauwela Rd—Hana Hwy	C	1.1				●	
Wailuku—Kahului							
North Shore Bikeway Hobron Ave—Alakapa Pl	C		2.4	1.0		●	
Kamehameha Avenue Hana Hwy—Puunene Ave	C	0.4					a
Kamehameha Avenue Puunene Ave—Papa Ave	C		1.3			●	
Papa Avenue Kaahumanu Ave—Kamehameha Ave	C		1.3				
Papa Avenue Laau St—Hina St	C		0.2			●	
Hina Avenue Wakea Ave—Papa Ave	C		0.8			●	
Lono Avenue Kamehameha Ave—Laau St	C		1.0			●	
Wakea Avenue Kea St—Puunene Ave	C		1.1			●	
Kanaloa Avenue Kaahumanu Ave—Waiehu Beach Rd	C		0.9			●	
Kahekili Highway Market St—Waiehu Beach Rd	C	1.7				●	
Waiale Road Start of Waiale Rd—Maui Correctional Ctr	C		0.5			●	
Nonohe Place Hana Hwy—end	C		0.3			●	

Island of Maui Existing Bicycle Facilities

Facility Location	Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)	Addition since 1994 Plan	Notes
Maui Total							
State Facilities		34.6	0.0	0.0	34.6		
County Facilities		3.2	21.6	1.0	25.8		
All Jurisdictions		37.8	21.6	1.0	60.4		
<i>Completed prior to 1994 Plan</i>		32.0	1.8	0.0	33.8		
<i>Added since 1994 Plan</i>		5.8	19.8	1.0	26.6		

Notes:

a. Inventoried in 1994; no signs

Island of Hawaii

Existing Bicycle Facilities

Facility Location	Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)	Addition since 1994 Plan	Notes
Hilo							
Kanoelehua Avenue Kamehameha Ave—Puainako St	S		1.8			●	
Kanoelehua Avenue Puainako St—Makalika	S	1.7				●	
Kawili Street Manono St—Puainako St	S		1.0			●	
Kalanianaʻole Avenue Kamehameha Ave— Leleiwi Beach Park	C	3.4				●	
Mohouli Street Extension Beyond Komohana St	C	1.2				●	
Kailua-Kona							
Kailua Park Path at Old Kona Airport	C			2.3		●	
Kuakini Highway Palani Rd— Old Kona Airport	C	0.7				●	
Palani Road Queen Kaahumanu Hwy— Kuakini Hwy	C	0.3					a
Queen Kaahumanu Highway Palani Rd—Keahole Airport	S	6.9					a
Kealakehe Pathway Keanalehu Dr—Kealakehe Rd	C			0.7		●	
Waluā Road Bike and Pedestrian Scenic Route Lako St—Vicinity of Old Mamalahoa Hwy	C			3.3		●	

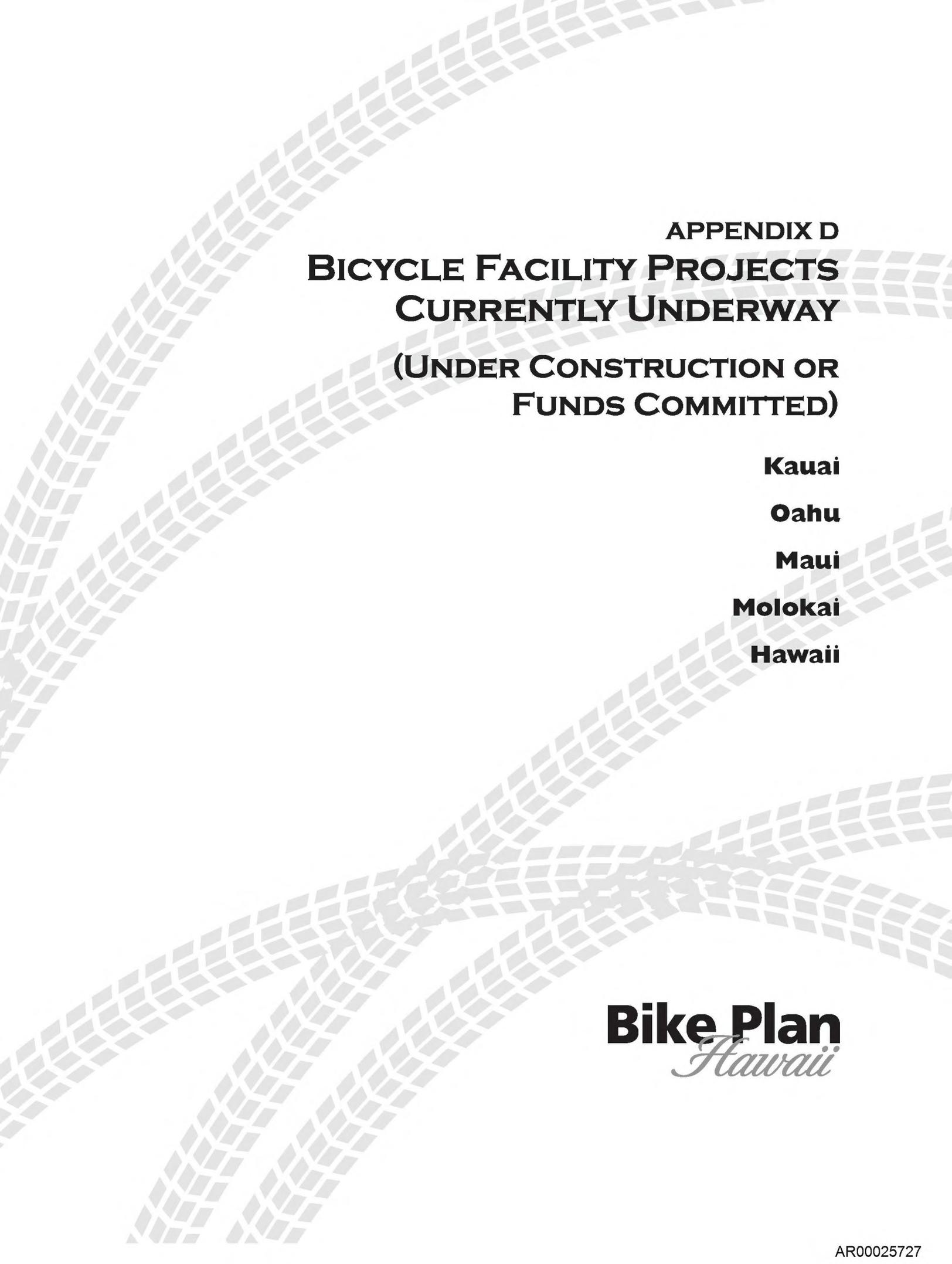
Island of Hawaii

Existing Bicycle Facilities

Facility Location	Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)	Addition since 1994 Plan	Notes
Puna							
Keaau–Pahoa Bypass Road Mamalahoa Hwy–Roadway B	S	1.9				●	
Keaau–Pahoa Road Vicinity of Pohaku Dr– Paradise Dr	S	2.2				●	
Hawaii (Big Island) Total							
State Facilities		12.7	2.8	0.0	15.5		
County Facilities		5.6	0.0	6.3	11.9		
All Jurisdictions		18.3	2.8	6.3	27.4		
<i>Completed prior to 1994 Plan</i>		7.2	0.0	0.0	7.2		
<i>Added since 1994 Plan</i>		11.1	2.8	6.3	20.2		

Notes:

a. Inventoried in 1994; no signs.



APPENDIX D
BICYCLE FACILITY PROJECTS
CURRENTLY UNDERWAY
(UNDER CONSTRUCTION OR
FUNDS COMMITTED)

Kauai

Oahu

Maui

Molokai

Hawaii

Bike Plan
Hawaii

Bicycle Facilities Currently Underway* (as of August 2003)

Total by Island	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)
Kauai	0.0	0.0	3.4	3.4
Oahu	18.8	4.6	14.3	37.7
Maui	7.5	11.0	7.0	25.5
Molokai	5.8	0.0	0.0	5.8
Hawaii	31.7	9.8	9.4	50.9
Statewide	63.8	25.4	34.1	123.3

*Design and construction

Island of Kauai

Bicycle Facilities Currently Underway

Facility Location	Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)
Lihue					
Kaunualii Highway Kuhio Hwy—(vicinity) Maluhia Rd	S	To be improved (see note)			
Kawaihau					
Kapaa–Kealia Pedestrian/Bike Path	C			3.4	
Kauai Total					
State Facilities		0.0	0.0	0.0	0.0
County Facilities		0.0	0.0	3.4	3.4
All Jurisdictions		0.0	0.0	3.4	3.4

Note: Existing 9-mile bicycle facility will be replaced as part of Kaunualii Highway widening project. Mileage counted in the inventory of existing facilities.

Island of Oahu

Bicycle Facilities Currently Underway

Facility Location	Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)
Central Oahu					
Village Park Connector Hiapo St—Kopaa St	C		0.4		
Kamehameha Highway Kuaahelani Ave—Meheula Pkwy	S	0.4			
Leeward Oahu					
Farrington Highway Keaau Beach Park—Orange St	S	2.4			
Farrington Highway Orange St—Ala Hema St	S		1.4		
Farrington Highway Ala Hema St— Auyong Homestead Rd	S	5.2			
Fort Barrette Road Farrington Hwy—Renton Rd	S		1.1		
Leeward Bikeway, Phases 1 & 2 Waipio Point Access Rd— Lualualei Naval Rd	S			10.9	
Pearl Harbor Bike Path Asing Park—Ft. Weaver Rd	C			0.7	
North Shore					
Waialua Beach Road Waialua Beach—Kaukonahua Rd	C			2.7	
Kamehameha Highway Crouching Lion— Waiahole Valley Rd	S	7.2			

Island of Oahu

Bicycle Facilities Currently Underway

Facility Location	Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)
Windward Oahu					
Haiku Road Kahuhipa Rd—Haiku Stairs	C	0.9			
Keaahala Road Windward Comm. College— Kahekili Hwy	C	0.2			
Keolu Drive Hamakua Dr—Nanialii St	C		1.0		
Kalanianaʻole Highway Olomana Golf Links—Aloiloi St	S	2.1			
Primary Urban Center (PUC)					
Kamehameha Highway Radford Dr—Arizona Memorial	S		0.3		
Diamond Head Road (above lighthouse) 1 way (Kahala-bound) bike lane; 1 way (Waikiki-bound) signed shared road	C	0.4	0.4		
Oahu Total					
State Facilities		17.3	2.8	10.9	31.0
County Facilities		1.5	1.8	3.4	6.7
All Jurisdictions		18.8	4.6	14.3	37.7

Island of Maui

Bicycle Facilities Currently Underway

Facility Location	Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)
Wailuku–Kahului					
Maui Lani Parkway Kamehameha Ave–Kuihelani Hwy	C		0.5		
Kamehameha Avenue Papa Ave–Maui Lani Parkway	C		0.7		
Puunene Avenue Kuihelani Highway–Hansen Rd	S	0.6		0.6	
Mokulele Highway Hansen Rd–Piilani Hwy	S	5.9		5.9	
Kihei–Makena					
Honoapiilani Highway North Kihei Rd–(Honoapiilani Hwy)	S	1.0			
South Kihei Road Ohukai Rd–E. Lipoa St	C		1.9		
North–South Road E. Welakahao Rd (Lokelani Interm. School)– Kanani Rd	C		0.7		
North–South Road W. Waipulani–E. Lipoa Rd	C		0.5		
Kihei Greenway W. Waipulani–E. Lipoa Rd	C			0.5	
Upcountry–Haiku–Paia					
Baldwin Avenue Makawao Ave–Hana Hwy	C		6.7		
Maui Total					
State Facilities		7.5	0.0	6.5	14.0
County Facilities		0.0	11.0	.5	11.5
All Jurisdictions		7.5	11.0	7.0	25.5

Island of Molokai

Bicycle Facilities Currently Underway

Facility Location	Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)
Kalae Highway Maunaloa Hwy—Kalaupapa	S	5.8			5.8

Island of Hawaii

Bicycle Facilities Currently Underway

Facility Location	Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)
Hilo					
Hilo Bayfront Hwy Manono St—Kanoelehua Ave	S		0.5		
Puainako Street Extension (Beyond Komohana St)	C	6.0			
Puna					
Keaau—Pahoa Road Paradise Dr—Kahakai Blvd	S	6.0			
Kona					
Queen Kaahumanu Highway Kawaihae Rd—Waikoloa Rd	S	7.9			
Queen Kaahumanu Highway Kealakehe Parkway—Henry Street	S	To be improved 2.4*			
Queen Kaahumanu Highway Makala Rd—Palani Rd	S			0.6	
Kuakini Highway Palani Rd—Hualalai Rd	C		0.5		
Lako Street Kahului—Keauhou Pkwy— Hualalai Rd	C	1.8			
Ke Ala o Keauhou (also known as Kahului—Keauhou Parkway or Alii Parkway Lako St—Mamalaho Hwy	C		8.8		
Ke Ala o Keauhou Lako St—Mamalaho Hwy	C			8.8	
Mamalaho Bypass Highway	P				

Island of Hawaii Bicycle Facilities Currently Underway

Facility Location	Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)
Waimea					
Mamalahoa Highway Mud Ln–Honokaa–Waipio Rd	S	10.0			
Hawaii (Big Island) Total					
State Facilities		23.9	0.5	0.6	25.0
County Facilities		7.8	9.3	8.8	25.9
Other Facilities		0.0	0.0	0.0	0.0
All Jurisdictions		31.7	9.8	9.4	50.9

*Queen Kaahumanu Highway widening project will improve existing bikeway; mileage excluded from this list and accounted for in the inventory of existing bicycle facilities.



**APPENDIX E
PROPOSED
BICYCLE FACILITIES
(MAP LIST)**

Kauai

Oahu

Maui

Molokai

Lanai

Hawaii

Bike Plan
Hawaii

Island of Kauai

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
North Shore							
1	Kuhio Highway Haena State Park–Hanalei Bay	Signed Shared Road	S	C	6.7	\$2,181,000	III
2a	North Shore Path Network Mauka of Kuhio Highway	Path	C/P	C	12.2	\$4,706,000	III
2b	North Shore Path Network Coastal roads and beach accesses	Signed Shared Road	C/P	C	10.6	\$3,450,000	III
3	Kuhio Highway Hanalei Bay–Kilauea	Signed Shared Road	S	B	8.2	\$407,000	II
4	Kilauea Road Kuhio Hwy–Kilauea Point	Path	C/F	C	2.1	\$810,000	II
5	Kuhio Highway Kilauea–Anahola	Signed Shared Road	S	A	9.9	\$36,000	II
Kawaihau							
6	Kuhio Highway Kealia–Anahola	Signed Shared Road	S	A	3.2	\$12,000	II
7a	Coastal Shared Use Path (Phase 4) Lihue–Lydgate Park Path	Path	C	C	10.2	\$3,935,000	II
7b	Coastal Shared Use Path (Phase 3) Lydgate Park Path–Waikaea Canal	Path	C	C	2.6	\$1,003,000	I
7c	Coastal Shared Use Path (Phase 5) Kuna Bay–Anahola	Path	C	C	3.5	\$1,350,000	I
8	Kealia Road Koolau–Kuhio Hwy	Signed Shared Road	C	C	4.4	\$1,432,000	III
9	Mailihuna Road Kawaihau Rd–Kuhio Hwy	Signed Shared Road	C	C	0.6	\$195,000	III
10	Kaapuni Road Kawaihau Rd–Olohena Rd	Signed Shared Road	C	B	1.8	\$89,000	III
11	Waikaea Canal Kuhio Hwy–along canal	Path	C	C	1.5	\$579,000	III
12	Kuhio Highway Wailua–Kealia	Signed Shared Road	S	B	4.4	\$218,000	II
13	Kauai Commuter Bikeway Wailua River–Kapaa	Path	C	C	2.4	\$926,000	III

Island of Kauai

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Kawaihau							
14	Future Bypass Highway Hanamaulu–Kapaa	Signed Shared Road	S	C	7.8	\$2,539,000	IV
15	Haleilio Road Kuhio Hwy–Kaulana Rd and Lanakila Rd to community park	Path	C	C	1.6	\$617,000	II
16a	Kamalu Road Kuamoo Rd–Olohena Rd	Signed Shared Road	C	B	1.7	\$84,000	III
16b	Olohena Road/Kukui Street Kamalu Rd–Kuhio Hwy	Signed Shared Road	C	B	3.3	\$164,000	III
16c	Olohena Road Kamalu Rd–Moalepe Trailhead	Signed Shared Road	C	C	2.1	\$684,000	III
17a	Kuamoo Road Kuhio Hwy–Kamalu Rd	Signed Shared Road	S	B	2.8	\$139,000	III
17b	Kuamoo Road Kamalu Rd–Loop at top of Homesteads	Signed Shared Road	S	A	2.3	\$8,000	III
18a	Kawaihau Road Path Extension from Kapaa Elem. School–Kuhio Hwy	Path	C	C	0.6	\$231,000	II
18b	Kawaihau Road Path (Upgrade) Kapaa Elem. School–Kapahi Park	Path	C	C	3.0	\$1,157,000	II
18c	Kawaihau Road/Kainahola Road/Waipouli Road Kapahi Park–Moalepe Trailhead	Path	C	C	3.7	\$1,427,000	III
Lihue							
19	Hanamaulu Road–Hehi Road Kuhio Hwy–Near Kapule Hwy	Signed Shared Road	C	A	1.0	\$4,000	II
20a	Ahukini Road Kuhio Hwy–Kapule Hwy	Lane	S	B	1.0	\$45,000	I
20b	Ahukini Road Kapule Hwy–State Recreation Pier	Signed Shared Road	S	B	1.8	\$89,000	II
21	Future Bypass Highway Kaunualii Hwy–North of Hanamaulu	Signed Shared Road	S	C	4.8	\$1,569,000	IV
22	Kuhio Highway Rice St–Hanamaulu	Signed Shared Road	S	C	2.8	\$911,000	II

Island of Kauai

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Lihue							
23	Kauai Commuter Bikeway Vicinity Kaumualii–Wailua River	Path	C/P	C	10.0	\$3,857,000	II
24	Connection A to Future Bikeway Isenberg Tract–Future Commuter Bikeway	Signed Shared Road	C/P	C	0.7	\$228,000	III
25	Connection B to Future Bikeway Isenberg Park–Future Commuter Bikeway	Signed Shared Road	C/P	C	0.4	\$130,000	III
26	Hardy Street Kuhio Hwy–Umi St	Lane	C	B	0.2	\$9,000	I
27	Haleko Road Nawiliwili Rd–Rice St	Lane	C	B	0.7	\$31,000	III
28	Umi Street Rice St–Ahukini Rd	Lane	C	C	0.3	\$377,000	II
29	Puaole–Hoolako Streets Umi St–Kapule Hwy	Signed Shared Road	C	B	1.5	\$74,000	III
30	Rice Street Kuhio Hwy–Kapule Hwy	Lane	C	C	1.1	\$1,382,000	II
31	Rice Street Lala Rd–Kapule Hwy	Signed Shared Road	C	A	0.8	\$3,000	II
32	Lala Road Nawiliwili Rd–Rice St	Signed Shared Road	C	A	0.8	\$3,000	II
33	Lihue Community Pathway Along Nawiliwili Stream/ RR ROW to Civic Center	Path	C	C	2.6	\$1,003,000	II
34	Nawiliwili Road Kaumualii Hwy–Lala Rd	Signed Shared Road	C	B	1.6	\$79,000	I
35	Puhi Road Puhi Rd–Hulemalu Rd	Signed Shared Road	C	C	0.8	\$260,000	I
36	Hulemalu Road Puhi Rd–Niumalu Rd	Signed Shared Road	C	A	1.9	\$7,000	II
37	Waapa Road Niumalu Rd–Nawiliwili Beach	Signed Shared Road	C	A	1.2	\$4,000	III
38	Future Bypass Highway Poipu–Kaumualii Hwy	Signed Shared Road	S	C	6.6	\$2,148,000	IV

Island of Kauai

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Koloa-Poipu-Kalaheo							
39	Maluhia Road Kaunualii Hwy-Koloa Town	Path	C	C	3.4	\$1,312,000	I
40	Omao Road Kaunualii Hwy-Koloa Rd	Signed Shared Road	C	C	2.1	\$684,000	III
41a	Weliweli Road Maluhia Rd-Koloa-Poipu Bypass	Signed Shared Road	C	A	1.2	\$4,000	II
41b	Hapa Road Weliweli Rd-Poipu Rd	Path	C	C	1.1	\$424,000	II
42	Koloa-Poipu Bypass Maluhia Rd-Poipu Rd	Signed Shared Road	C	C	2.0	\$651,000	II
43	Poipu Bay Coastal Path Poipu-Paoo Point	Path	C/P	C	5.5	\$2,122,000	III
44	Poipu Road Koloa-Poipu	Signed Shared Road	C	C	2.7	\$879,000	II
45	Lawai Road Kukuiula-Poipu	Signe Shared Road	C	C	1.4	\$456,000	II
46	Kukuiula Future Roads Lawai Bay-Poipu Rd	Signed Shared Road	C/P	C	5.1	\$1,660,000	IV
47	Koloa Road Lawai-Koloa	Signed Shared Road	C	C	3.4	\$1,107,000	II
48	Kaunualii Highway Maluhia Rd-Hanapepe	Signed Shared Road	S	A	8.6	\$31,000	I
49	Future Kaunualii Highway Bypass Halewili-Poipu	Signed Shared Road	S	C	6.0	\$1,953,000	IV
50	Halewili Road Kaunualii Hwy-Kaunualii Hwy	Signed Shared Road	S	A	3.9	\$14,000	III
51	Port Allen-Poipu Coastal Path Port Allen-Kukuiula	Path	C/P	C	9.1	\$3,510,000	III

Island of Kauai

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
West Side							
52	Salt Pond Coastal Path Waimea Bay–Salt Pond	Path	C/P	C	8.6	\$3,317,000	III
53a	Kaumualii Highway Mana Rd–Kekaha	Signed Shared Road	S	A	9.9	\$36,000	II
53b	Kaumualii Highway Kekaha–Hanapepe	Signed Shared Road	S	A	7.3	\$27,000	II
54	Kekaha Road Kaumualii Hwy–Kaumualii Hwy	Signed Shared Road	C	C	2.6	\$846,000	III
55	Kokee Road Kekaha–Puu o Kila Lookout	Signed Shared Road	S/C	C	16.3	\$5,305,000	II
56	Mana–Polihale Trail End of Kaumualii Hwy– Polihale State Park	Path	C/P	C	5.1	\$1,967,000	III

* Juris. (Jurisdiction)

S = State

C = County

F = Federal

P = Private

** Cost Class. (Cost Classification)

A = Minor improvements

B = Moderate improvements

C = Major improvements/new facility

*** Priority Level

I = Near-term

II = Mid-term

III = Long-term

IV = Contingent on road development

Island of Oahu

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Central Oahu							
1a	Kaukonahua Road Waiialua Beach Rd– Farrington Hwy	Signed Shared Road	S	B	1.2	\$52,000	III
1b	Kaukonahua Road Farrington Hwy–Wilikina Dr	Signed Shared Road	C	C	4.0	\$1,132,000	III
1c	Kaukonahua Road Wilikina Dr–Kamehameha Highway	Signed Shared Road	C	C	2.1	\$5,928,000	III
2	Kamananui Road Kamehameha Hwy–Wilikina Dr	Signed Shared Road	S	B	1.2	\$52,000	III
3a	Wilikina Drive Kaukonahua Rd–Kamananui Rd	Signed Shared Road	C	B	1.9	\$82,000	III
3b	Wilikina Drive Kamananui Rd–Kunia Rd	Signed Shared Road	S	B	1.3	\$56,000	III
4	Kilani Avenue N. Cane St–Wahiawa Elem School	Signed Shared Road	C	C	0.5	\$142,000	II
5	California Avenue Plum St–Iliahi Elementary School	Signed Shared Road	C	C	1.2	\$340,000	II
6	Wilikina Drive Kunia Rd–Kamehameha Hwy	Signed Shared Road	S	B	0.7	\$30,000	III
7a	Kamehameha Highway Haleiwa Bypass–Wilikina Dr	Signed Shared Road	S	B	8.8	\$380,000	III
7b	Kamehameha Highway Wilikina Dr–Kuahelani Ave	Signed Shared Road	S	B	2.7	\$117,000	III
8	Meheula Parkway Entire length	Lane	C	B	4.8	\$184,000	I
9	H-2 Mililani Interchange At Meheula Parkway	Lane/Signage	C	B	0.2	\$8,000	I
10	Kipapa Gulch Pathway Anania Dr– Central Oahu Regional Park	Path	?	C	2.2	\$735,000	I
11	Kunia Road Anonui St–Wilikina Dr	Signed Shared Road	S	B	8.0	\$345,000	III
12a	Kamehameha Highway Meheula Pkwy–Ka Uka Blvd	Signed Shared Road	S	B	2.4	\$104,000	III

Island of Oahu

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Central Oahu							
I2b	Kamehameha Highway Waipio Uka Blvd/Central Oahu Regional Park–Connector to Waipahu St	Signed Shared Road	S	B	1.0	\$43,000	III
I3	Waipahu Street East–West cross route thru Waipahu	Lane	C	C	3.0	\$3,266,000	III
I4a	Paiwa Street Farrington Hwy–H-1 Freeway	Lane	C	C	1.0	\$1,092,000	II
I4b	Mokuola Street Nalii St–Farrington Hwy	Lane	C	C	0.2	\$219,000	II
I5	Village Park Connector (extension) to Waipahu Sugar Mill	Path	C/P	C	1.0	\$335,000	II
I6a	Cane Haul Road H-2 (Waihona)–Waipahu St	Path	C/P	C	1.3	\$419,000	II
I6b	Cane Haul Road Waipahu St–Waipio Pt Access Rd	Path	C/P	C	2.0	\$657,000	II
I7a	Waipahu Depot Road Waipahu St–Pearl Harbor Bike Path	Lane	C	B	0.4	\$15,000	II
I7b	Waipahu Depot Road/Waipio Pt. Access Road (Connecting Pearl Harbor Bike Path to Waipio Soccer Park)	Lane	C	B	2.4	\$93,000	II
I8	Pearl Harbor Bike Path Waipahu Depot Rd–approx. Leowaena St	Path	C	C	2.8	\$939,000	II

Island of Oahu

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Leeward Oahu							
19	Path next to Farrington Highway Future North-South Rd– Ft. Weaver Rd	Path	C	C	2.1	\$711,000	IV
20	Farrington Highway Kapolei Golf Course– Ft. Weaver Rd	Signed Shared Road	C/S	C	3.2	\$906,000	IV
21a	Future North–South Road Farrington Hwy–Kapolei Parkway	Lane	S	C	2.0	\$2,185,000	IV
21b	Future North–South Road Makai of Kapolei Parkway	Lane	S	C	2.6	\$2,840,000	IV
22	Renton Road Ft. Weaver Rd–Future North-South Rd	Signed Shared Road	C	B	1.3	\$56,000	III
23a	Mango Tree Road Kapolei/Ewa Villages–Asing Park	Path	C/P	C	1.5	\$503,000	II
23b	Mango Tree Road Asing Park/Park&Ride– Honouliuli Path	Path	C/P	C	1.3	\$436,000	III
24	Honouliuli Path West Loch–Mango Tree Rd	Path	C/P	C	1.4	\$470,000	III
25	Honouliuli Path Mango Tree Rd–North Rd	Path	C/P	C	2.0	\$671,000	III
26	Geiger Road Ft. Weaver Rd–Kapolei Pkwy	Lane	C	C	0.8	\$874,000	II
27a	Kapolei Parkway (Ewa Beach) Geiger Rd–Papipi Rd	Lane	C	C	1.6	\$1,748,000	IV
27b	Kapolei Parkway (Villages segment) Kapolei Pkwy (Kaloι Gulch)– Kalehuna	Lane	C	C	1.4	\$1,529,000	IV
27c	Kapolei Parkway (City segment) Ft. Barrette Rd–Kamokila Blvd	Lane	C	C	1.0	\$1,092,000	IV
28	North Road Ft. Weaver Rd–A Ave	Lane	C	A	2.0	\$6,000	III

Island of Oahu

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Leeward Oahu							
29	Bravo Road North Rd–Connection to ferry landing	Signed Shared Road	C/F	B	1.4	\$60,000	III
30	Papipi Road Ft. Weaver Rd–Oneula Beach Park	Signed Shared Road	C	C	0.9	\$255,000	III
31	Onuela Beach Bike Path Through the park	Path	C	C	0.7	\$235,000	III
32	Ewa Marina Access Connection to Ewa Marina	Lane	C	C			IV
33	Plantation Road (E-W connection) Future Kapolei Pkwy–Hanson Rd	Lane	C	C	3.7	\$546,000	III
34a	Hanson Road Leeward Bikeway–White Plains Beach	Signed Shared Road	C/F	C	1.7	\$481,000	I
34b	Essex Road Leeward Bikeway–White Plains Beach	Signed Shared Road	C/F	C	0.7	\$198,000	I
35	<i>Unused Number</i>						
36	Kamaaha Avenue (extension) Ft. Barrette Rd–Future Kapolei Pkwy	Lane	C	C	1.8	\$1,966,000	IV
37	<i>Unused Number</i>						
38	Enterprise Avenue Leeward Bikeway–Midway	Signed Shared Road	C	C	1.0	\$283,000	III
39	Coral Sea Road Around Barbers Point airfield	Path	C	C	4.7	\$1,325,000	III
40	Manawai (extension) Kamokila Blvd–Future Kapolei Pkwy	Lane	C	C	0.6	\$655,000	IV
41	Farrington Highway Kamokila Blvd–Honokai Hale	Signed Shared Road	S	C	2.5	\$708,000	III
42	Makaiwa Hills Farrington Hwy–Aliinui Dr	Signed Shared Road	C	C	1.9	\$588,000	III
43	Aliinui Drive (extension) Connect to future Kapolei Pkwy	Lane	C	C	1.0	\$1,092,000	IV

Island of Oahu

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Leeward Oahu							
44	Kalaeloa Boulevard Kapolei Parkway–Olai St	Signed Shared Road	S/C	A	3.2	\$11,000	III
45	Aliinui Drive Ko Olina Resort Access	Signed Shared Road	P/C?	A	4.2	\$13,000	III
46	Waipahe Place Aliinui Dr–access to Ko Olina Marina	Signed Shared Road	P/C?	A	0.3	\$1,000	III
47	Farrington Highway Auyong Homestead Rd– Farrington Hwy at Honokai Hale	Signed Shared Road	S	C	3.8	\$1,076,000	I
48	Farrington Highway Kaena Point Path– Keeau Beach Park	Signed Shared Road	S	B	4.5	\$194,000	III
49	Kaena Point Path Farr Hwy (Waianae)– Farr Hwy (Mokuleia)	Path	C	C	4.5	\$1,509,000	III
North Shore							
50	Farrington Highway Kam Hwy (Waialua)– End (Kaena Beach)	Signed Shared Road	S	B	8.4	\$362,000	III
51	Haleiwa Road Waialua Beach Rd– Haleiwa Alii Beach Pk	Signed Shared Road	C	C	1.6	\$453,000	III
52	Kamehameha Highway Waialua Beach Rd– Haleiwa Bypass	Signed Shared Road	S	B	1.5	\$65,000	III
53	<i>Unused Number</i>						
54	Kamehameha Highway Haleiwa Bypass– Waimea Valley Rd	Signed Shared Road	S	C	3.9	\$1,104,000	III
55	Ke Ala Pupukea Path (extension) Waimea Bay–Haleiwa Beach Park	Path	C	C	3.5	\$1,174,000	I
56	Kamehameha Highway Waimea Bay–Waialeale Beach Park	Signed Shared Road	S	B	4.5	\$194,000	III
57	Kamehameha Highway Waialeale Beach Park– Crouching Lion	Signed Shared Road	S	C	17.1	\$4,840,000	III

Island of Oahu

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Windward Oahu							
58	Kamehameha Highway Waiahole Valley Rd–Kahekili Hwy	Signed Shared Road	S	C	2.0	\$566,000	III
59	Kahekili Highway Kamehameha Hwy–Haiku Rd	Signed Shared Road	S	B	3.2	\$138,000	III
60	Kamehameha Highway Heeia–Kahekili Hwy	Signed Shared Road	C	B	4.3	\$185,000	II
61	Kamehameha Hwy Kahuhipa Rd–Kaneohe Bay Dr	Lane	C	C	1.0	\$1,092,000	II
62	Lilipuna Road Kamehameha Hwy– Kamehameha Hwy	Signed Shared Road	C	C	2.4	\$691,000	II
63	Kahuhipa Street Haiku Rd–Kamehameha Hwy	Signed Shared Road	C	B	1.2	\$53,000	III
64	Keaahala Road Kamehameha Hwy– Windward CC	Signed Shared Road	C	B	0.9	\$39,000	III
65	<i>Unused Number</i>						
66	<i>Unused Number</i>						
67	Likelike Highway Kahekili Hwy–Kamehameha Hwy	Signed Shared Road	S	C	0.5	\$142,000	III
68	Kamehameha Highway Likelike Hwy–Koolau View Dr	Lane	S	C	1.1	\$1,202,000	III
69	Keneke Street Greenway Along the stream	Path	C	C	0.5	\$168,000	III
70	Anoi Road Luluku Rd–Likelike Hwy	Signed Shared Road	C	B	0.4	\$16,000	III
71	Makalani/Pua Alowalo/Pua Inia Kaneohe Bay Dr– Kamehameha Hwy	Signed Shared Road	C	B	0.6	\$25,000	II
72	Aumoku/Namoku Kanehoe Bay Dr–Mokulele Dr	Signed Shared Road	C	B	0.8	\$35,000	II
73	Mokulele Drive Kamehameha Hwy– Kaneohe Bay Dr	Signed Shared Road	C	B	1.2	\$50,000	II

Island of Oahu

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Windward Oahu							
74	Luluku Road Loop around Hoomaluhia Gardens	Signed Shared Road	C	A	3.6	\$11,000	II
75	Kamehameha Highway Koolau View Dr–Pali Hwy	Signed Shared Road	S	C	1.3	\$368,000	III
76a	Kalanianaʻole Highway Castle Junction–Kamehameha Hwy	Signed Shared Road	S	C	1.8	\$509,000	III
76b	Pali Highway Kamehameha Hwy–Pali Tunnel	Signed Shared Road	S	C	1.7	\$481,000	III
77a	Old Pali Road Pali Lookout–Pali Hwy	Path	S	B	1.2	\$269,000	II
77b	Pali Lookout Access Road Pali Hwy–Pali Lookout	Signed Shared Road	S	B	1.1	\$49,000	III
77c	Pali Highway Nuuanu-Pali Dr– Pali Lookout Access	Signed Shared Road	S	C	0.4	\$108,000	III
77d	Nuuanu-Pali Drive Pali Hwy–Pali Hwy	Signed Shared Road	C	B	2.3	\$98,000	III
78	Kaneohe Bay Drive Kamehameha Hwy– H-3 Interchange	Signed Shared Road	S	B	3.5	\$151,000	III
79	Mokapu Boulevard Kaneohe Bay Dr–N. Kalaheo Ave	Lane	S	B	2.2	\$84,000	III
80	<i>Unused Number</i>						
81	Kalaheo Avenue Kainui Dr–Kuulei Rd	Signed Shared Road	C	A	1.4	\$4,000	II
82	Kuulei Road Kainalu Dr–Kalaheo Rd	Lane	C	B	0.3	\$12,000	II
83	Hahani Street Kailua Rd–Hamakua Rd	Lane	C	B	0.2	\$8,000	III
84a	Kawainui Levee Path Mokapu Blvd–Kailua Rd	Path	C	B	1.3	\$289,000	I
84b	Kawainui Marsh Path Mokapu Blvd–Kailua Rd	Path	C/P	C	2.6	\$872,000	II

Island of Oahu

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Windward Oahu							
85	Kapaa Quarry Road Mokapu Blvd–Kalanianaʻole Hwy	Signed Shared Road	C	B	2.6	\$112,000	III
86	Hamakua Drive Hahani St–Kailua Rd	Signed Shared Road	C	B	0.3	\$12,000	III
87	Kailua Road Wanaao Rd–End of existing bike lane	Lane	C	B	0.5	\$19,000	II
88	Wanaao Road Kailua Rd–Keolu Dr	Lane	C	C	1.0	\$283,000	II
89	Awakea/Ka Awakea/Papalani Kailua Rd–Keolu Dr	Signed Shared Road	C	C	0.7	\$190,000	II
90	Keolu Drive Kalanianaʻole Hwy–Loop to end	Lane	C	B	2.1	\$242,000 ^a	II
91	Kalanianaʻole Highway Kailua Rd–Olomana Golf Links	Signed Shared Road	S	A	2.6	\$8,000	II
92	Old Kalanianaʻole Highway Kalanianaʻole Hwy–Kalanianaʻole Hwy	Signed Shared Road	C	B	1.7	\$73,000	III
93a	Waimanalo Circuit Kumuhau St–Waikupanaha/Ahiki St	Signed Shared Road	C	B	3.4	\$146,000	III
93b	Waimanalo Circuit Hihimanu St–Oluolu St	Signed Shared Road	C	B	1.7	\$73,000	III
94	Kalanianaʻole Highway Aloiloi St (Waimanalo)–Makapuu	Signed Shared Road	S	C	4.8	\$1,359,000	I

Island of Oahu

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
East Oahu							
95	Kalanianaʻole Highway Makapuu–Sandy Beach	Signed Shared Road	S	A	2.2	\$7,000	I
96	Kalanianaʻole Highway Sandy Beach–Lunalilo Home Rd	Signed Shared Road	S	A	2.6	\$8,000	II
97	Portlock Road Kalanianaʻole Hwy– Lunalilo Home Rd	Signed Shared Road	C	A	0.8	\$3,000	II
98	Ahukini Street Lunalilo Home Rd– Kamiloiki Elem School	Signed Shared Road	C	B	0.7	\$2,000	III
99a	Wailua Street Hawaii Kai Dr–Lunalilo Home Rd	Signed Shared Road	C	B	0.5	\$22,000	III
99b	Keahole Street Kalanianaʻole Hwy–Hawaii Kai Dr	Signed Shared Road	C	B	0.6	\$26,000	III
99c	Hawaii Kai Drive Kalanianaʻole Hwy–Wailua St	Signed Shared Road	C	B	1.7	\$73,000	III
99d	Kawaihae Street Kalanianaʻole Hwy–Hawaii Kai Dr	Signed Shared Road	C	A	0.9	\$3,000	III
99e	Halemaumau Street Kalanianaʻole Hwy– Kalanianaʻole Hwy	Signed Shared Road	C	B	0.8	\$35,000	III
99f	Hind Iuka Drive East Hind Dr– Wailupe Valley School	Signed Shared Road	C	B	0.7	\$30,000	III
99g	West/East Hind Drive Kalanianaʻole Hwy– Kalanianaʻole Hwy	Signed Shared Road	C	B	1.2	\$52,000	III
100	Analii/Poola Street Kalani Waiālae Iki Park– Keikilani Aina Haina Elem School	Path	C	C	0.9	\$305,000	II

Island of Oahu Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Primary Urban Center							
101	Pali Highway Nuuanu Ave–Waokanaka St	Signed Shared Road	S	C	1.3	\$368,000	II
102	Ala Moana Boulevard Kalakaua Blvd–Connect to end of existing Nimitz Bike Lane	Lane	S	C	2.7	\$2,950,000	I
103	Nimitz Highway Middle St–Waiakamilo Rd	Lane	S	C	1.0	\$1,092,000	I
104	Liliha Street King St–H-1 Freeway	Lane	S	C	0.4	\$437,000	III
105	Kamehameha Highway Waimano Home Rd– Aiea Access Rd	Lane	S	C	3.1	\$3,386,000	III
106	<i>Unused Number</i>						
107	Farrington Highway Fort Weaver Rd– Kamehameha Hwy	Lane	S	B	2.2	\$2,403,000	II
108	Farrington Highway (Waiawa Interchange) Kamehameha Hwy– Kamehameha Hwy	Lane	S	C	0.3	\$328,000	II
109a	Kamehameha Highway Waihona St–Waimano Home Rd	Lane	S	C	1.8	\$1,966,000	III
109b	Kamehameha Highway at Waiawa Widen overpass across H-1/H-2	Lane/Bridge	S	C	0.5	\$5,715,000	II

^a = Cost based on actual bid amount

* Juris. (Jurisdiction)

S = State

C = County

F = Federal

P = Private

** Cost Class. (Cost Classification)

A = Minor improvements

B = Moderate improvements

C = Major improvements/new facility

*** Priority Level

I = Near-term

II = Mid-term

III = Long-term

IV = Contingent on road development

Island of Maui

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Wailuku–Kahului							
1	South High Street Honoapiilani Hwy–West Main St	Signed Shared Road	C	C	0.3	\$98,000	II
2	Maui Lani (Various Internal Roads)	Lane	P/C	C	2.3	\$2,889,000	IV
3	Waiale Road Maui Lani–Honoapiilani Hwy	Signed Shared Road	C	B	4.0	\$198,000	III
4	Waiale Road Proposed Iao Stream Path–Honoapiilani Hwy	Signed Shared Road	C	C	0.8	\$260,000	III
5	West Main Street South High St–East Main St	Signed Shared Road	C	C	0.5	\$163,000	II
6	Market Street West Main St–Kahekili Hwy	Signed Shared Road	C	B	0.5	\$25,000	II
7a	Ima Kala Street West Main St–Proposed Iao Stream Path (gate)	Signed Shared Road	C	B	0.5	\$25,000	II
7b	Ima Kala Street Proposed Iao Stream Path (gate)–Kahekili Hwy	Path	C	C	0.6	\$231,000	II
8	Iao Stream Path Ima Kala St–Waiehu Beach Rd	Path	C	B	1.1	\$283,000	II
9	Waiehu Beach Road Kahekili Hwy–Iao Stream	Signed Shared Road	S	A	1.0	\$4,000	II
10	Kahului Beach Road Iao Stream–Kaahumanu Ave	Signed Shared Road	S	A	1.6	\$6,000	II
11a	Wakea Avenue Kaahumanu Ave–Onehee Ave	Lane	C	B	0.4	\$16,000	I
11b	Wakea Avenue Puunene Ave–Hana Hwy	Lane	C	C	0.5	\$641,000	II
12	Onehee Avenue Wakea Ave–Papa Ave	Lane	C	B	0.7	\$31,000	I
13a	Papa Avenue Kamehameha Ave–Laau St	Lane	C	B	0.8	\$36,000	I
13b	Papa Avenue Hina Ave–Puunene Ave	Lane	C	B	0.3	\$13,000	I
14a	Lono Avenue Kaahumanu Ave–Kamehameha Ave	Lane	C	B	0.2	\$9,000	I
14b	Lono Avenue Laau Ave–Papa Ave	Lane	C	B	0.3	\$13,000	I

Island of Maui

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Wailuku–Kahului							
15a	Kuihelani Highway Puunene Ave–Honoapiilani Hwy	Signed Shared Road	S	A	5.3	\$19,000	III
15b	Kuihelani Highway Puunene Ave–Honoapiilani Hwy	Path	S	C	5.3	\$2,044,000	III
16	Puunene Avenue Kaahumanu Ave–Dairy Rd	Lane	S	B	1.1	\$49,000	I
17	North Shore Coastal Loop County Wastewater Treatment Plant–Kanaha Beach Park	Path	C	C	1.3	\$501,000	II
18	Dairy Road Puunene Ave–Hana Hwy	Signed Shared Road	S	B	1.0	\$50,000	II
19	Keolani Place Haleakala Hwy–Airport	Signed Shared Road	C	A	1.0	\$4,000	II
20	Hansen Road Pulehu Rd–Hana Hwy	Signed Shared Road	C	C	0.9	\$293,000	III
Upcountry–Haiku–Paia							
21a	Pulehu Road Hana Hwy–Omaopio Rd	Signed Shared Road	C	C	6.2	\$2,018,000	II
21b	Omaopio Road Pulehu Rd–Kula Hwy	Signed Shared Road	C	C	5.4	\$1,758,000	II
22	Future Kihei–Upcountry Bypass Haleakala Hwy–Kula Hwy	Signed Shared Road	S	C	9.7	\$3,157,000	IV
23	Haleakala Highway Hana Hwy–Kula Hwy	Signed Shared Road	S	B	7.5	\$372,000	III
24	Hana Highway Wailuku–Hana	Signed Shared Road	S	B	51.0	\$2,530,000	III
25	Holomua Road Baldwin Ave–Hana Hwy	Signed Shared Road	C	C	2.9	\$944,000	II
26	Hamakuapoko Road Holomua Rd–Hana Hwy	Signed Shared Road	C	C	1.7	\$553,000	II
27	North Shore Bikeway Extension Alakapa Pl–Baldwin Ave	Path	C	C	1.5	\$579,000	II
28	Pauwela Road Hana Hwy–Haiku Rd	Signed Shared Road	C	C	0.6	\$195,000	III
29	West Kuiaha Road Hana Hwy–Haiku Rd	Signed Shared Road	C	C	0.9	\$293,000	III

Island of Maui

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Upcountry–Haiku–Paia							
30	Haiku Road Hana Hwy–Pauwela Rd	Signed Shared Road	C	B	3.2	\$159,000	II
31	Kokomo Road Kailuhi–Haiku Rd	Signed Shared Road	C	C	3.9	\$1,269,000	III
32	Kaupakulua Road Makawao Ave–Hana Hwy	Signed Shared Road	C	C	4.9	\$1,595,000	III
33	Haliimaile Road Haliimaile–Baldwin Ave	Signed Shared Road	C	C	0.6	\$195,000	III
34	Makawao Avenue Kokomo Rd–Makani Rd	Signed Shared Road	C	C	3.2	\$1,042,000	I
35	Makani Road Makawao Ave– Haleakala Hwy (Pukalani)	Signed Shared Road	C	B	2.0	\$99,000	II
36	Apana Road Makani Rd–Makawao Ave	Signed Shared Road	C	C	0.5	\$163,000	III
37	Kealahoa Avenue Makawao Ave–Hanamu Rd	Signed Shared Road	C	C	1.2	\$391,000	III
38	Hanamu Road Olinda Rd–Haleakala Hwy	Signed Shared Road	C	B	1.3	\$65,000	III
39	Olinda Road Makawao Ave–Hanamu Rd	Signed Shared Road	C	B	1.0	\$50,000	III
40	Pukalani Street Old Haleakala Hwy–Aina Lani Dr	Signed Shared Road	C	C	1.6	\$521,000	III
41	Haleakala Highway Kula Hwy–Kekaulike Ave	Signed Shared Road	S	B	9.2	\$456,000	II
42	Lower Kula Road Kula Hwy–Kula Hwy	Path	C	C	4.7	\$1,813,000	III
43	Future Kihei–Upcountry Connection Trail extension of Naalae Rd	Path	C	C	3.8	\$1,466,000	III
44	Naalae Road Kula Hwy–Kihei Connector	Signed Shared Road	C	C	2.1	\$684,000	III
45	Haleakala Crater Road (Pull-outs along access road to National Park)	Pullouts	S	B	4 ea.	\$89,000	I
46	Kula Highway Kekaulike Ave/ Haleakala–Piilani Hwy	Signed Shared Road	S	B	14.0	\$695,000	III

Island of Maui

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Hana–East Maui							
47	New Path on Railroad Right-of-Way Hana Bay–Wailua Gulch	Path	C	C	8.7	\$3,356,000	III
48	Piilani Highway Kula Hwy–Hana Hwy	Signed Shared Road	S	A	36.9	\$135,000	III
Kihei–Makena							
49	Piilani Highway Connector (So. Maui) End of Piilani Hwy–Piilani Hwy	Signed Shared Road	C	C	3.3	\$1,074,000	IV
50a	Future Connector Kula Hwy–Piilani Hwy	Signed Shared Road	C	C	4.2	\$1,367,000	IV
50b	Makena–Ulupalakua Extension	Signed Shared Road	C	C	1.9	\$618,000	IV
51	South Makena Road Alanui Dr–Ahihi Bay	Signed Shared Road	C	B	1.7	\$84,000	III
52	Wailea Alanui Drive–Makena Alanui Drive Okolani Dr–South Makena Rd	Lane	C	B	4.4	\$196,000	III
53	Kilohana Drive South Kihei Rd–Piilani Hwy	Lane	C	B	0.7	\$31,000	II
54	<i>Unused Number</i>						
55	Keonekai Road South Kihei Rd–Piilani Hwy	Lane	C	B	0.6	\$27,000	II
56a	Kihei Greenway Kaonoulu St–East Waipulani Rd	Path	C	C	0.8	\$309,000	I
56b	Kihei Greenway Extension East Lipoa St–Kilohana Dr	Path	C	C	2.5	\$964,000	I
57	East Welakahao Road South Kihei Rd–Piilani Hwy	Signed Shared Road	C	B	0.6	\$30,000	I
58a	Kihei Coastal Route (Uluniu Road) West Waipulani Rd–West Lipoa St	Signed Shared Road	C	B	1.2	\$60,000	II
58b	Kihei Coastal Route (Halama Road) Waihoulī–Kalama Beach Park (path)	Signed Shared Road/ Path	C	C	1.4	\$173,000	II
59	Ohukai Road Piilani Hwy–Future Kihei-Upcountry Hwy	Signed Shared Road	C	B	0.8	\$40,000	II

Island of Maui

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Kihei-Makena							
60	Lipoa Parkway (thru Maui High Tech Park) Piilani Hwy—end of the road	Lane	C	B	0.6	\$27,000	II
61	Ohukai Road South Kihei Rd—Piilani Hwy	Signed Shared Road	C	B	0.5	\$25,000	I
62	South Kihei Road Ohukai Rd—Mokulele Hwy	Signed Shared Road	C	B	0.8	\$40,000	I
63	Around Kealia Pond Off North Kihei Rd	Path	C	C	2.7	\$1,042,000	II
64	North Kihei Road Mokulele Hwy—Honoapiilani Hwy	Signed Shared Road	C	B	3.5	\$174,000	III
West Maui							
65a	Future Honoapiilani Greenway Maalaea—Papalaua State Wayside	Path	S	B	5.0	\$1,288,000	IV
65b	Future Honoapiilani Hwy Bypass Maalaea—Papalaua State Wayside	Signed Shared Road	S	C	5.8	\$1,888,000	IV
66a	West Maui Greenway Olowalu—end of Mill St pavement (along cane haul road parallel to Honoapiilani Hwy)	Path	C/P	C	6.2	\$2,392,000	II
66b	West Maui Greenway Mill St segment	Signed Shared Road	C	C	0.5	\$163,000	I
66c	West Maui Greenway Vicinity of Pioneer Sugar Mill—Kaanapali (Oil Rd, Lower Puukolii Rd, cane haul road parallel to Honoapiilani Hwy)	Path	C/P	C	8.0	\$3,086,000	I
66d	West Maui Greenway Access to Lahaina Civic Center	Path	C/P	C	0.2	\$77,000	I
67	Future Lahaina Bypass	Signed Shared Road	S	C	8.9	\$2,897,000	IV
68a	Kauaula Road Extension Honoapiilani Hwy—Honoapiilani Hwy Ext.	Signed Shared Road	C	C	0.4	\$130,000	III
68b	Shaw Street Extension Front St—Honoapiilani Hwy Ext.	Signed Shared Road	C	C	0.7	\$228,000	III

Island of Maui

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
West Maui							
69	Future Bypass Connector Future Lahaina Bypass– Honoapiilani Hwy	Signed Shared Road	S/C	C	1.0	\$326,000	IV
70	Dickenson Street Front St–Lahainaluna High Sch	Signed Shared Road	C	C	0.7	\$228,000	II
71	Lahainaluna Road Honoapilliani Hwy– Kahoma Stream Path	Lane	C	B	0.4	\$18,000	II
72	Kahoma Stream Path Nohea Kai Dr–Lahainaluna High School	Path	C	C	1.9	\$733,000	II
73	Future Honoapiilani Greenway Ukumehame Beach Park– Front St	Path	S	B	7.6	\$1,958,000	IV
74	Front Street Honoapiilani Hwy– Honoapiilani Hwy	Signed Shared Road	C	B	2.5	\$124,000	II
75	<i>Unused Number</i>						
76	<i>Unused Number</i>						
77	Lower Honoapiilani Road Lower Aloe Dr–Honoapiilani Hwy	Signed Shared Road	C	B	5.2	\$258,000	III
78	Kahekili Highway Kaanapali Hwy–Wailuku	Signed Shared Road	C	B	27.5	\$1,364,000	III

* Juris. (Jurisdiction)

S = State

C = County

F = Federal

P = Private

** Cost Class. (Cost Classification)

A = Minor improvements

B = Moderate improvements

C = Major improvements/new facility

*** Priority Level

I = Near-term

II = Mid-term

III = Long-term

IV = Contingent on road development

Island of Molokai

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
East Molokai							
1	Kamehameha V Hwy Mile 10 Marker– End (Halawa Valley)	Signed Shared Road	S	B	17.2	\$853,000	II
2	Kamehameha V Hwy Mile 8 Marker–Mile 10 Marker	Signed Shared Road	S	C	2.0	\$651,000	I
Central Molokai							
3	Kamehameha V Hwy Intersection with Kalae Hwy– Mile 8 Marker	Signed Shared Road	S	A	12.1	\$44,000	I
4	Farrington Avenue Puupeelua Ave–Kalae Hwy	Signed Shared Road	S	B	2.4	\$9,000	I
5	Puupeelua Avenue Maunaloa Hwy–Farrington Ave	Signed Shared Road	S	B	1.2	\$4,000	I
West Molokai							
6	Maunaloa Highway Kalae Hwy–Kaluakoi Rd	Signed Shared Road	S	A	10.5	\$38,000	I
7	Maunaloa Hwy extension Kaluakoi Rd–Maunaloa (village)	Signed Shared Road	S	B	1.7	\$84,000	I
8	Kaluakoi Road Maunaloa Hwy– Papohaku Beach Park	Signed Shared Road	C	C	4.9	\$1,595,000	III

* Juris. (Jurisdiction)

S = State

C = County

F = Federal

P = Private

** Cost Class. (Cost Classification)

A = Minor improvements

B = Moderate improvements

C = Major improvements/new facility

*** Priority Level

I = Near-term

II = Mid-term

III = Long-term

IV = Contingent on road development

Island of Lanai

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
1	Keomuku Road Lanai Ave–Maunalei Pt (end of the road)	Signed Shared Road	C	B	7.2	\$357,000	III
2	Kaumalapau Highway Lanai Airport–Lanai Ave	Signed Shared Road	S	B	2.7	\$134,000	I
3	Manele Road Kaumalapau Hwy–Manele Bay	Signed Shared Road	S	B	6.9	\$342,000	II
4	Lanai Avenue Kaumalapau Hwy–Keomuku Rd	Signed Shared Road	C	B	1.42	\$70,000	II

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P = Private

** Cost Class. (Cost Classification)

A = Minor improvements

B = Moderate improvements

C = Major improvements/new facility

*** Priority Level

I = Near-term

II = Mid-term

III = Long-term

IV = Contingent on road development

Island of Hawaii (Big Island) Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Hilo							
1	Hawaii Belt Road Honokaa–Hilo	Signed Shared Road	S	A	39.0	\$142,000	III
2	Kilauea Avenue Waianuenue Ave–W. Puainako St	Lane	C	C	2.5	\$3,141,000	I
3	Kapiolani/Hualalai Street Waianuenue Ave–Hualalai St	Signed Shared Road	C	A	1.0	\$4,000	II
4	Ponahawai Street Komohana–Kapiolani St	Lane	C	C	1.0	\$1,256,000	II
5	Kukuau Street Komohana St–Kapiolani St	Lane	C	B	0.8	\$36,000	II
6	Rainbow Drive Loops off Waianuenue Ave	Signed Shared Road	C	C	1.7	\$553,000	III
7a	Waianuenue Avenue Bayfront Hwy–Hilo Medical Center	Lane	C	C	1.9	\$2,237,000	I
7b	Waianuenue Avenue Hilo Medical Center–Akolea Rd	Signed Shared Road	C	C	1.4	\$456,000	III
8	Akolea Road Kaumana Dr–Waianuenue Ave	Signed Shared Road	C	A	1.9	\$7,000	III
9a	Kaumana Drive Waianuenue Ave–Akolea Rd	Signed Shared Road	C	C	3.7	\$1,204,000	III
9b	Kaumana Drive Saddle Rd–Akolea Rd	Signed Shared Road	C	A	0.4	\$2,000	III
10	Mohouli Street Komohana St–Kilauea Ave	Lane	C	C	1.0	\$1,256,000	I
11	Kumukoa Street/ W. Lanikaula Street/ E. Lanikaula Street Kukuau St–Kanoelehua Ave	Lane	C	B	2.3	\$102,000	II
12a	Komohana Street Waianuenue Ave–Ainaola Dr	Lane	C	C	3.1	\$3,894,000	I
12b	Nowelo Street Komohana– UH Hilo Expansion Area	Lane	C	C			IV
13	Ainaola Road Haihai St–Kawailani St	Lane	C	B	1.0	\$45,000	III
14	Civic Center Loop–Aupuni/Pauahi Kilauea Ave–Kamehameha Ave	Lane	C	B	0.7	\$31,000	I

Island of Hawaii (Big Island) Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Hilo							
15a	Bayfront Highway Waianuenue Ave–Pauahi St/ Bayfront crossover to Manono St	Lane	S	B	1.2	\$53,000	I
15b	Kamehameha Avenue Waianuenue Ave–Wailoa River Bridge	Lane	C	B	1.0	\$44,000	I
16	Banyan Drive/Lihiwai Street Around Golf Course	Path	C	C	1.4	\$540,000	II
17	Hualani/Operations/Silva Streets Kanoelehua–Kalanianaʻole Ave/ Hilo Harbor	Signed Shared Road	C/S	B	1.3	\$65,000	II
18	Kekuanaoa Street (Airport Access Road) Kanoelehua Ave–Hilo Airport	Lane	S	A	1.6	\$19,000	I
19	Piilani Street Manono St–Kanoelehua Ave	Signed Shared Road	C	B	0.4	\$20,000	II
20	Kekuanaoa Street Kilauea Ave–Kanoelehua Ave	Lane	C	C	0.9	\$1,131,000	I
21	Manono Street E. Kawili St–Bayfront Hwy	Lane	C	C	1.2	\$1,508,000	I
22	E. Kawili Street Kilauea Ave–Kanoelehua Ave	Lane	C	B	0.5	\$22,000	I
23	W. Puainako Street Komohana St–Kinoole St	Lane	S	C	1.4	\$1,759,000	I
24	Kawailani Street Komohana St–Kinoole St	Signed Shared Road	C	B	1.3	\$65,000	I
25	Haihai Street Ainaola Rd–Kinoole St	Signed Shared Road	C	A	1.6	\$6,000	II
26	Kinoole Street Waianuenue Ave–Haihai St	Lane	C	B	3.9	\$173,000	II
27	Pohaku or E. Makaala Street Ohuohu/Ahuna/Awa/ Pau O Palae–RR Ave	Signed Shared Road	C	C	3.5	\$1,139,000	II
28	Volcano Highway [Mamalaho Highway] Kanoelehua Ave–Keaau–Pahoa Rd	Signed Shared Road	S	A	3.0	\$11,000	I

Island of Hawaii (Big Island) Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Hilo							
29a	Railroad Avenue Leilani St (Hilo)–Kaaahi Rd/ RR Ave end	Lane	C	B	4.0	\$178,000	I
Puna							
29b	Railroad Avenue Bikeway Kaaahi Rd/RR Ave (end of pavement)–Hawaiian Paradise Park Subdivision	Path	C/P	C	5.6	\$2,160,000	I
29c	Railroad Avenue Bikeway Hawaiian Paradise Park Subdivision–Hawaiian Beaches & Shores Subdivision	Path	C/P	C	6.8	\$2,623,000	II
29d	Railroad Avenue Bikeway Hawaiian Beaches & Shores Subdivision–Kapoho–Kalapana Beach Rd	Path	C/P	C	6.5	\$2,507,000	III
30a	RR Avenue Bikeway connection to Keaau schools complex RR Ave Bikeway– Keaau–Pahoa Bypass	Path	C	C	0.5	\$193,000	I
30b	Various local roads and off-road paths Keaau Town	Path	C/P	C	2.0	\$772,000	II
31a	Old Keaau–Pahoa Road Volcano Hwy–Keaau–Pahoa Bypass	Signed Shared Road	S	C	1.1	\$358,000	II
31b	Old Keaau–Pahoa Road Remnant	Signed Shared Road	C/S?	B	0.5	\$25,000	II
32	Keaau–Pahoa Road Keaau Bypass Rd–Shower Dr	Signed Shared Road	S	C	2.4	\$781,000	I
33	Shower Dr/Pohaku Dr/Olaa/40th Kaaahi Rd–Volcano Hwy	Signed Shared Road	P/C	C	5.4	\$1,758,000	II
34	Paradise Acres - 9 Rd / C Rd / Kulani Road 9 Rd–Volcano Hwy near Mountain View	Signed Shared Road	P/C	C	5.6	\$1,823,000	II
35	Old Volcano Trail Volcano Hwy–S. Glenwood Rd– Kahikopele St–Puhala St–Olaa Rd	Path	S	B	12.5	\$3,220,000	I

Island of Hawaii (Big Island)

Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Puna							
36a	North Puna Corridor—Makai along Paradise or Makuu Drive Hawaiian Paradise Park—Keaau—Pahoa Rd	Signed Shared Road	P/C	C	4.2	\$1,367,000	II
36b	North Puna Corridor—Mauka Keaau—Pahoa Rd—II Rd	Signed Shared Road	P/C	C	3.7	\$1,204,000	II
36c	North Puna Corridor—D Road/Rose Street 9 Rd—D Rd—Plumeria St—Rose St—Pikake St—Puhala St	Signed Shared Road	P/C	C	4.1	\$1,335,000	II
36d	S. Glenwood Road—Fern Forest Volcano Hwy—S. Glenwood Rd—Old Volcano Trail	Signed Shared Road	P/C	C	0.8	\$260,000	II
37a	Ala Hele O Puna (going north) Hawaiian Beaches/Shores Subdivision—Hawaiian Paradise Park Estates	Signed Shared Road	C	C	6.1	\$1,985,000	II
37b	Ala Hele O Puna (going south) Hawaiian Beaches/Shores Subdivision—Jct. Pahoa-Kapoho Rd	Signed Shared Road	C	C	5.2	\$1,693,000	II
37c	Koae Access Railroad Path/Kaaahi Rd—Ala Hele O Puna	Path	C	C	0.8	\$309,000	III
38	Kahakai Boulevard (mauka—makai corridor) Railroad Ave—Pahoa schools complex	Signed Shared Road	C	C	4.0	\$1,302,000	II
39	Ag Road/Kehau Road Railroad Ave (Waiakahiula)—Nanawale Blvd to Pahoa—Kapoho Rd	Signed Shared Road	C	C	3.8	\$1,237,000	II
40	Pahoa-Kapoho Road Volcano Hwy—Pahoa Coast	Signed Shared Road	C	A	7.2	\$26,000	II
41	Lighthouse Road Pahoa—Kapoho Rd—Kumukahi Lighthouse	Signed Shared Road	C	C	1.6	\$521,000	II
42	Pahoa—Kapoho Powerline Trail Pahoa—Kapoho Rd—Pahoa—Kalapana Rd	Path	C/P	C	2.8	\$1,080,000	III

Island of Hawaii (Big Island) Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Puna							
43	Kapoho–Kalapana Ridge Trail Off Pahoa–Kapoho Rd– Kamoamoa Hmstds	Path	C/P	C	8.1	\$3,125,000	III
44	Kalapana–Kapoho Beach Road Pahoa–Kapoho Rd– Keaau–Pahoa Rd	Signed Shared Road	C	A	15.0	\$55,000	II
45	Old Kalapana Highway Remnants	Path	C	C	4.5	\$1,736,000	II
46	Pahoa–Kalapana Highway Kapoho–Kalapana Beach Rd– Keaau–Pahoa Rd	Signed Shared Road	C	A	9.0	\$33,000	II
47a	Volcano Highway [Mamalahoa Highway] Keaau–Pahoa Bypass–Hawaii Volcanoes National Park	Signed Shared Road	S	A	23.2	\$85,000	II
47b	Volcano Village Collector Roads, Shoulder Improvements Wright Rd (Hwy 11–Laukapu Rd) Haunani Rd (Hwy 11–Laukapu Rd)	Signed Shared Road	C	B	1.6	\$79,000	II
South Hawaii							
48	Mamalahoa Highway Hawaii Volcanoes N.P.– Capt Cook Village Rd (Kona)	Signed Shared Road	S	A	82.3	\$301,000	III
49	South Point Road Hawaii Belt Rd–Ka Lae (South Point)	Signed Shared Road	C	C	11.7	\$3,808,000	III
50	Kamaoa Road South Point Rd–Mamalahoa Hwy	Signed Shared Road	C	C	4.0	\$1,302,000	III
Kona							
51	Ke Ala O Keawe Mamalahoa Hwy–Puuhonua Rd	Signed Shared Road	S	C	4.0	\$1,286,000	III
52	Puuhonua Road Middle Keeki Rd–Honaunau Bay	Signed Shared Road	C	C	3.4	\$1,100,000	III
53	Painted Church Road Keala O Keawe–Middle Keeki Rd	Signed Shared Road	C	C	1.8	\$589,000	III

Island of Hawaii (Big Island) Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Kona							
54	Middle Keel Road Mamalahoa Hwy–Puuhonua Rd	Signed Shared Road	C	C	3.6	\$1,182,000	III
55	Napoopoo Road Mamalahoa Hwy–Middle Keel Rd	Signed Shared Road	C	C	2.6	\$840,000	III
56	Alii Drive extension Lekeleke Bay–Kealakekua Bay	Path	C	C	5.3	\$2,044,000	III
57a	Old RR ROW–makai of Kuakini Highway Kuakini Hwy–terminus	Path	C	C	6.0	\$2,311,000	III
57b	Old RR ROW–mauka of Kuakini Highway Hualalai Rd–Kuakini Hwy	Path	C	C	2.7	\$1,042,000	III
58a	Kuakini Highway Mamalahoa Hwy– King Kamehameha III Rd	Signed Shared Road	S	B	3.5	\$174,000	I
58b	Kuakini Highway King Kamehameha III Rd–Lako St	Signed Shared Road	S	C	1.7	\$553,000	I
58c	Kuakini Highway Lako St–Hualalai Rd	Lane	C	C	2.3	\$2,889,000	I
59	Haawina Road Kuakini Hwy– Old Mamalahoa Hwy	Signed Shared Road	C	C	0.2	\$65,000	II
60a	Walua Road Path Extension—North Lako St–Alii Dr	Path	C	C	3.0	\$1,157,000	I
60b	Walua Road Path Extension—South End of Walua Rd– Old Mamalahoa Hwy	Path	C	C	0.3	\$116,000	I
61	King Kamehameha III Road Kuakini Hwy–Alii Dr	Signed Shared Road	C	C	1.4	\$469,000	II
62	Connections between subdivisions south of Kailua, e.g., Kololia to Kenika Place to Sea View Komohana Kai Subdivision– Kona Sea View Subdivision	Signed Shared Road	C/P	C	1.2	\$378,000	II

Island of Hawaii (Big Island) Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Kona							
63	Mamalahoa Highway Capt Cook Village Rd– Old Mamalahoa Hwy	Signed Shared Road	C	B	4.4	\$218,000	III
64	Proposed Ke Ala o Keauhou (Kahului–Keauhou Parkway) Queen Kaahumanu Hwy–Lako St	Lane/Path	C	C	3.1	\$2,205,000	IV
65	Alii Drive Improvements Palani Rd–Keauhou Rd	Signed Shared Road	C	B	5.7	\$283,000	I
66	Lunapule Road Alii Dr–Walua Rd	Signed Shared Road	C	C	0.3	\$81,000	II
67	Hualalai Road Old Mamalahoa Hwy– Kuakini Hwy	Signed Shared Road	C	C	3.8	\$1,230,000	II
68	Queen Kaahumanu (Extension) Henry St–Kuakini Hwy	Signed Shared Road	S	A	2.5	\$9,000	I
69	Old Mamalahoa Highway Jct. Palani Rd–Honalo	Signed Shared Road/Pull-outs	C	A	10.5	\$38,000	II
70a	Keanalehu Trail Palani Rd–Hualalai Rd	Path	C	C	2.6	\$1,018,000	III
70b	Keanalehu Drive Kealakehe Pathway–Palani Rd	Lane	C	C	0.6	\$779,000	IV
70c	Keanalehu Drive Kealakehe Pkwy– Kealakehe Pathway	Lane	C	B	0.8	\$34,000	I
71	Future Keohokalole Highway Kealakehe Pkwy– Queen Kaahumanu Hwy	Lane	C	C	2.2	\$2,764,000	IV
72	Makala Street Kuakini Hwy (Old Kona Airport)– Queen Kaahumanu Hwy	Signed Shared Road	C	C	0.5	\$173,000	II
73	Old Airport Coastal Path Old Kona Airport–Noio Pt/ Honokohau Harbor	Path	C/P	C	2.3	\$887,000	II
74	Utility Easement Road Wastewater Treatment Plant– Honokohau Harbor	Path	C	C	2.2	\$853,000	II
75	Kealakea Connector Kealakehe Pathway–Kealakea St	Lane	C	C	0.6	\$766,000	IV

Island of Hawaii (Big Island) Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Kona							
76a	Kealakehe Parkway (makai extension) Queen Kaahumanu Hwy– Honokohau Harbor	Signed Shared Road	C	C	1.1	\$358,000	III
76b	Kealakehe Parkway Queen Kaahumanu Hwy– Keanalehu Dr	Lane	S	B	0.7	\$31,000	I
76c	Kealakehe Parkway extension Keanalehu Dr–Kealakaa St	Lane	C	C	1.3	\$1,633,000	IV
76d	Kealakehe Parkway extension Kealakaa–Palani Rd	Lane	S	C	0.7	\$879,000	IV
77	Old Government Road Mauka of Mamalahoa Hwy	Path	C	C	4.3	\$1,643,000	III
78	Future Kealakaa Street Kealakehe Pkwy–Kealakehe Pkwy	Lane	C	C	4.0	\$5,025,000	IV
79	Hina Lani Drive Queen K. Hwy– Old Mamalahoa Hwy	Signed Shared Road	C	A	3.5	\$13,000	III
80	Old Airport Coastal Path Honokohau Harbor– U.H. Research Lab (OTEC)	Path	C	C	6.3	\$2,430,000	III
81a	Separate path adjacent and parallel to Queen Kaahumanu Highway Makala St–Keahole Airport	Path	S	C	6.2	\$2,392,000	I
81b	Separate path adjacent and parallel to Queen Kaahumanu Highway Keahole Airport–Akoni Pule Hwy	Path	S	C	26.0	\$10,029,000	II
82	Utility corridor at 1500' elevation Mauka of Queen Kaahumanu Hwy	Path	C	C	2.5	\$964,000	III
83	Queen Kaahumanu Highway Waikoloa Rd–Keahole Airport	Signed Shared Road	S	A	18.2	\$67,000	I
84	<i>Unused Number</i>						
85a	Palani Road Queen Kaahumanu Hwy– Hina Lani Dr	Signed Shared Road	C	C	3.4	\$1,107,000	II

Island of Hawaii (Big Island) Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Waimea-Kohala							
85b	Mamalahoa Highway Hina Lani Dr–Waimea-Kohala Airport	Signed Shared Road	S	A	33.3	\$122,000	II
86	Old Mamalahoa Highway Remnants South of Waimea	Path	S?	C	2.4	\$1,852,000	II
87	Saddle Road Mamalahoa Hwy–Hilo	Signed Shared Road	S	A	45.7	\$167,000	III
88	Waikoloa Road Waikoloa Village–Queen Kaahumanu Hwy	Signed Shared Road	C	B	11.6	\$576,000	II
89	Waikoloa Bikeway Paniolo Ave	Lane	C	B	1.7	\$74,000	I
90	Powerline Easement Road Old Kawaihae Rd–Waikoloa Rd	Path	C/P	C	7.4	\$2,866,000	III
91	Old Puako Road and Puako Beach Drive Hapuna Beach Rd–Holoholokai Beach Pk	Path	C/P	C	9.0	\$3,456,000	III
92a	Akoni Pule Highway Kawaihae Rd–Mahukona Wharf Access Rd	Signed Shared Road	S	A	12.9	\$47,000	I
92b	Akoni Pule Highway Mahukona Wharf Access Rd–Hawi Rd	Signed Shared Road	S	A	6.5	\$24,000	I
93	Akoni Pule Highway Hawi–Halaula	Signed Shared Road	S	B	7.9	\$392,000	II
94	Kohala Mountain Road Kawaihae Rd–Hawi	Signed Shared Road	S	B	19.3	\$958,000	II
95a	Old Kawaihae Road (North of Kawaihae Rd) Akoni Pule Hwy–Powerline Rd	Path	C	C	3.1	\$1,184,000	II
95b	Old Kawaihae Road (South of Kawaihae Rd) Powerline Rd–Waimea Greenway	Path	C	C	5.1	\$1,948,000	II
96a–c	Waimea Trails and Greenways Various segments	Path	C/P	C	9.0	\$3,472,000	I

Island of Hawaii (Big Island) Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Waimea–Kohala							
97	Future Waimea Bypass Akoni Pule Hwy–Mamalahoa Hwy	Signed Shared Road	S	C	18.3	\$5,956,000	IV
98a	Kawaihae Road Akoni Pule Hwy–Mile 58	Signed Shared Road	S	A	9.0	\$33,000	II
98b	Kawaihae Road/Mamalahoa Highway Laelae Rd (Mile 58)–Kekehau/ Kipu Upuu	Signed Shared Road	C	B	5.6	\$278,000	II
99	Waiaka Bridge Jct. Kohala Mountain Rd & Kawaihae Rd	Signed Shared Road	S	C			II
100	Mamalahoa Highway Mile 1–Waimea-Kohala Airport	Signed Shared Road	S	C	1.7	\$557,000	II
101	Future Waimea Highway Bypass—Path	Path	S	C	3.9	\$1,504,000	IV
102	Mud Lane Past Kamuela Lakeland; Mamalahoa Hwy–Waipio Valley	Path	C	C	5.8	\$2,218,000	II
Honokaa–Hamakua							
103	Honokaa–Waipio Road Honokaa–Waipio	Shared Road	S	A	9.5	\$35,000	II
104a	Lower Cane Haul Road Waipio–Honokaa	Path	C/P	C	8.0	\$3,074,000	III
104b	Lower Cane Haul Road Honokaa–Homula	Path	C/P	C	7.9	\$3,055,000	III
105	Coastal Connector Road (Standard Oil Road) Haina–Honokaa–Waipio	Signed Shared Road	C/P	C	1.9	\$618,000	III
106a	Old Mamalahoa Highway Lakeland–Mamalahoa Hwy	Signed Shared Road	S?	C	10.2	\$3,307,000	II
106b	Kapuna Road Old Mamalahoa Hwy– Mamalahoa Hwy	Path	C	C	1.4	\$548,000	II
106c	Old Mamalahoa Highway Paauhau Rd–Kalopa Gulch	Path	S?	C	2.9	\$1,115,000	III

Island of Hawaii (Big Island) Proposed Bicycle Facilities

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Honokaa–Hamakua							
I06d	Old Mamalahoa Highway Puuala Ranch–Waipuahina Gulch	Path	S?	C	2.4	\$926,000	III
I06e	Old Mamalahoa Highway Waipuahina Gulch–Paauilo	Path	S?	C	0.8	\$309,000	III
I06f	Old Mamalahoa Highway Waikaumalo–Hakalau Bay	Path	S?	C	4.2	\$1,620,000	III
I06g	Old Mamalahoa Highway Hakalau Bay–Kolekole Beach Park	Path	S?	C	2.3	\$887,000	III
I06h	Old Mamalahoa Highway Honomu–Pepeekeo	Path	S?	C	3.0	\$1,157,000	III
I06i	Old Mamalahoa Highway Pepeekeo–Onomea	Path	S?	C	6.8	\$2,623,000	III
I06j	Old Mamalahoa Highway Papaikou–Paukaa, Kulana Kea Dr	Path	S?	C	2.6	\$1,003,000	III
I06k	Wainaku Wainaku–Puueo (Hilo Town)	Path	C	C	2.2	\$849,000	III

* Juris. (Jurisdiction)

S = State

C = County

F = Federal

P = Private

** Cost Class. (Cost Classification)

A = Minor improvements

B = Moderate improvements

C = Major improvements/new facility

*** Priority Level

I = Near-term

II = Mid-term

III = Long-term

IV = Contingent on road development

Bicycle Facility Maps — Hawaii Department of Transportation — Mozilla Firefox

hawaii.gov/dot/highways/Bike/BikePlan/bicycle-facility-maps

DEPARTMENT OF TRANSPORTATION
Keeping Hawaii's on the move

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you are here: home → highways → bike plan → bike plan → bicycle facility maps

Bike Plan Hawaii

Islands Oahu Kauai Maui Molokai Lanai Hawaii

List of Island Maps

Kauai

- Kauai Q1
- Kauai Q2
- Kauai Q3
- Kauai Q4
- Kawaihau
- Lihue

Oahu

- Oahu Q1
- Oahu Q2
- Oahu Q3
- Oahu Q4
- Wahiewa
- Mililani-Waipahu
- Kapolei-Ewa

Bikeway Type

- Path
- Bike Lane
- Signed Shared Roadway

Existing

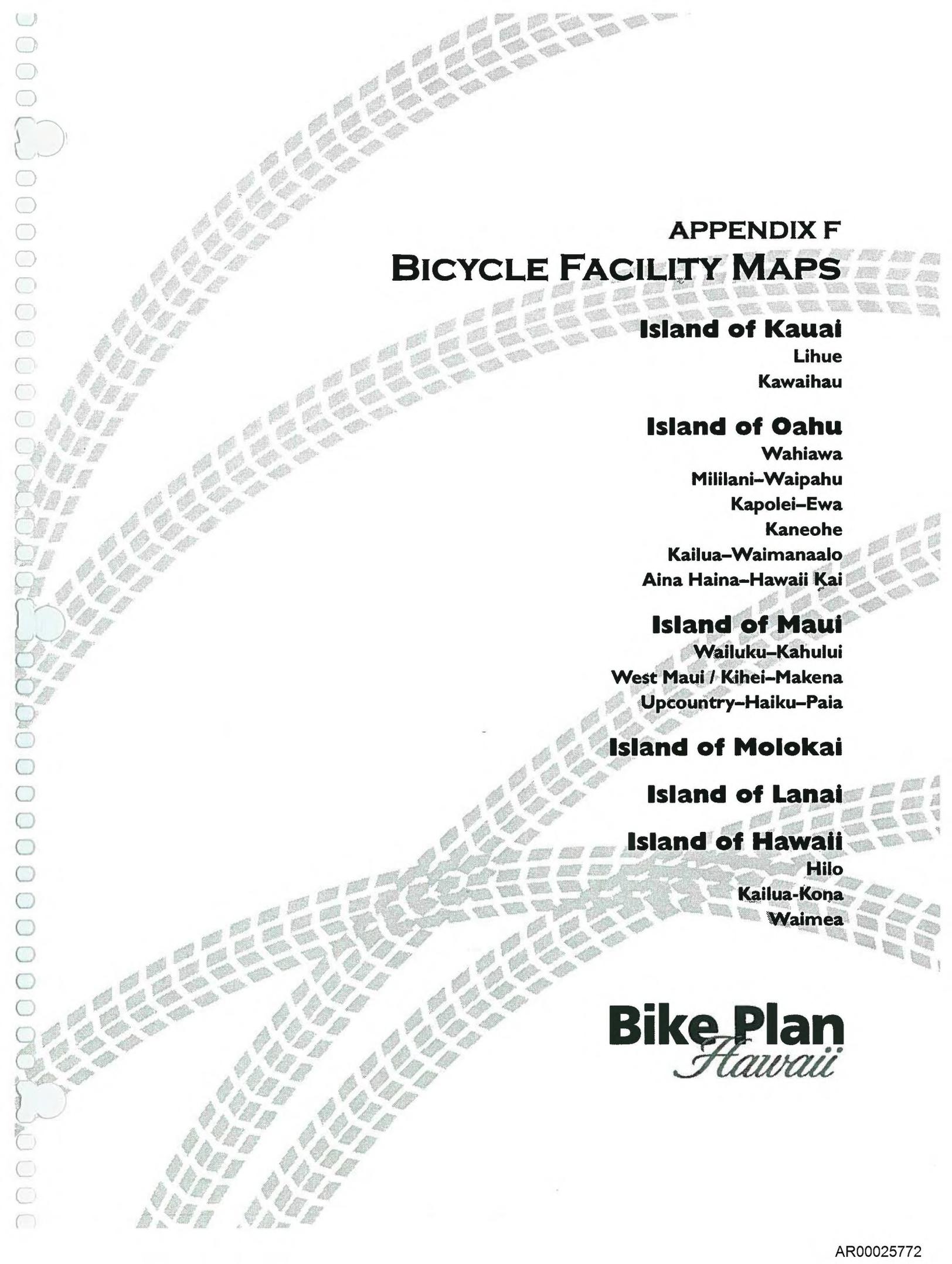
Underway

Proposed

Kauai Proposal Number **6**

Place your cursor over the routes to display additional information.

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APPENDIX F
BICYCLE FACILITY MAPS

Island of Kauai

Lihue
Kawaihau

Island of Oahu

Wahiawa
Mililani-Waipahu
Kapolei-Ewa
Kaneohe
Kailua-Waimanaalo
Aina Haina-Hawaii Kai

Island of Maui

Wailuku-Kahului
West Maui / Kihei-Makena
Upcountry-Haiku-Paia

Island of Molokai

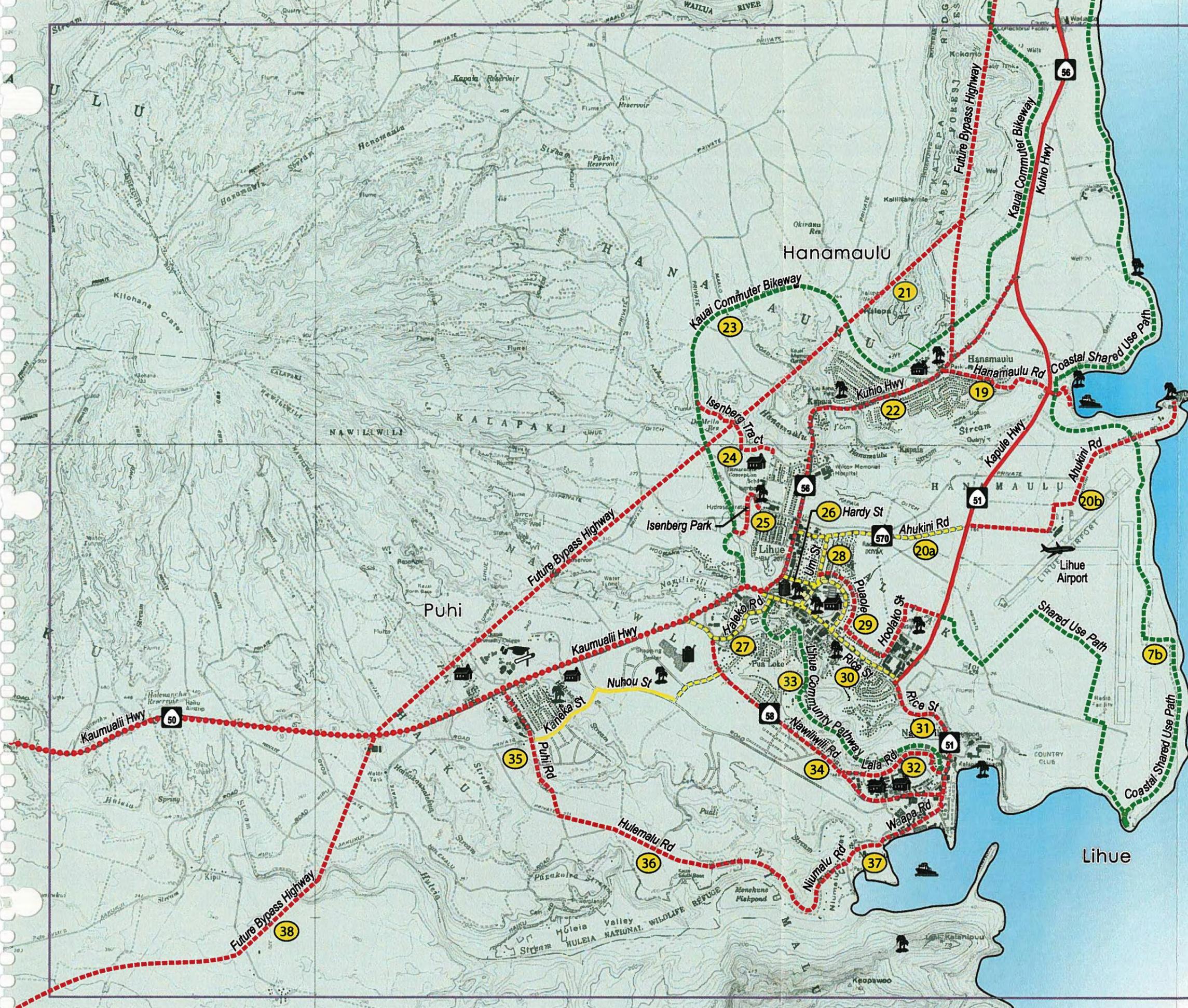
Island of Lanai

Island of Hawaii

Hilo
Kailua-Kona
Waimea

Bike Plan
Hawaii

Lihue



Bike Plan Hawaii

Bikeway Type

Existing Path	Bike Lane	Signed Shared Roadway
Underway Path	Bike Lane	Signed Shared Roadway
Proposed Path	Bike Lane	Signed Shared Roadway

Route Proposal Number **6**

0 1/2 mile 1

**STATE OF HAWAII
DEPT. OF TRANSPORTATION**

Sept 2003

KIMURA INTERNATIONAL

- School
- College
- Park
- Shopping Center
- Library
- Harbor
- Airport

Kawaihau



Bike Plan Hawaii

Bikeway Type

Existing	Path	Bike Lane	Signed Shared Roadway

Route Proposal Number **6**

0 1/2 mile 1

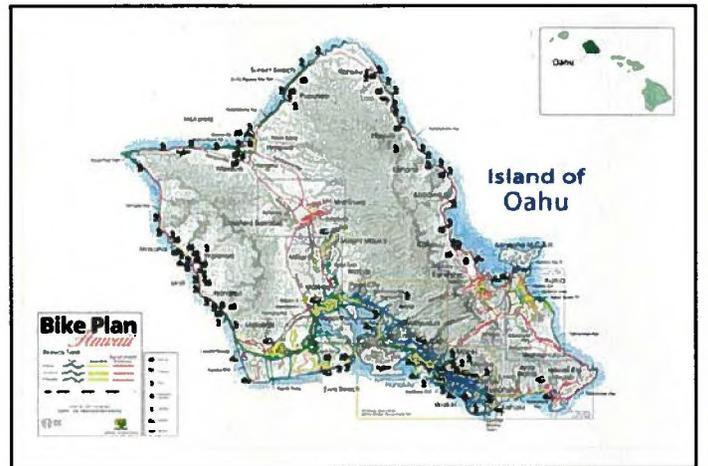
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DEPT. OF TRANSPORTATION

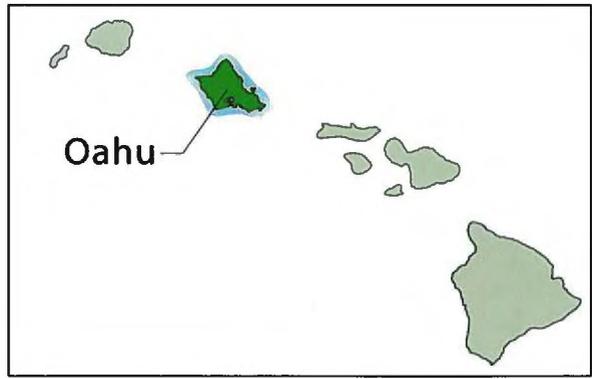
Sept 2008

KIMURA INTERNATIONAL

- School
- College
- Park
- Shopping Center
- Library
- Harbor
- Airport

Full Island Map
Oahu





ISLAND OF Oahu



Bike Plan *Hawaii*

Bikeway Type

	Path	Bike Lane	Signed Shared Roadway
Existing			
Underway			
Proposed			

- Schools
- Colleges
- Parks
- Shopping Centers
- Libraries
- Harbors
- Airports

STATE OF HAWAII
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For Primary Urban Center, see the Honolulu Bicycle Master Plan.

See Alina Haina-Hawaii Kai Close-up Map

Bike Plan Hawaii

Bikeway Type

Existing	Path	Bike Lane	Signed Shared Roadway
Underway			
Proposed			

Route Proposal Number **6**

0 1/2 MILE

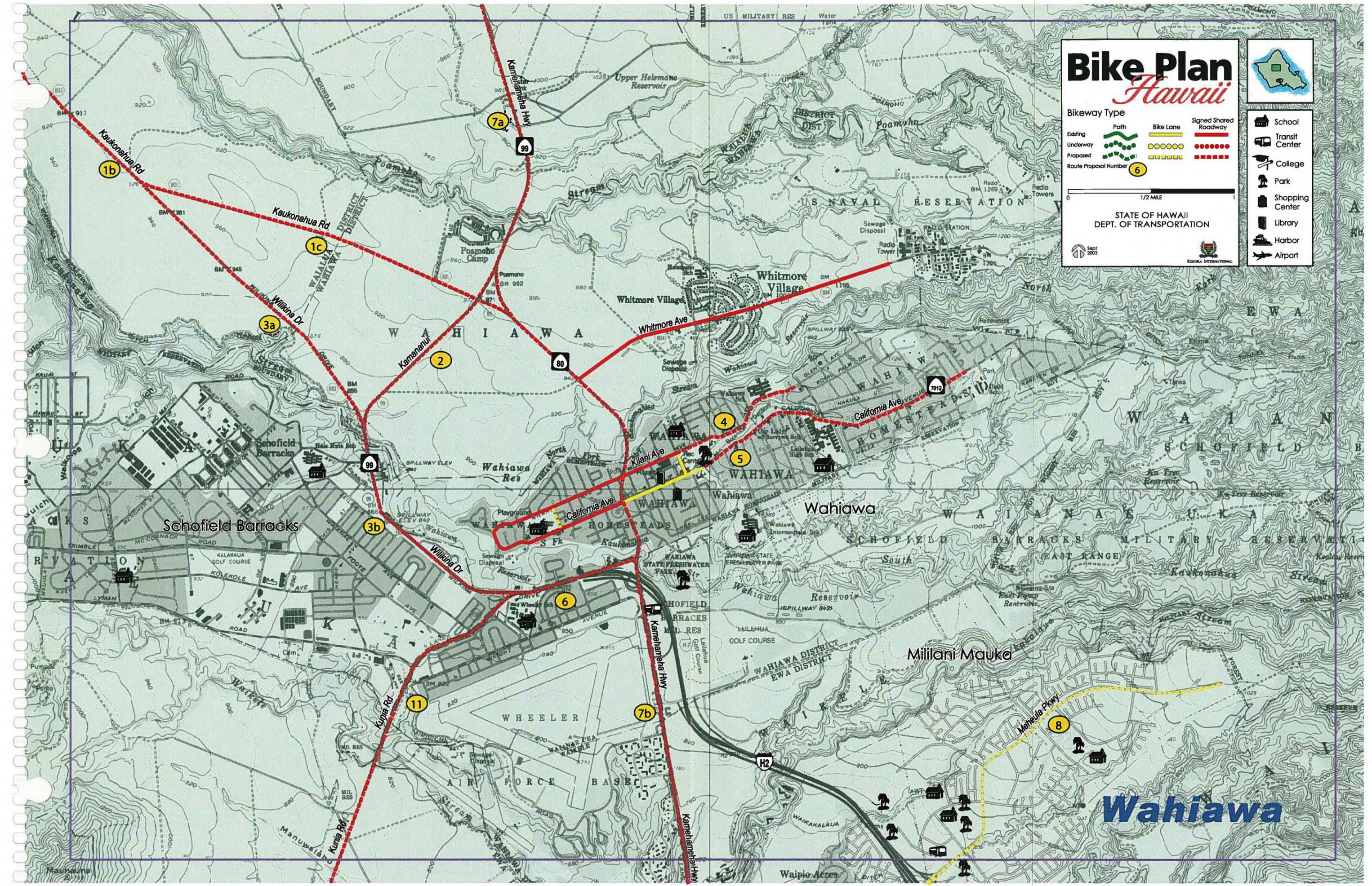
STATE OF HAWAII
DEPT. OF TRANSPORTATION

Sept 2003

KIMURA INTERNATIONAL



- School
- Transit Center
- College
- Park
- Shopping Center
- Library
- Harbor
- Airport



Mililani-Waipahu

Bike Plan Hawaii

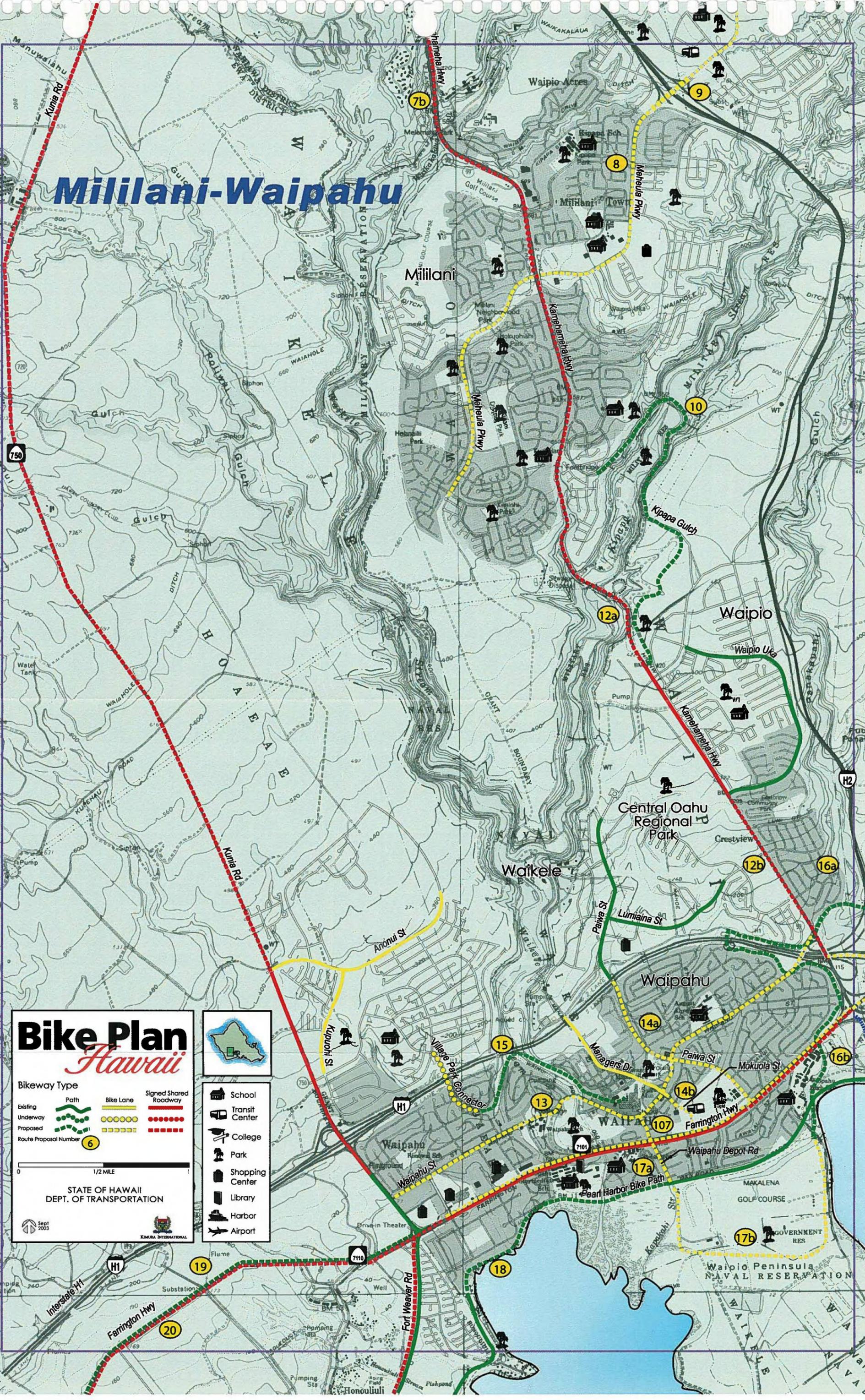
Bikeway Type		
Existing		
Underway		
Proposed		
Route Proposal Number		



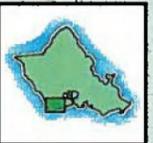
- School
- Transit Center
- College
- Park
- Shopping Center
- Library
- Harbor
- Airport

0 1/2 MILE

STATE OF HAWAII
DEPT. OF TRANSPORTATION



Bike Plan *Hawaii*



Bikeway Type

Existing	Underway	Proposed	Path	Bike Lane	Signed Shared Roadway

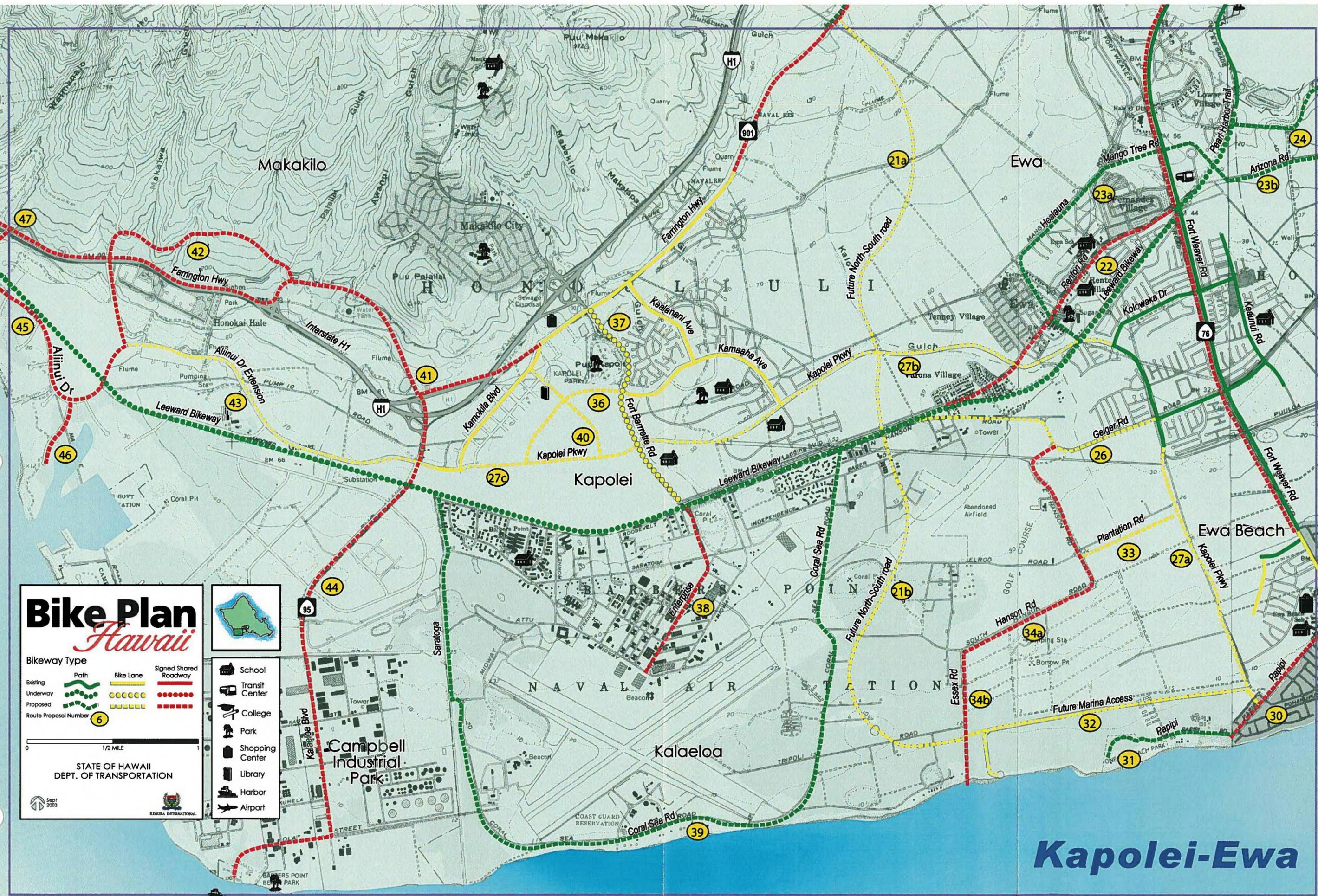
Route Proposal Number **6**

- School
- Transit Center
- College
- Park
- Shopping Center
- Library
- Harbor
- Airport

0 1/2 MILE

STATE OF HAWAII
DEPT. OF TRANSPORTATION

Sept 2003



Kapolei-Ewa

Bike Plan Hawaii

Bikeway Type		
Path	Bike Lane	Signed Shared Roadway
Existing		
Underway		
Proposed		
Route Proposal Number		

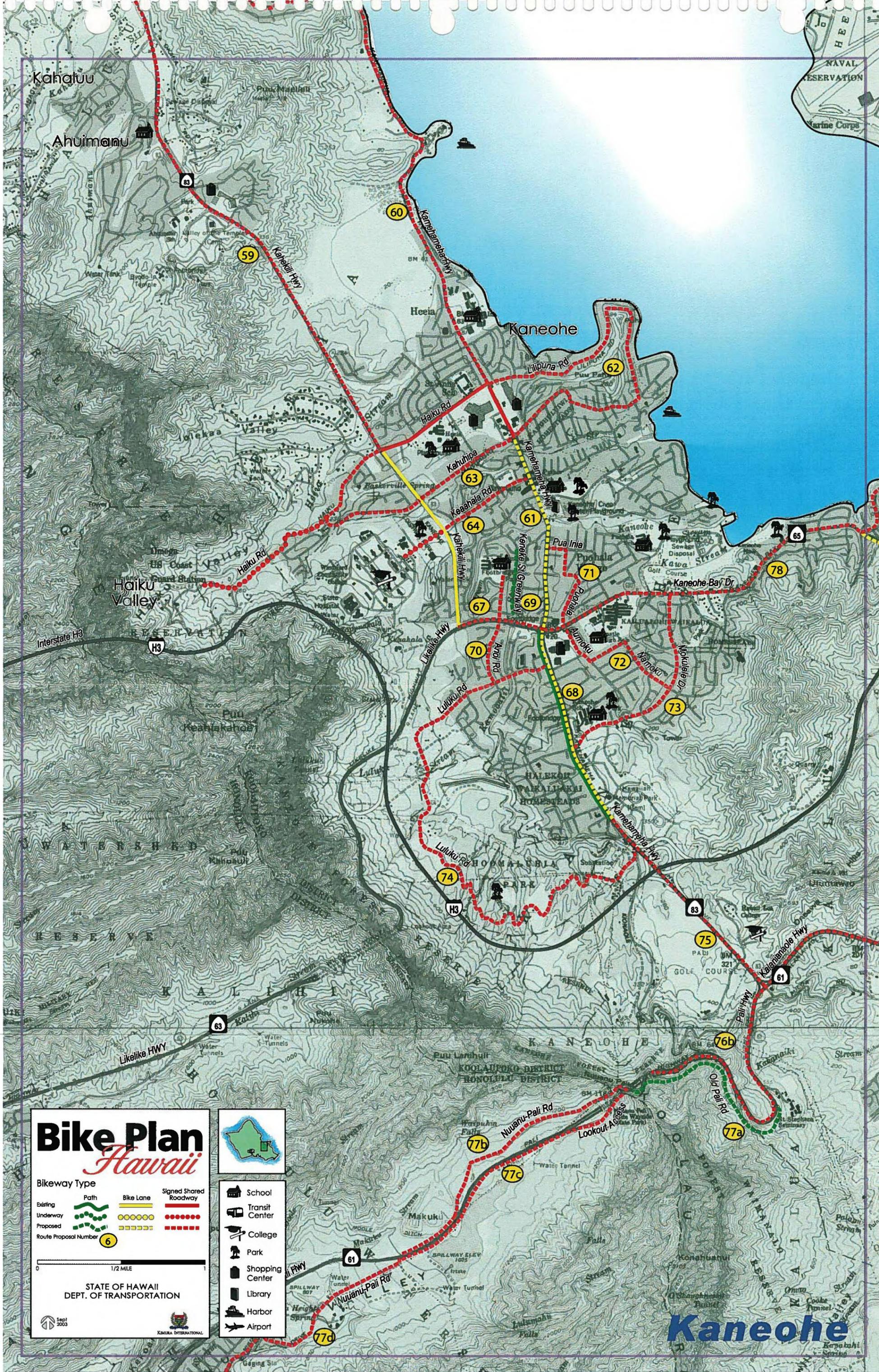
1/2 MILE

STATE OF HAWAII
DEPT. OF TRANSPORTATION

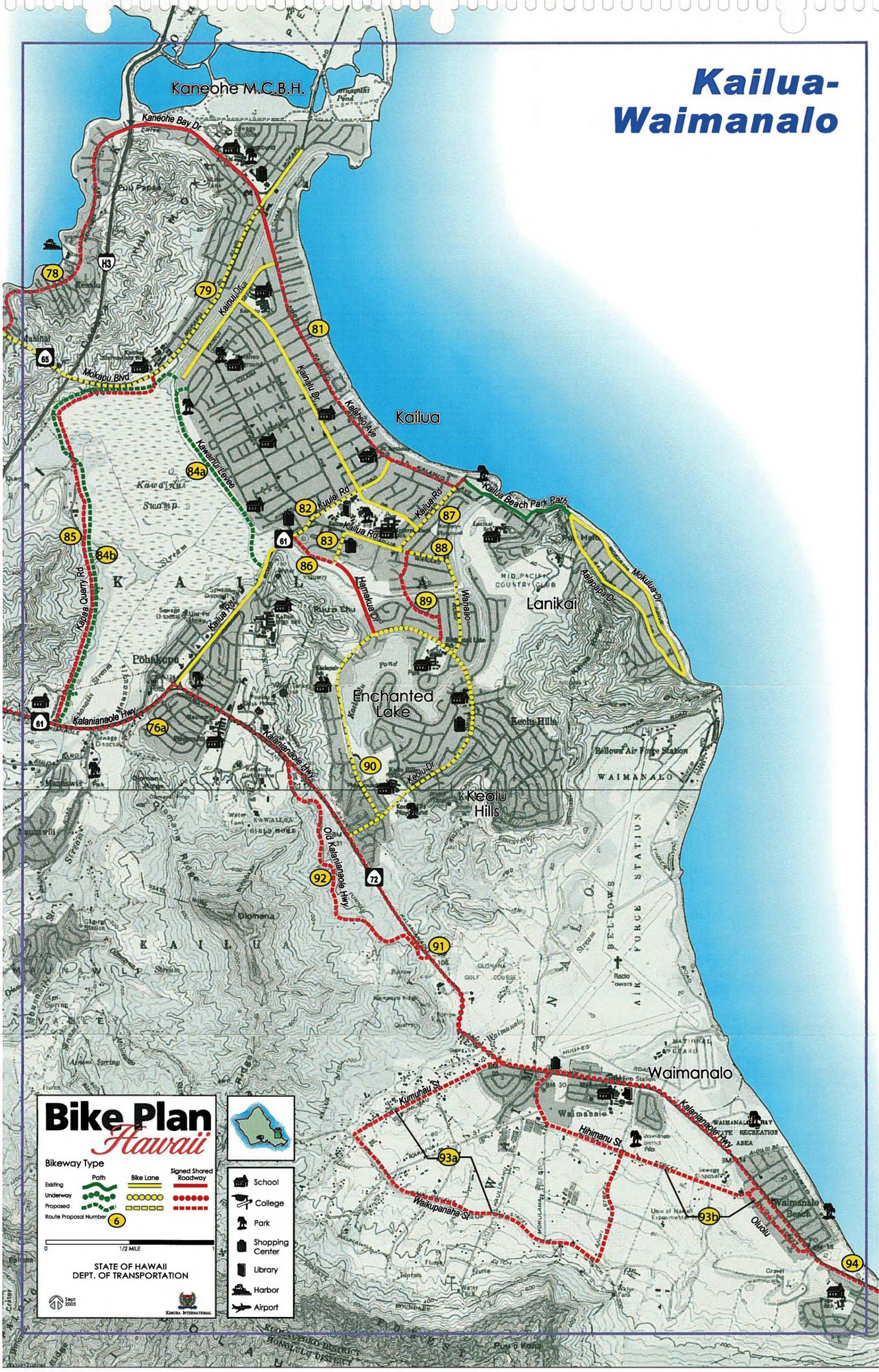


- School
- Transit Center
- College
- Park
- Shopping Center
- Library
- Harbor
- Airport

Kaneohe



Kailua-Waimanalo



Bike Plan Hawaii

Bikeway Type		
Existing	Path	Bike Lane
Underway	Proposed	Signed Shared Roadway
Route Proposal Number	6	

0 1/2 MILE

STATE OF HAWAII
DEPT. OF TRANSPORTATION

Sept 2003

KIMURA INTERNATIONAL



- School
- College
- Park
- Shopping Center
- Library
- Harbor
- Airport

Aina Haina- Hawaii Kai



Bike Plan *Hawaii*

Bikeway Type

Existing	Path	Bike Lane	Signed Shared Roadway
Underway	Proposed	Route Proposal Number 6	

Scale: 0 to 1/2 MILE

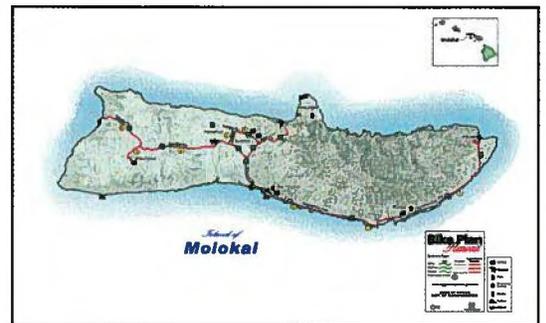
STATE OF HAWAII
DEPT. OF TRANSPORTATION

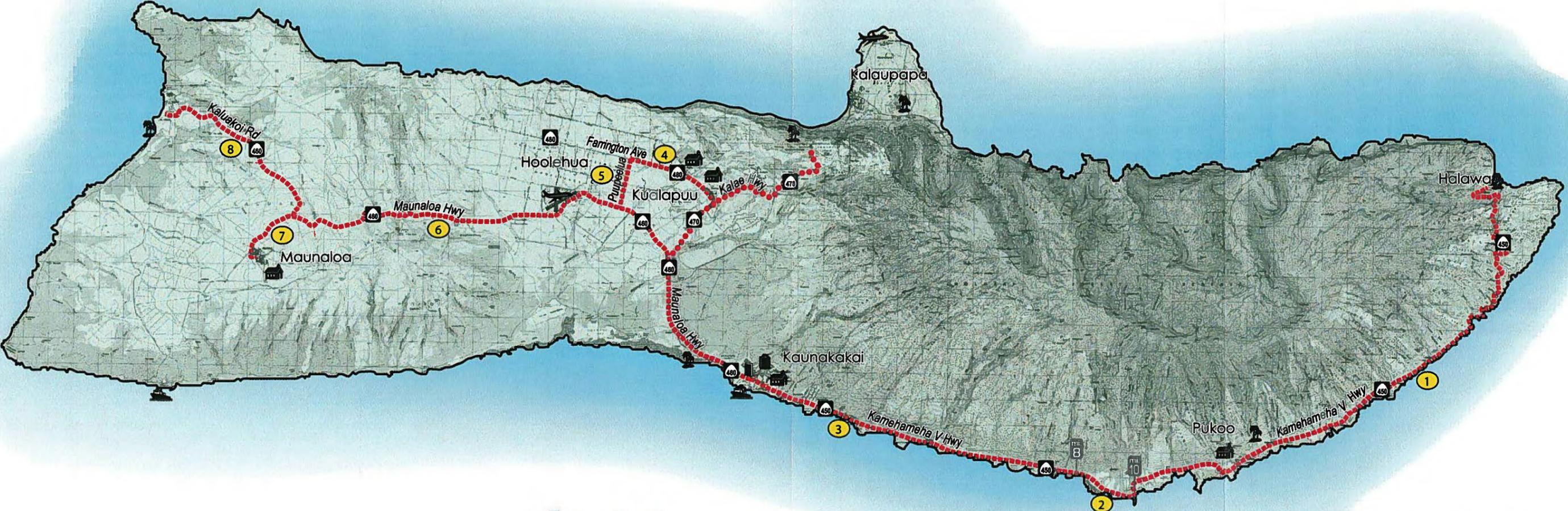
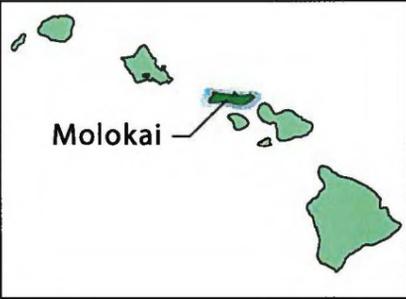
Sept 2023

KIMURA INTERNATIONAL

- School
- Transit Center
- College
- Park
- Shopping Center
- Library
- Harbor
- Airport

Full Island Maps
Molokai & Lanai





Island of
Molokai

Bike Plan
Hawaii

Bikeway Type

Existing	Path	Bike Lane	Signed Shared Roadway
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

Route Proposal Number **6**

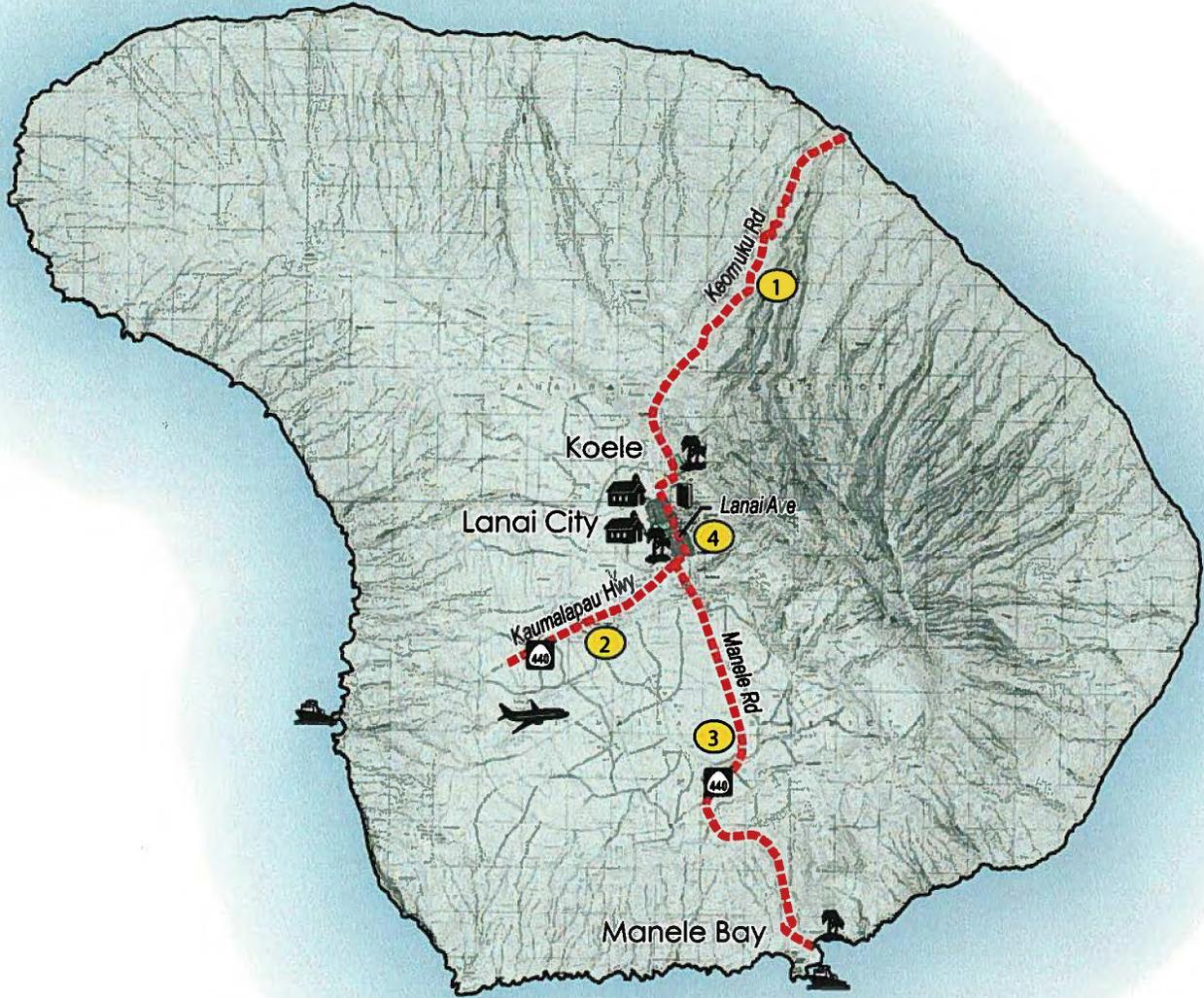
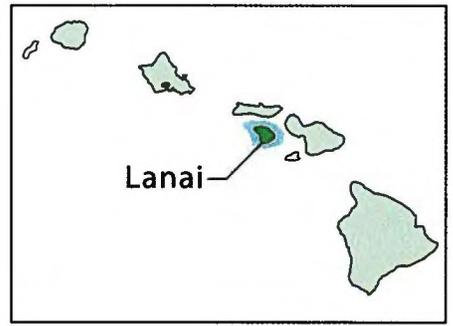


STATE OF HAWAII
DEPT. OF TRANSPORTATION

Sept 2003



- School
- College
- Park
- Shopping Center
- Library
- Harbor
- Airport



Island of
Lanai

Bike Plan *Hawaii*

Bikeway Type

	Path	Bike Lane	Signed Shared Roadway
Existing			
Underway			
Proposed			

Route Proposal Number **6**

0 1 MILE 2 3 4

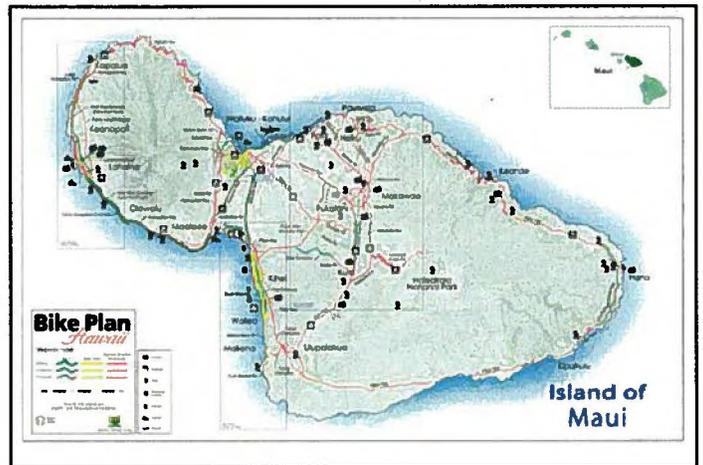
STATE OF HAWAII
DEPT. OF TRANSPORTATION

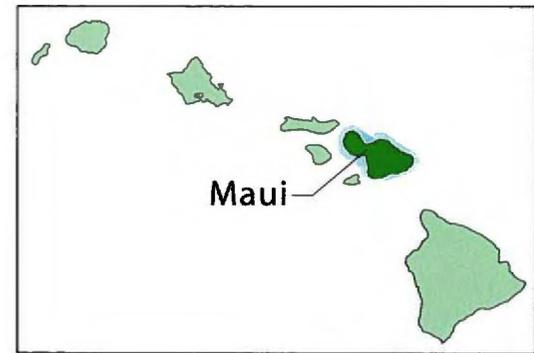
Sept 2003

KIMURA INTERNATIONAL

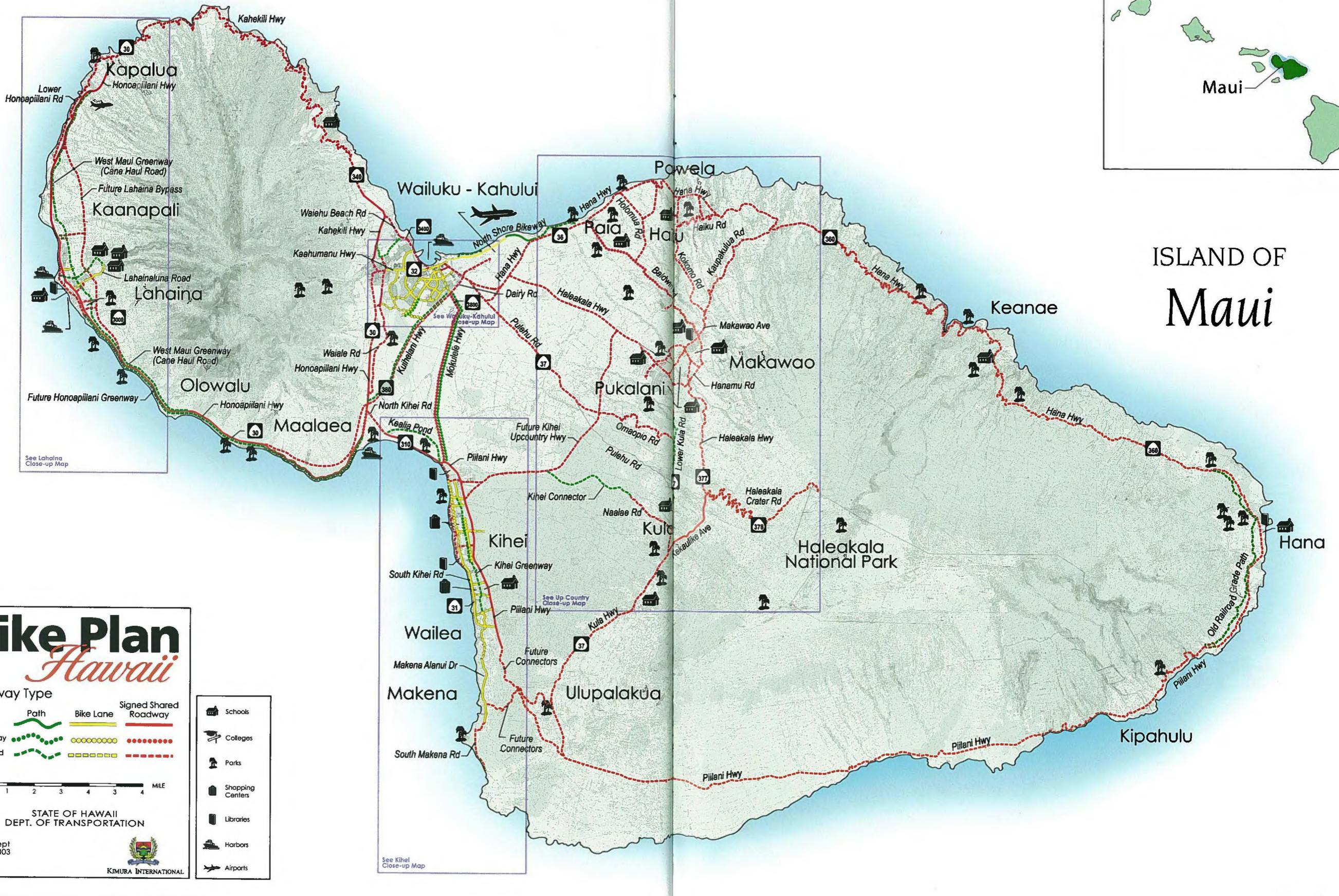
- School
- College
- Park
- Shopping Center
- Library
- Harbor
- Airport

Full Island Map
Maui





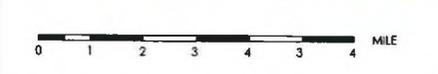
ISLAND OF Maui



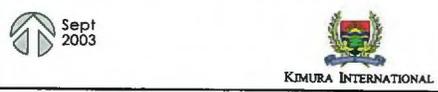
Bike Plan *Hawaii*

Bikeway Type

Existing	Underway	Proposed	Path	Bike Lane	Signed Shared Roadway

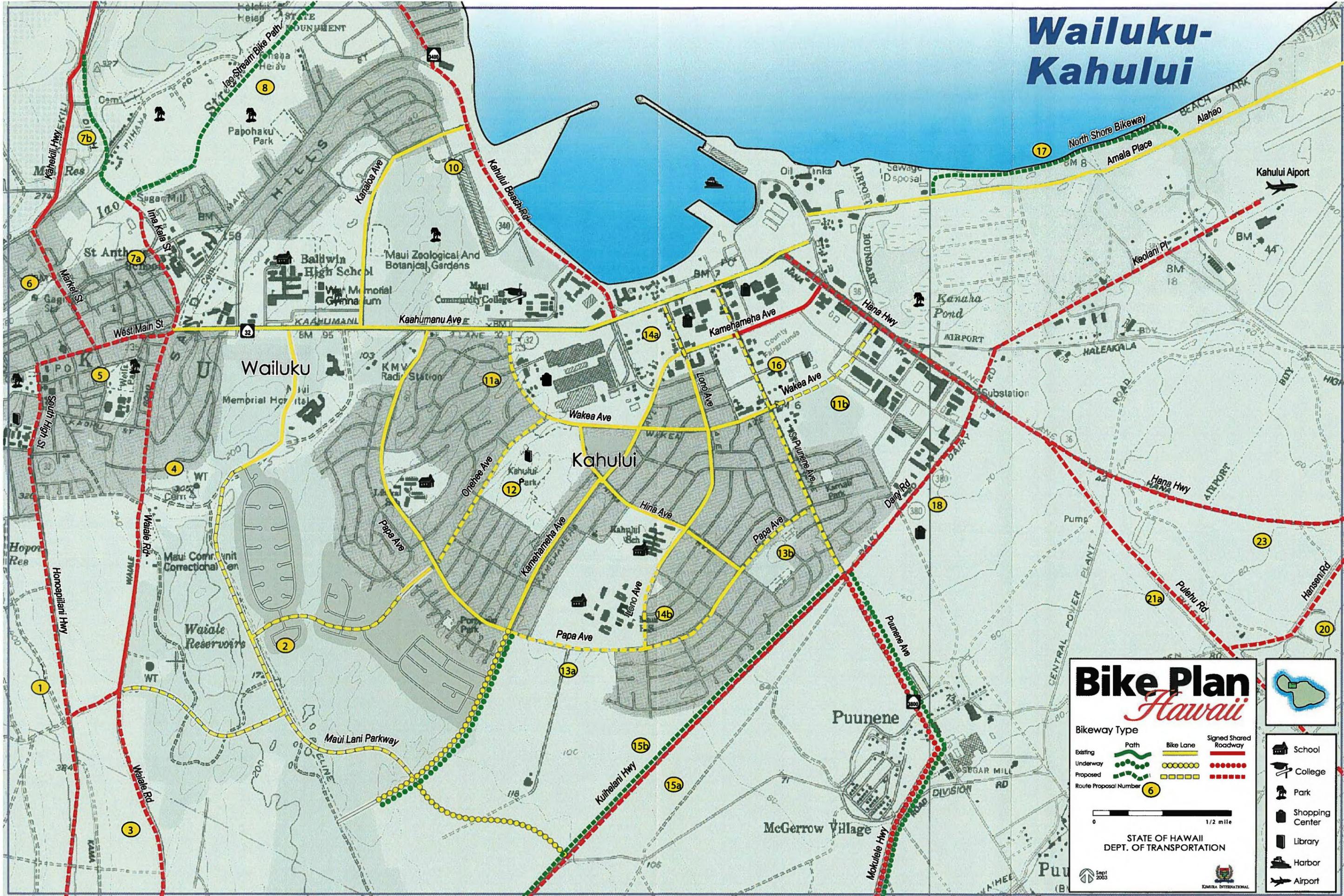


STATE OF HAWAII
DEPT. OF TRANSPORTATION



- Schools
- Colleges
- Parks
- Shopping Centers
- Libraries
- Harbors
- Airports

Wailuku-Kahului



Bike Plan Hawaii

Bikeway Type

Existing	Path	Bike Lane	Signed Shared Roadway

Route Proposal Number **6**

0 1/2 mile

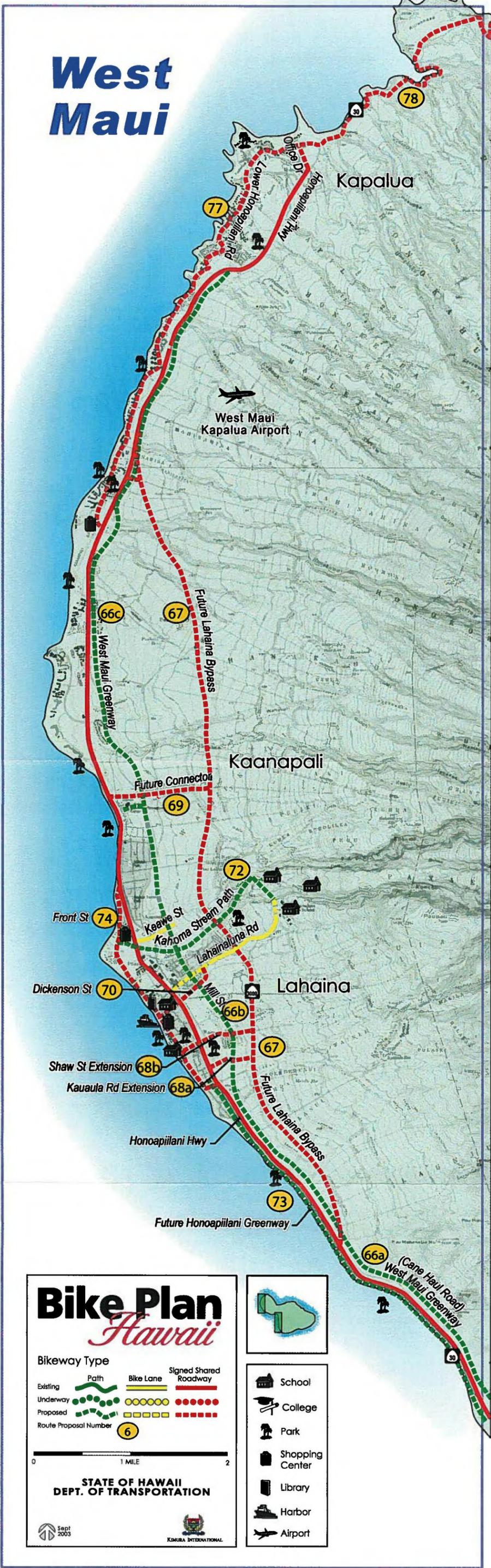
STATE OF HAWAII
DEPT. OF TRANSPORTATION

Sept 2003

KIMURA INTERNATIONAL

- School
- College
- Park
- Shopping Center
- Library
- Harbor
- Airport

West Maui



Kihei-Makena

Bike Plan
Hawaii

Bikeway Type

Existing Path	Bike Lane	Signed Shared Roadway
Underway Path	Underway Bike Lane	Underway Signed Shared Roadway
Proposed Path	Proposed Bike Lane	Proposed Signed Shared Roadway

Route Proposal Number **6**

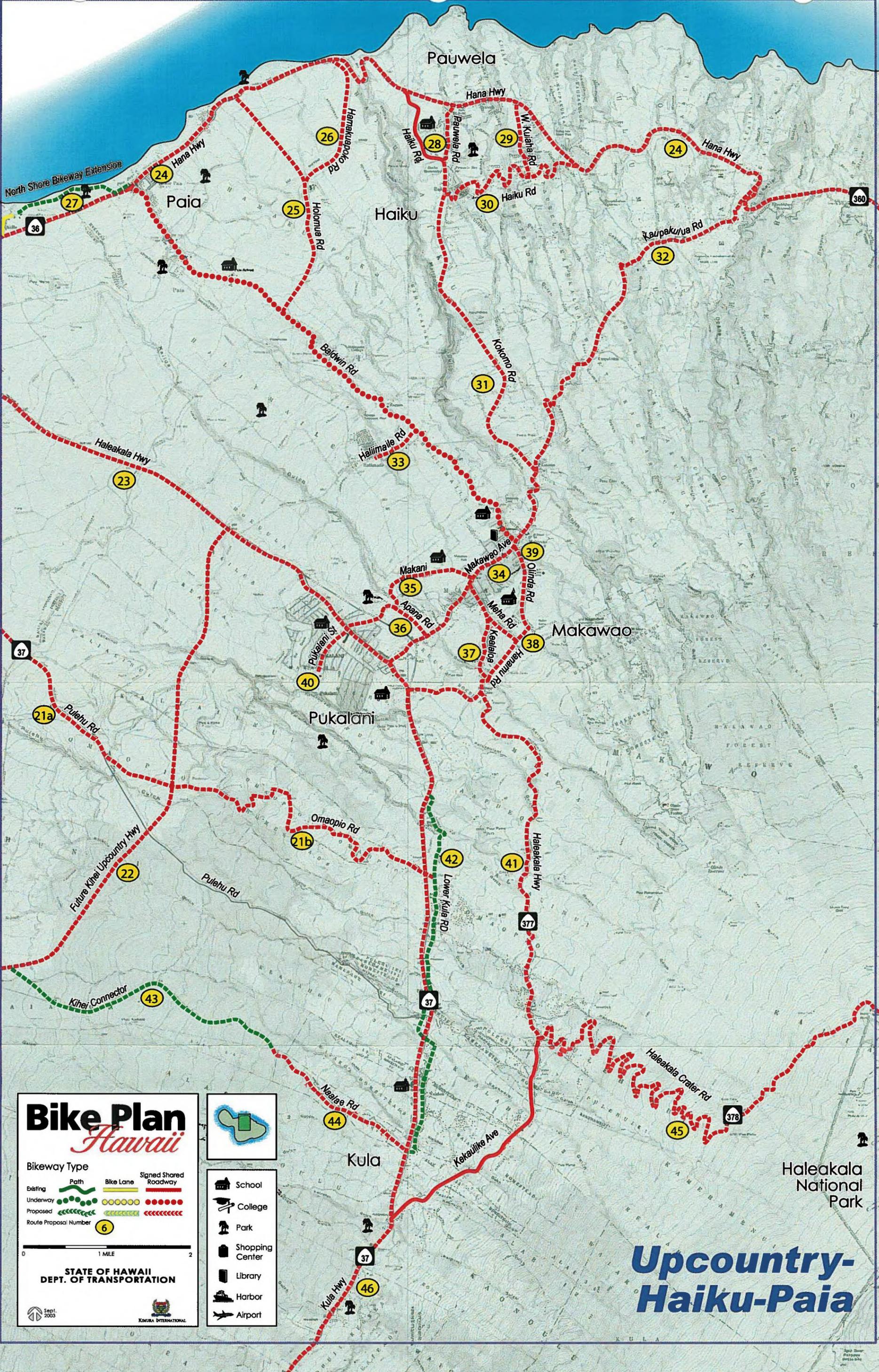
0 1 MILE 2

STATE OF HAWAII
DEPT. OF TRANSPORTATION

Sept 2003

KIMURA INTERNATIONAL

- School
- College
- Park
- Shopping Center
- Library
- Harbor
- Airport



Bike Plan Hawaii

Bikeway Type		
Existing	Path	Signed Shared Roadway
Underway	Bike Lane	
Proposed		
Route Proposal Number		
6		

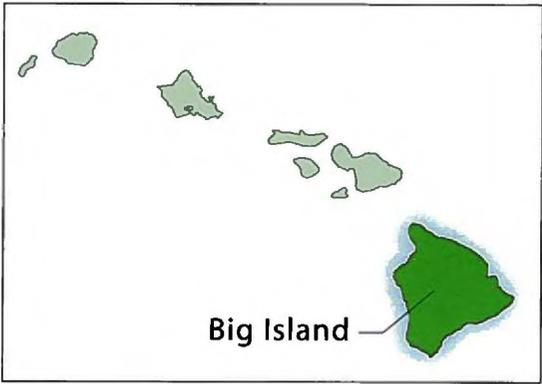
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STATE OF HAWAII
DEPT. OF TRANSPORTATION

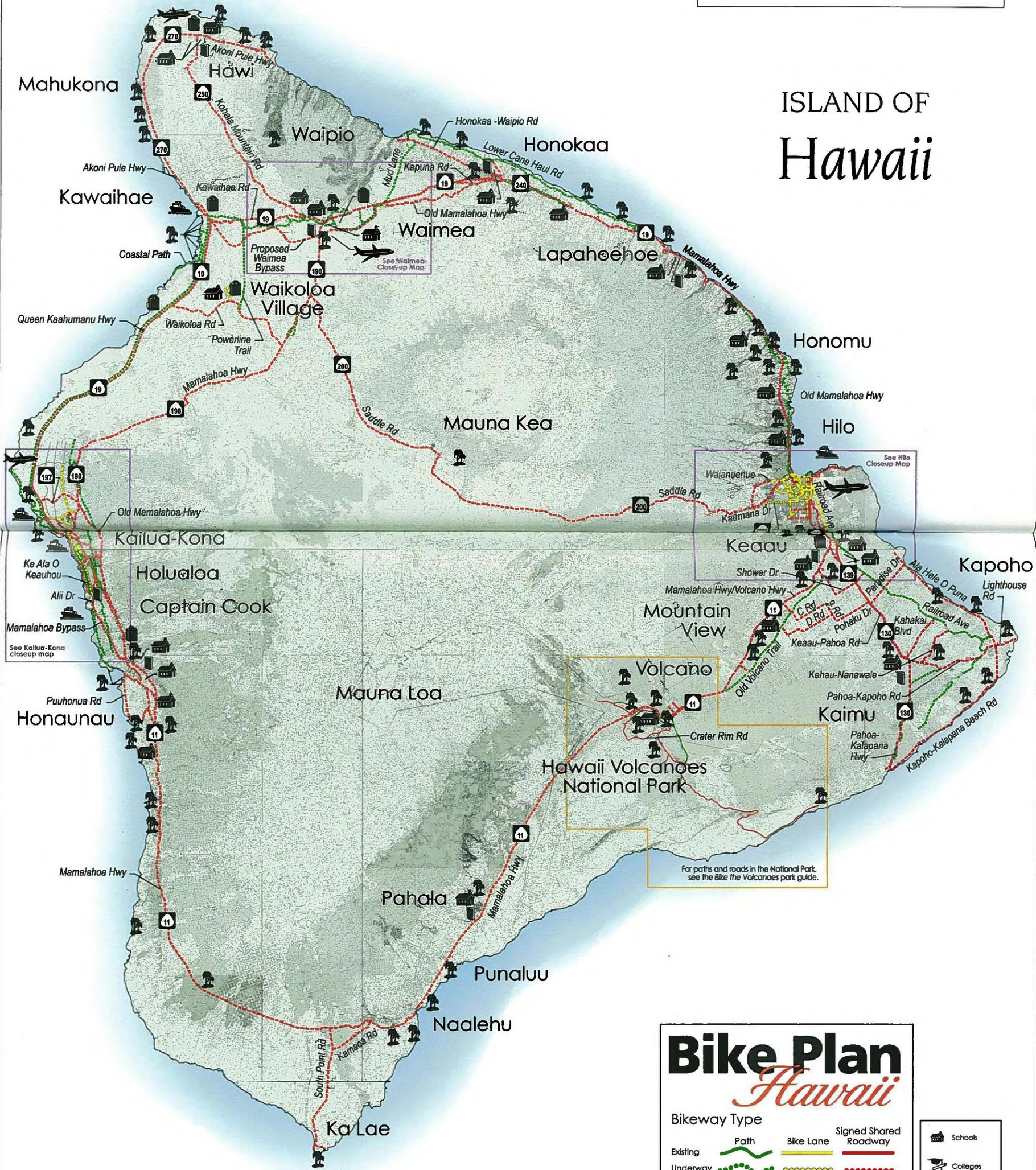


- School
- College
- Park
- Shopping Center
- Library
- Harbor
- Airport

Upcountry-Haiku-Paia



ISLAND OF Hawaii



Bike Plan Hawaii

Bikeway Type

Existing	Underway	Proposed	Path	Bike Lane	Signed Shared Roadway

0 1 5 10 15 MILE

STATE OF HAWAII
DEPT. OF TRANSPORTATION

Sept 2003

KIMURA INTERNATIONAL

- Schools
- Colleges
- Parks
- Shopping Centers
- Libraries
- Harbors
- Airports

Bike Plan *Hawaii*



Bikeway Type

Existing Path	Existing Bike Lane	Existing Signed Shared Roadway
Underway Path	Underway Bike Lane	Underway Signed Shared Roadway
Proposed Path	Proposed Bike Lane	Proposed Signed Shared Roadway
Route Proposal Number 6		

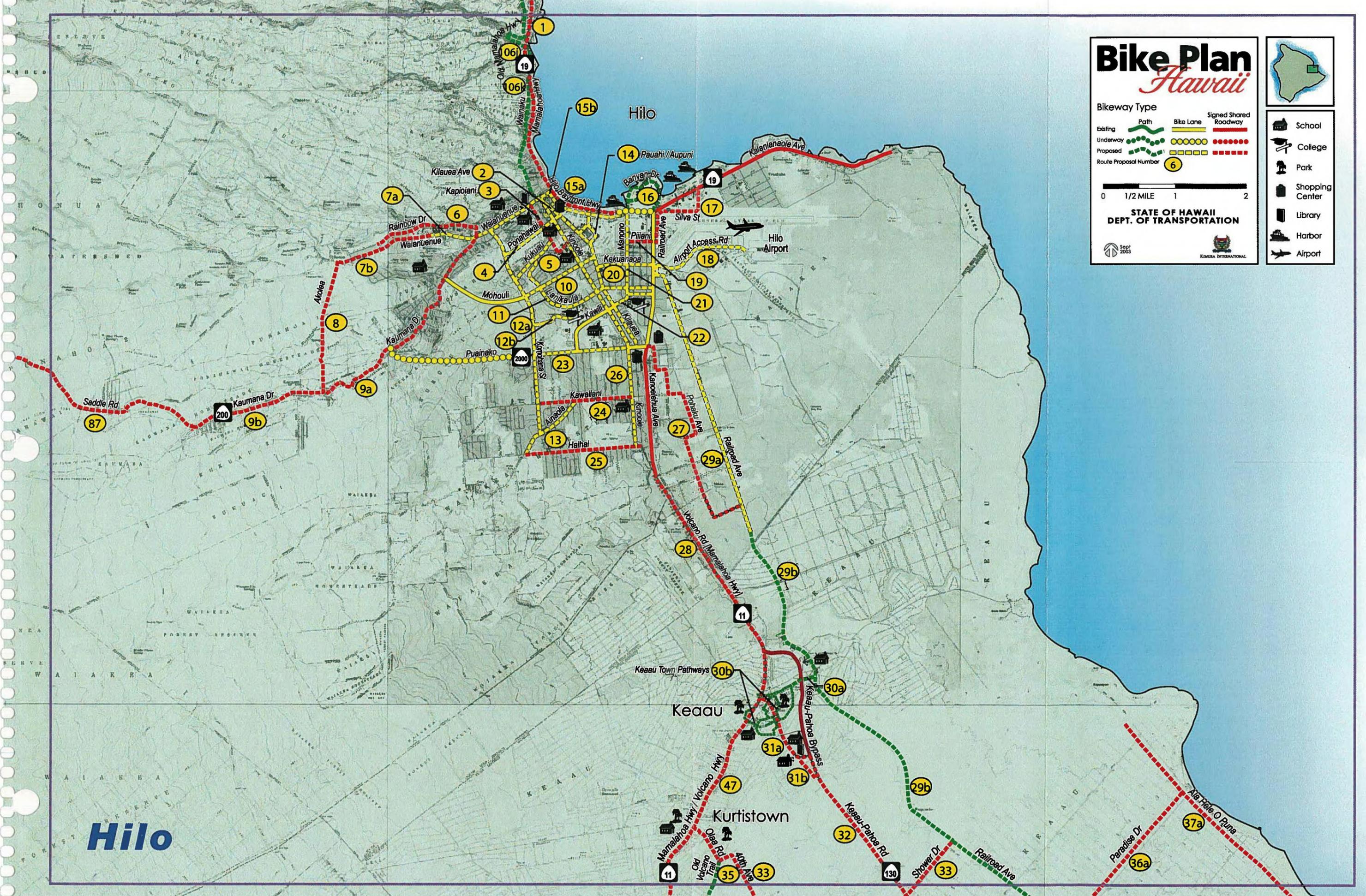
0 1/2 MILE 1 2

**STATE OF HAWAII
DEPT. OF TRANSPORTATION**

Sept 2003

KUMURA INTERNATIONAL

- School
- College
- Park
- Shopping Center
- Library
- Harbor
- Airport



Hilo

Waipio Valley

Hawaii Preparatory Academy

Waimea

Parker Ranch

Waimea-Kohala Airport

Waimea

Bike Plan Hawaii

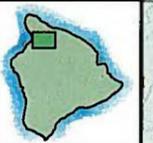
Bikeway Type

Existing	Underway	Proposed
Path	Bike Lane	Signed Shared Roadway

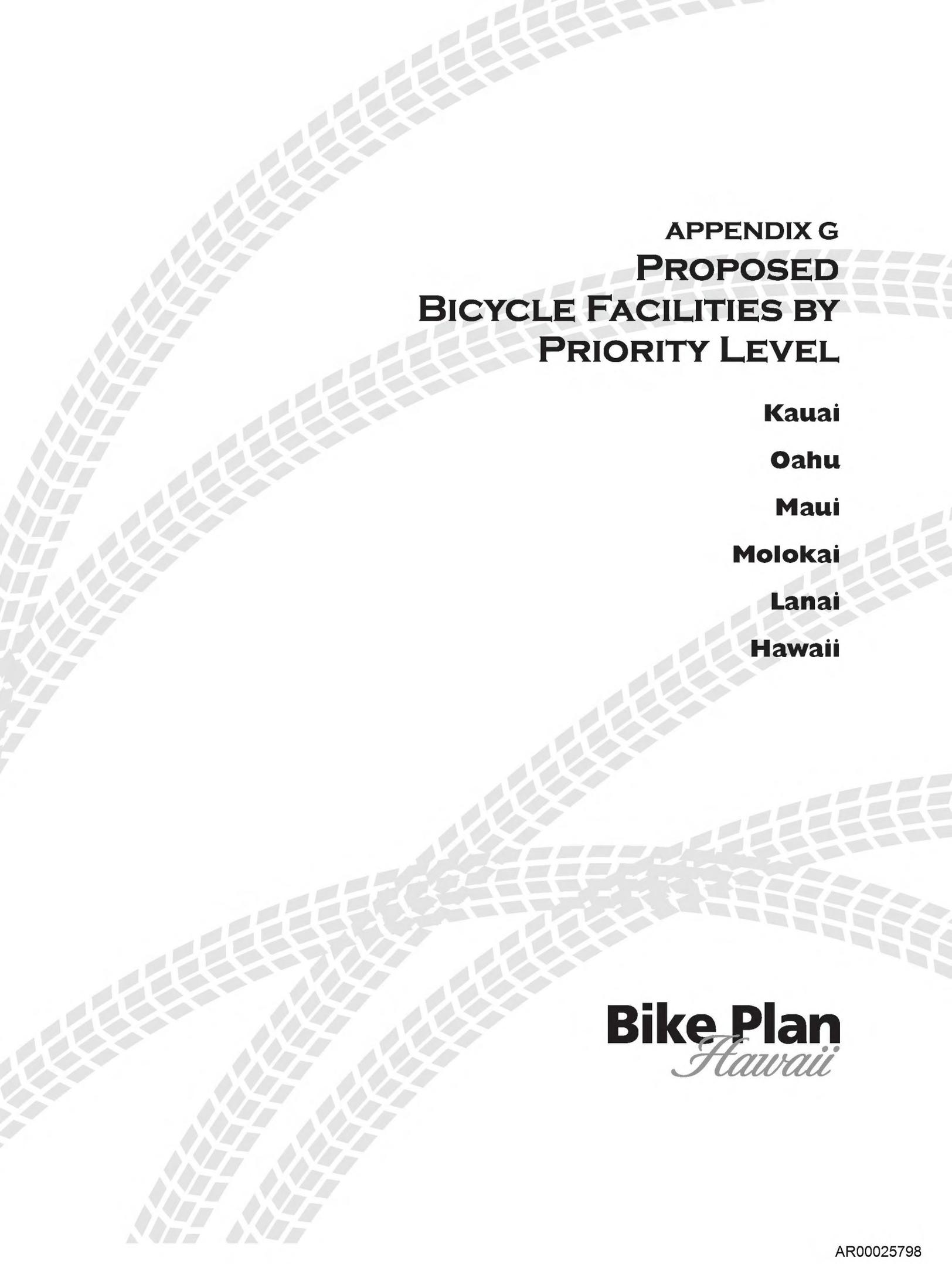
0 1/2 MILE 1 2

STATE OF HAWAII DEPT. OF TRANSPORTATION

Sept 2003 KAMUA INTERNATIONAL



- School
- College
- Park
- Shopping Center
- Library
- Harbor
- Airport



**APPENDIX G
PROPOSED
BICYCLE FACILITIES BY
PRIORITY LEVEL**

Kauai

Oahu

Maui

Molokai

Lanai

Hawaii

Bike Plan
Hawaii

Island of Kauai

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority I Proposals (Near-term)										
7b	Kawaihau	Coastal Shared Use Path (Phase 3) Lydgate Park Path–Waikaea Canal	C	C					2.6	\$1,003,000
7c	Kawaihau	Coastal Shared Use Path (Phase 5) Kuna Bay–Anahola	C	C					3.5	\$1,350,000
20a	Lihue	Ahukini Road Kuhio Hwy–Kapule Hwy	S	B			1.0	\$45,000		
26	Lihue	Hardy Street Kuhio Hwy–Umi St	C	B			0.2	\$9,000		
34	Lihue	Nawiliwili Road Kaunualii Hwy–Lala Rd	C	B	1.6	\$79,000				
35	Lihue	Puhi Road Puhi Rd–Hulemalu Rd	C	C	0.8	\$260,000				
39	Koloa–Poipu–Kalaheo	Maluhia Road Kaunualii Hwy–Koloa Town	C	C					3.4	\$1,312,000
48	Koloa–Poipu–Kalaheo	Kaunualii Hwy Maluhia Rd–Hanapepe	S	A	8.6	\$31,000				
Subtotal: Priority I Proposals					11.0	\$370,000	1.2	\$54,000	9.5	\$3,665,000
Priority I Mileage Distribution										
State					8.6	\$31,000	1.0	\$45,000	0.0	\$0
County					2.4	\$339,000	0.2	\$9,000	9.5	\$3,665,000
Other/Undefined					0.0	\$0	0	\$0	0	\$0
Priority II Proposals (Mid-term)										
3	North Shore	Kuhio Highway Hanalei Bay–Kilauea	S	B	8.2	\$407,000				
4	North Shore	Kilauea Road Kuhio Hwy–Kilauea Point	C/F	C					2.1	\$810,000
5	North Shore	Kuhio Highway Kilauea–Anahola	S	A	9.9	\$36,000				
6	Kawaihau	Kuhio Highway Kealia–Anahola	S	A	3.2	\$12,000				
7a	Kawaihau–Lihue	Coastal Shared Use Path (Phase 4) Lihue–Lydgate Park Path	C	C					10.2	\$3,935,000
12	Kawaihau	Kuhio Highway Wailua–Kealia	S	B	4.4	\$218,000				

Island of Kauai

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Priority II Proposals (Mid-term)										
15	Kawaihau	Haleilio Road Kuhio Hwy–Kaulana Rd and Lanakila Rd to community park	C	C					1.6	\$617,000
18a	Kawaihau	Kawaihau Road Path Extension Kapaa Elem School–Kuhio Hwy	C	C					0.6	\$231,000
18b	Kawaihau	Kawaihau Road (Upgrade) Kapaa Elem School–Kapahi Park	C	C					3.0	\$1,157,000
19	Lihue	Hanamaulu Road–Hehi Road Kuhio Hwy–Near Kapule Hwy	C	A	1.0	\$4,000				
20b	Lihue	Ahukini Road Kapule Hwy–State Recreation Pier	S	B	1.8	\$89,000				
22	Lihue	Kuhio Highway Rice St–Hanamaulu	S	C	2.8	\$911,000				
23	Lihue	Kauai Commuter Bikeway Vicinity Kaumualii–Wailua River	C/P	C					10.0	\$3,857,000
28	Lihue	Umi Street Rice St–Ahukini Rd	C	C			0.3	\$377,000		
30	Lihue	Rice Street Kuhio Hwy–Kapule Hwy	C	C			1.1	\$1,382,000		
31	Lihue	Rice Street Lala Rd–Kapule Hwy	C	A	0.8	\$3,000				
32	Lihue	Lala Road Nawiliwili Rd–Rice St	C	A	0.8	\$3,000				
33	Lihue	Lihue Community Pathway Along Nawiliwili Stream/ RR ROW to Civic Center	C	C					2.6	\$1,003,000
36	Lihue	Hulemalu Road Puhi Rd–Niumalu Rd	C	A	1.9	\$7,000				
41a	Koloa–Poipu–Kalaheo	Weliweli Road Maluhia Rd–Koloa–Poipu Bypass	C	A	1.2	\$4,000				
41b	Koloa–Poipu–Kalaheo	Hapa Road Weliweli Rd–Poipu Rd	C	C					1.1	\$424,000
42	Koloa–Poipu–Kalaheo	Koloa–Poipu Bypass Maluhia Rd–Poipu Rd	C	C	2.0	\$651,000				
44	Koloa–Poipu–Kalaheo	Poipu Road Koloa–Poipu	C	C	2.7	\$879,000				
45	Koloa–Poipu–Kalaheo	Lawai Road Kukuuiula–Poipu	C	C	1.4	\$456,000				

Island of Kauai

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority II Proposals (Mid-term)										
47	Koloa–Poipu–Kalaheo	Koloa Road Lawai–Koloa	C	C	3.4	\$1,107,000				
53a	West Side	Kaunualii Highway Mana Rd–Kekaha	S	A	9.9	\$36,000				
53b	West Side	Kaunualii Highway Kekaha–Hanapepe	S	A	7.3	\$27,000				
55	West Side	Kokee Road Kekaha–Puu o Kila Lookout	S/C	C	16.3	\$5,305,000				
Subtotal: Priority II Proposals					79.0	\$10,155,000	1.4	\$1,759,000	31.2	\$12,034,000
Priority II Mileage Distribution										
State					47.5	\$1,736,000	0.0	\$0	0.0	\$0
County					15.2	\$3,114,000	1.4	\$1,759,000	19.1	\$7,367,000
Other/Undefined					16.3	\$5,305,000	0.0	\$0	12.1	\$4,667,000
Priority III Proposals (Long-term)										
1	North Shore	Kuhio Highway Haena State Park–Hanalei Bay	S	C	6.7	\$2,181,000				
2a	North Shore	North Shore Path Network Mauka of Kuhio Highway	C/P	C					12.2	\$4,706,000
2b	North Shore	North Shore Path Network Coastal roads and beach accesses	C/P	C	10.6	\$3,450,000				
8	Kawaihau	Kealia Road Koolau–Kuhio Hwy	C	C	4.4	\$1,432,000				
9	Kawaihau	Mailihuna Road Kawaihau Rd–Kuhio Hwy	C	C	0.6	\$195,000				
10	Kawaihau	Kaapuni Road Kawaihau Rd–Olohena Rd	C	B	1.8	\$89,000				
11	Kawaihau	Waikaea Canal Kuhio Hwy and along canal	C	C					1.5	\$579,000
13	Kawaihau	Kauai Commuter Bikeway Wailua River–Kapaa	C	C					2.4	\$926,000
16a	Kawaihau	Kamalu Road Kuamoo Rd–Olohena Rd	C	B	1.7	\$84,000				
16b	Kawaihau	Olohena Road/Kukui Street Kamalu Rd–Kuhio Hwy	C	B	3.3	\$164,000				
16c	Kawaihau	Olohena Road Kamalu Rd–Moalepe Trailhead	C	C	2.1	\$684,000				
17a	Kawaihau	Kuamoo Road Kuhio Hwy–Kamalu Rd	C	B	2.8	\$139,000				

Island of Kauai

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority III Proposals (Long-term)										
17b	Kawaihau	Kuamoo Road Kamalu Rd–Loop at top of Homesteads	S	A	2.3	\$8,000				
18c	Kawaihau	Kawaihau Road–Kainahola Road–Waipouli Road Kapahi Park–Moalepe Trailhead	C	C					3.7	\$1,427,000
24	Lihue	Connection A to Future Bikeway Isenberg Tract– Future Commuter Bikeway	C/P	C	0.7	\$228,000				
25	Lihue	Connection B to Future Bikeway Isenberg Park– Future Commuter Bikeway	C/P	C	0.4	\$130,000				
27	Lihue	Haleko Road Nawiliwili Rd–Rice St	C	B			0.7	\$31,000		
29	Lihue	Puaole–Hoolako Streets Umi St–Kapule Hwy	C	B	1.5	\$74,000				
37	Lihue	Waapa Road Niumalu Rd–Nawiliwili Beach	C	A	1.2	\$4,000				
40	Koloa–Poipu–Kalaheo	Omao Road Kaumualii Hwy–Koloa Rd	C	C	2.1	\$684,000				
43	Koloa–Poipu–Kalaheo	Poipu Bay Coastal Path Poipu–Paoo Point	C/P	C					5.5	\$2,122,000
50	Koloa–Poipu–Kalaheo	Halewili Road Kaumualii Hwy–Kaumualii Hwy	S	A	3.9	\$14,000				
51	Koloa–Poipu–Kalaheo	Port Allen–Poipu Coastal Path Port Allen–Kukuiula	C/P	C					9.1	\$3,510,000
52	West Side	Salt Pond Coastal Path Waimea Bay–Salt Pond	C/P	C					8.6	\$3,317,000
54	West Side	Kekaha Road Kaumualii Hwy–Kaumualii Hwy	C	C	2.6	\$846,000				
56	West Side	Mana–Polihale Trail End of Kaumualii Hwy– Polihale State Park	C/P	C					5.1	\$1,967,000
Subtotal: Priority III Proposals					48.7	\$10,406,000	0.7	\$31,000	48.1	\$18,554,000
Priority III Mileage Distribution										
State					12.9	\$2,203,000	0.0	\$0	0.0	\$0
County					24.1	\$4,395,000	0.7	\$31,000	7.6	\$2,932,000
Other/Undefined					11.7	\$3,808,000	0.0	\$0	40.5	\$15,622,000

Island of Kauai

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority IV Proposals (Contingent on Roadway Project)										
14	Kawaihau	Future Bypass Highway Hanamaulu–Kapaa	S	C	7.8	\$2,539,000				
21	Lihue	Future Bypass Highway Kaumualii Hwy– North of Hanamaulu	S	C	4.8	\$1,569,000				
38	Lihue–Koloa– Poipu–Kalaheo	Future Bypass Highway Poipu–Kaumualii Hwy	S	C	6.6	\$2,148,000				
46	Koloa–Poipu– Kalaheo	Kukuiula Future Roads Lawai Bay–Poipu Road	P/C	C	5.1	\$1,660,000				
49	Koloa–Poipu– Kalaheo	Future Kaumualii Hwy Bypass Halewili–Poipu	S	C	6.0	\$1,953,000				
Subtotal: Priority IV Proposals					30.3	\$9,869,000	0.0	\$0	0.0	\$0
Priority IV Mileage Distribution										
State					25.2	\$8,209,000	0.0	\$0	0.0	\$0
County					0.0	\$0	0.0	\$0	0.0	\$0
Other/Undefined					5.1	\$1,660,000	0.0	\$0	0.0	\$0
Kauai Total: All Proposals					169.0	\$30,800,000	3.3	\$1,844,000	88.8	\$34,253,000
Kauai Mileage Distribution										
State					94.2	\$12,179,000	1.0	\$45,000	0.0	\$0
County					41.7	\$7,848,000	2.3	\$1,799,000	36.2	\$13,964,000
Other/Undefined					33.1	\$10,773,000	0.0	\$0	52.6	\$20,289,000

* Juris. (Jurisdiction)

S = State

C = County

F = Federal

P = Private

** Cost Class. (Cost Classification)

A = Minor improvements

B = Moderate improvements

C = Major improvements/new facility

Island of Oahu

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority I Proposals (Near-term)										
8	Central Oahu	Meheula Parkway Entire length	C	B			4.8	\$184,000		
9	Central Oahu	H-2 Millilani Interchange At Meheula Parkway	C	B			0.2	\$8,000		
10	Central Oahu	Kipapa Gulch Pathway Anania Dr–Central Oahu Regional Park	?	C					2.2	\$735,000
34a	Leeward	Hanson Road Leeward Bikeway–White Plains Beach	C/F	C	1.7	\$481,000				
34b	Leeward	Essex Road Leeward Bikeway–White Plains Beach	C/F	C	0.7	\$198,000				
47	Leeward	Farrington Highway Auyong Homestead Rd–Farrington Hwy at Honokai Hale	S	C	3.8	\$1,076,000				
55	North Shore	Ke Ala Pupukea Path (extension) Waimea Bay–Haleiwa Beach Park	C	C					3.5	\$1,174,000
84a	Windward	Kawainui Levee Path Mokapu Blvd–Kailua Rd	C	B					1.3	\$289,000
94	Windward	Kalanianaʻole Highway Aloiloi St (Waimanalo)–Makapuu	S	C	4.8	\$1,359,000				
95	East Oahu	Kalanianaʻole Highway Makapuu–Sandy Beach	S	A	2.2	\$7,000				
102	Primary Urban Center	Ala Moana Boulevard Kalakaua Blvd–Connect to end of existing Nimitz Bike Lane	S	C			2.7	\$2,950,000		
103	Primary Urban Center	Nimitz Highway Middle St–Waiakamilo Rd	S	C			1.0	\$1,092,000		
Subtotal: Priority I Proposals					13.2	\$3,121,000	8.7	\$4,234,000	7.0	\$2,198,000
Priority I Mileage Distribution										
State					10.8	\$2,442,000	3.7	\$4,042,000	0.0	\$0
County					0.0	\$0	5.0	\$192,000	4.8	\$1,463,000
Other/Undefined					2.4	\$679,000	0.0	\$0	2.2	\$735,000

Island of Oahu

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Priority II Proposals (Mid-term)										
4	Central Oahu	Kilani Avenue N. Cane St–Wahiawa Elem School	C	C	0.5	\$142,000				
5	Central Oahu	California Avenue Plum St–Iliahi Elementary School	C	C	1.2	\$340,000				
14a	Central Oahu	Paiwa Street Farrington Hwy–H-1 Freeway	C	C			1.0	\$1,092,000		
14b	Central Oahu	Mokuola Street Nalii St–Farrington Hwy	C	C			0.2	\$219,000		
15	Central Oahu	Village Park Connector (extension) to Waipahu Sugar Mill	C/P	C					1.0	\$335,000
16a	Central Oahu	Cane Haul Road H-2 (Waihona)–Waipahu St	C/P	C					1.3	\$419,000
16b	Central Oahu	Cane Haul Road Waipahu St–Waipio Pt Access Rd	C/P	C					2.0	\$657,000
17a	Central Oahu	Waipahu Depot Road Waipahu St–Pearl Harbor Bike Path	C	B			0.4	\$15,000		
17b	Central Oahu	Waipahu Depot Road/Waipio Pt. Access Road Pearl Harbor Bike Path connecting to Waipio Soccer Park	C	B			2.4	\$93,000		
18	Central Oahu	Pearl Harbor Historic Trail Waipahu Depot Rd–West Loch	C	C					2.8	\$939,000
23a	Leeward	Mango Tree Road Kapolei/Ewa Villages–Asing Park	C/P	C					1.5	\$503,000
26	Leeward	Geiger Road Ft. Weaver Rd–Kapolei Pkwy	C	C			0.8	\$874,000		
60	Windward	Kamehameha Highway Heeia–Kahakili Hwy	C	B	4.3	\$185,000				
61	Windward	Kamehameha Hwy Kahuhipa Rd–Kaneohe Bay Dr	C	C			1.0	\$1,092,000		
62	Windward	Lilipuna Road Kamehameha Hwy– Kamehameha Hwy	C	C	2.4	\$691,000				
71	Windward	Makalani/Pua Alowalo/Pua Inia Kanehoe Bay Dr– Kamehameha Hwy	C	B	0.6	\$25,000				
72	Windward	Aumoku/Namoku Kanehoe Bay Dr–Mokulele Dr	C	B	0.8	\$35,000				

Island of Oahu

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Priority II Proposals (Mid-term)										
73	Windward	Mokulele Drive Kamehameha Hwy– Kaneohe Bay Dr	C	B	1.2	\$50,000				
74	Windward	Luluku Road Loop around Hoomaluhia Gardens	C	A	3.6	\$11,000				
77a	Windward	Old Pali Road Pali Lookout–Pali Hwy	S	B					1.2	\$269,000
81	Windward	Kalaheo Avenue Kainui Dr–Kuulei Rd	C	A	1.4	\$4,000				
82	Windward	Kuulei Road Kainalu Dr–Kalaheo Rd	C	B			0.3	\$12,000		
84b	Windward	Kawainui Marsh Path Mokapu Blvd–Kailua Rd	C/P	C					2.6	\$872,000
87	Windward	Kailua Road Wanaao Rd–End of existing bike lane	C	B			0.5	\$19,000		
88	Windward	Wanaao Road Kailua Rd–Keolu Dr	C	C			1.0	\$283,000		
89	Windward	Awakea/Ka Awakea/Papalani Kailua Rd–Keolu Dr	C	C	0.7	\$190,000				
90	Windward	Keolu Drive Kalaniana'ole Hwy–Loop to end	C	B			2.1	\$242,000 ^a		
91	Windward	Kalaniana'ole Highway Kailua Rd–Olomana Golf Links	S	A	2.6	\$8,000				
96	East Oahu	Kalaniana'ole Highway Sandy Beach–Lunalilo Home Rd	S	A	2.6	\$8,000				
97	East Oahu	Portlock Road Kalaniana'ole Hwy–Lunalilo Home Rd	C	A	0.8	\$3,000				
100	East Oahu	Analii/Poola Street Kalani Wai'ala'e Iki Park– Keikilani Aina Haina Elem School	C	C					0.9	\$305,000
101	Primary Urban Center	Pali Highway Nuuanu Ave–Wa'akanaka St	S	C	1.3	\$368,000				
107	Primary Urban Center	Farrington Hwy Fort Weaver Rd– Kamehameha Hwy	S	B			2.2	\$2,403,000		

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Priority II Proposals (Mid-term)										
108	Primary Urban Center	Farrington Hwy (Waiawa Interchange) Kamehameha Hwy– Kamehameha Hwy	S	C			0.3	\$328,000		
109b	Primary Urban Center	Kamehameha Hwy at Waiawa Widen overpass across H-1/H-2	S	C			0.5	\$5,715,000		
Subtotal: Priority II Proposals					23.9	\$2,060,000	12.7	\$12,387,000	13.2	\$4,299,000
Priority II Mileage Distribution										
State					6.5	\$384,000	3.0	\$8,446,000	1.2	\$269,000
County					17.4	\$1,676,000	9.7	\$3,941,000	3.7	\$1,244,000
Other/Undefined					0.0	\$0	0.0	\$0	8.3	\$2,786,000
Priority III Proposals (Long-term)										
1a	Central Oahu	Kaukonahua Road Waialua Beach Rd–Farrington Hwy	S	B	1.2	\$52,000				
1b	Central Oahu	Kaukonahua Road Farrington Hwy–Wilikina Dr	C	C	4.0	\$1,132,000				
1c	Central Oahu	Kaukonahua Road Wilikina Dr– Kamehameha Highway	C	C	2.1	\$5,928,000				
2	Central Oahu	Kamananui Road Kamehameha Hwy–Wilikina Dr	S	B	1.2	\$52,000				
3a	Central Oahu	Wilikina Drive Kaukonahua Rd–Kamananui Rd	C	B	1.9	\$82,000				
3b	Central Oahu	Wilikina Drive Kamananui Rd–Kunia Rd	S	B	1.3	\$56,000				
6	Central Oahu	Wilikina Drive Kunia Rd–Kamehameha Hwy	S	B	0.7	\$30,000				
7a	Central Oahu	Kamehameha Highway Haleiwa Bypass–Wilikina Dr	S	B	8.8	\$380,000				
7b	Central Oahu	Kamehameha Highway Wilikina Dr–Kuahelani Ave	S	B	2.7	\$117,000				
11	Central Oahu	Kunia Road Anonui St–Wilikina Dr	S	B	8.0	\$345,000				
12a	Central Oahu	Kamehameha Highway Meheula Pkwy–Ka Uka Blvd	S	B	2.4	\$104,000				

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Priority III Proposals (Long-term)										
12b	Central Oahu	Kamehameha Highway Waipio Uka Blvd/Central Oahu Regional Park–Connector to Waipahu St	S	B	1.0	\$43,000				
13	Central Oahu	Waipahu Street East–West cross route thru Waipahu	C	C			3.0	\$3,266,000		
22	Leeward	Renton Road Ft. Weaver Rd–Future North–South Rd	C	B	1.3	\$56,000				
23b	Leeward	Mango Tree Road Asing Park/Park&Ride–Honouliuli Path	C/P	C					1.3	\$436,000
24	Leeward	Honouliuli Path West Loch–Mango Tree Rd	C/P	C					1.4	\$470,000
25	Leeward	Honouliuli Path Mango Tree Rd–North Rd	C/P	C					2.0	\$671,000
28	Leeward	North Road Ft. Weaver Rd–A Ave	C	A			2.0	\$6,000		
29	Leeward	Bravo Road North Rd–Connection to ferry landing	C/F	B	1.4	\$60,000				
30	Leeward	Papipi Road Ft. Weaver Rd–Oneula Beach Park	C	C	0.9	\$255,000				
31	Leeward	Onuela Beach Bike Path Through the park	C	C					0.7	\$235,000
33	Leeward	Plantation Road (E–W connection) Future Kapolei Pkwy–Hanson Rd	C	C			3.7	\$546,000		
38	Leeward	Enterprise Avenue Leeward Bikeway–Midway	C	C	1.0	\$283,000				
39	Leeward	Coral Sea Road Around Barbers Point airfield	C	C					4.7	\$1,325,000
41	Leeward	Farrington Highway Kamokila Blvd–Honokai Hale	S	C	2.5	\$708,000				
42	Leeward	Makaiwa Hills Farrington Hwy–Aliinui Dr	C	C	1.9	\$588,000				
44	Leeward	Kalaeloa Boulevard Kapolei Pkwy–Olai St	S/C	A	3.2	\$11,000				

Island of Oahu

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					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority III Proposals (Long-term)										
45	Leeward	Aliinui Drive Ko Olina Resort Access	P/C?	A	4.2	\$13,000				
46	Leeward	Waipahe Place Aliinui Dr–access to Ko Olina Marina	P/C?	A	0.3	\$1,000				
48	Leeward	Farrington Highway Kaena Point Path– Keaau Beach Park	S	B	4.5	\$194,000				
49	Leeward	Kaena Point Path Farrington Hwy (Waianae)– Farrington Hwy (Mokuleia)	C	C					4.5	\$1,509,000
50	North Shore	Farrington Highway Kamehameha Hwy (Waialua)– End (Kaena Beach)	S	B	8.4	\$362,000				
51	North Shore	Haleiwa Road Waialua Beach Rd– Haleiwa Alii Beach Pk	C	C	1.6	\$453,000				
52	North Shore	Kamehameha Highway Waialua Beach Road– Haleiwa Bypass	S	B	1.5	\$65,000				
54	North Shore	Kamehameha Highway Haleiwa Bypass–Waimea Valley Rd	S	C	3.9	\$1,104,000				
56	North Shore	Kamehameha Highway Waimea Bay–Waialeale Beach Park	S	B	4.5	\$194,000				
57	North Shore	Kamehameha Highway Waialeale Beach Park– Crouching Lion	S	C	17.1	\$4,840,000				
58	Windward	Kamehameha Highway Waiahole Valley Rd–Kahekili Hwy	S	C	2.0	\$566,000				
59	Windward	Kahekili Highway Kamehameha Hwy–Haiku Rd	S	B	3.2	\$138,000				
63	Windward	Kahuhipa Street Haiku Rd–Kamehameha Hwy	C	B	1.2	\$53,000				
64	Windward	Keaahala Road Kamehameha Hwy–Windward CC	C	B	0.9	\$39,000				
67	Windward	Likelike Highway Kahekili Hwy–Kamehameha Hwy	S	C	0.5	\$142,000				
68	Windward	Kamehameha Highway Likelike Hwy–Koolau View Dr	S	C			1.1	\$1,202,000		

Island of Oahu

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority III Proposals (Long-term)										
69	Windward	Keneke Street Greenway Along stream	C	C					0.5	\$168,000
70	Windward	Anoi Road Luluku Rd–Likelike Hwy	C	B	0.4	\$16,000				
75	Windward	Kamehameha Highway Koolau View Dr–Pali Hwy	S	C	1.3	\$368,000				
76a	Windward	Kalanianaʻole Highway Castle Junction–Kamehameha Hwy	S	C	1.8	\$509,000				
76b	Windward	Pali Hwy Kamehameha Hwy–Pali Tunnel	S	C	1.7	\$481,000				
77b	Windward	Pali Lookout Access Road Pali Hwy–Pali Lookout	S	B	1.1	\$49,000				
77c	Windward	Pali Highway Nuuanu–Pali Dr– Pali Lookout Access	S	C	0.4	\$108,000				
77d	Windward	Nuuanu–Pali Drive Pali Hwy–Pali Hwy	C	B	2.3	\$98,000				
78	Windward	Kaneohe Bay Drive Kamehameha Hwy– H-3 Interchange	S	B	3.5	\$151,000				
79	Windward	Mokapu Boulevard Kaneohe Bay Dr–N. Kalaheo Ave	S	B			2.2	\$84,000		
83	Windward	Hahani Street Kailua Rd–Hamakua Rd	C	B			0.2	\$8,000		
85	Windward	Kapaa Quarry Road Mokapu Blvd–Kalanianaʻole Hwy	C	B	2.6	\$112,000				
86	Windward	Hamakua Drive Hahani St–Kailua Rd	C	B	0.3	\$12,000				
92	Windward	Old Kalanianaʻole Highway Kalanianaʻole Hwy– Kalanianaʻole Hwy	C	B	1.7	\$73,000				
93a	Windward	Waimanalo Circuit Kumuhau St–Waikupanaha/Ahiki St	C	B	3.4	\$146,000				
93b	Windward	Waimanalo Circuit Hihimanu St–Oluolu St	C	B	1.7	\$73,000				
98	East Oahu	Ahukini Street Lunalilo Home Rd– Kamiloiki Elem School	C	B	0.7	\$2,000				
99a	East Oahu	Wailua Street Hawaii Kai Dr–Lunalilo Home Rd	C	B	0.5	\$22,000				

Island of Oahu

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority III Proposals (Long-term)										
99b	East Oahu	Keahole Street Kalaniana'ole Hwy–Hawaii Kai Dr	C	B	0.6	\$26,000				
99c	East Oahu	Hawaii Kai Drive Kalaniana'ole Hwy–Wailua St	C	B	1.7	\$73,000				
99d	East Oahu	Kawaihae Street Kalaniana'ole Hwy–Hawaii Kai Dr	C	A	0.9	\$3,000				
99e	East Oahu	Halemaumau Street Kalaniana'ole Hwy– Kalaniana'ole Hwy	C	B	0.8	\$35,000				
99f	East Oahu	Hind Iuka Drive East Hind Dr– Wailupe Valley School	C	B	0.7	\$30,000				
99g	East Oahu	West/East Hind Drive Kalaniana'ole Hwy– Kalaniana'ole Hwy	C	B	1.2	\$52,000				
104	Primary Urban Center	Liliha Street King Street–H-I Freeway	S	C			0.4	\$437,000		
105	Primary Urban Center	Kamehameha Highway Waimano Home Rd– Aiea Access Rd	S	C			3.1	\$3,386,000		
109a	Primary Urban Center	Kamehameha Hwy Waimano Home Rd–Waihona St	S	C			1.8	\$1,966,000		
Subtotal: Priority III Proposals					131.6	\$22,087,000	16.4	\$9,699,000	15.1	\$4,841,000
Priority III Mileage Distribution										
State					83.8	\$11,652,000	7.5	\$5,873,000	0.0	\$0
County					38.7	\$10,350,000	8.9	\$3,826,000	10.4	\$3,237,000
Other/Undefined					9.1	\$85,000	0.0	\$0	4.7	\$1,577,000
Priority IV Proposals (Contingent on Roadway Project)										
19	Leeward	Path next to Farrington Highway Future North-South Rd– Ft. Weaver Rd	C	C					2.1	\$711,000
20	Leeward	Farrington Highway Kapolei Golf Course– Ft. Weaver Rd	C/S	C	3.2	\$906,000				
21a	Leeward	Future North–South Road Farrington Hwy–Kapolei Parkway	S	C			2.0	\$2,185,000		
21b	Leeward	Future North–South Road Makai of Kapolei Parkway	S	C			2.6	\$2,840,000		

Island of Oahu

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority IV Proposals (Contingent on Roadway Project)										
27a	Leeward	Kapolei Parkway (Ewa Beach) Geiger Rd–Papipi Rd	C	C			1.6	\$1,748,000		
27b	Leeward	Kapolei Parkway (Villages segment) Kapolei Pkwy (Kaloι Gulch)– Kalehuna	C	C			1.4	\$1,529,000		
27c	Leeward	Kapolei Parkway (City segment) Ft. Barrette Rd–Kamokila Blvd	C	C			1.0	\$1,092,000		
32	Leeward	Ewa Marina Access Connection to Ewa Marina	P/C	C						
36	Leeward	Kamaaha Avenue (extension) Ft. Barrette Rd– Future Kapolei Pkwy	C	C			1.8	\$1,966,000		
40	Leeward	Manawai (extension) Kamokila Blvd– Future Kapolei Pkwy	C	C			0.6	\$655,000		
43	Leeward	Aliinui Drive (extension) Connect to future Kapolei Pkwy	C	C			1.0	\$1,092,000		
Subtotal: Priority IV Proposals							3.2	\$906,000	12.0	\$13,107,000
Priority IV Mileage Distribution										
State							0.0	\$0	4.6	\$5,025,000
County							0.0	\$0	7.4	\$8,082,000
Other/Undefined							3.2	\$906,000	0.0	\$0
Oahu Total: All Proposals							171.8	\$28,174,000	49.7	\$39,427,000
Oahu Mileage Distribution										
State							101.1	\$14,478,000	18.8	\$23,386,000
County							56.1	\$12,026,000	31.0	\$16,041,000
Other/Undefined							14.7	\$1,670,000	0.0	\$0

^a = Cost based on actual bid amount

* Juris. (Jurisdiction)

S = State

C = County

F = Federal

P = Private

** Cost Class. (Cost Classification)

A = Minor improvements

B = Moderate improvements

C = Major improvements/new facility

Island of Maui

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority I Proposals (Near-term)										
11a	Wailuku–Kahului	Wakea Avenue Kaahumanu Ave–Onehee Ave	C	B			0.4	\$16,000		
12	Wailuku–Kahului	Onehee Avenue Wakea Ave–Papa Ave	C	B			0.7	\$31,000		
13a	Wailuku–Kahului	Papa Avenue Kamehameha Ave–Laaui St	C	B			0.8	\$36,000		
13b	Wailuku–Kahului	Papa Avenue Hina Ave–Puunene Ave	C	B			0.3	\$13,000		
14a	Wailuku–Kahului	Lono Avenue Kaahumanu Ave–Papa Ave	C	B			0.2	\$9,000		
14b	Wailuku–Kahului	Lono Avenue Laaui Ave–Papa Ave	C	B			0.3	\$13,000		
16a	Wailuku–Kahului	Puunene Avenue Kaahumanu Ave–Dairy Rd	S	B			1.1	\$49,000		
34	Upcountry Haiku–Paia	Makawao Avenue Kokomo Rd–Makani Rd	C	C	3.2	\$1,042,000				
45	Upcountry Haiku–Paia	Haleakala Crater Road (Pull-outs along access road to National Park)	S	B	4 ea.	\$89,000				
56a	Kihei–Makena	Kihei Greenway Kaonoulu St–East Waipulani Rd	C	C					0.8	\$309,000
56b	Kihei–Makena	Kihei Greenway Extension East Lipoa St–Kilohana Dr	C	C					2.5	\$964,000
57	Kihei–Makena	East Welakahao Road South Kihei Rd–Piilani Hwy	C	B	0.6	\$30,000				
61	Kihei–Makena	Ohukai Road South Kihei Rd–Piilani Hwy	C	B	0.5	\$25,000				
62	Kihei–Makena	South Kihei Road Ohukai Rd–Mokulele Hwy	C	B	0.8	\$40,000				
66b	West Maui	West Maui Greenway Mill Street Segment	C	C	0.5	\$163,000				
66c	West Maui	West Maui Greenway Vicinity of Pioneer Sugar Mill–Kaanapali (Oil Rd, Lower Puukoolii Rd, cane haul road parallel to Honoapiilani Hwy)	C/P	C					8.0	\$3,086,000
66d	West Maui	West Maui Greenway Access to Lahaina Civic Center	C/P	C					0.2	\$77,000

Island of Maui

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority I Proposals (Near-term)										
Sub-total: Priority I Proposals					5.6	\$1,389,000	3.8	\$167,000	11.5	\$4,436,000
Priority I Mileage Distribution										
State					N/A	\$89,000	1.1	\$49,000	0.0	\$0
County					5.6	\$1,300,000	2.7	\$118,000	3.3	\$1,273,000
Other/Undefined					0.0	\$0	0.0	\$0	8.2	\$3,163,000
Priority II Proposals (Mid-term)										
1	Wailuku–Kahului	South High Street Honoapiilani Hwy–West Main St	C	C	0.3	\$98,000				
5	Wailuku–Kahului	West Main Street South High St–East Main St	C	C	0.5	\$163,000				
6	Wailuku–Kahului	Market Street West Main St–Kahekili Hwy	C	B	0.5	\$25,000				
7a	Wailuku–Kahului	Ima Kala Street West Main St–Proposed Iao Stream Path	C	B	0.5	\$25,000				
7b	Wailuku–Kahului	Ima Kala Street Proposed Iao Stream Path– Kahekili Hwy	C	C					0.6	\$231,000
8	Wailuku–Kahului	Iao Stream Path Ima Kala St–Waiehu Beach Rd	C	B					1.1	\$283,000
9	Wailuku–Kahului	Waiehu Beach Road Kahekili Hwy–Iao Stream	S	A	1.0	\$4,000				
10	Wailuku–Kahului	Kahului Beach Road Iao Stream–Kaahumanu Ave	S	A	1.6	\$6,000				
11b	Wailuku–Kahului	Wakea Avenue Puunene Ave–Hana Hwy	C	C			0.5	\$641,000		
17	Wailuku–Kahului	North Shore Coastal Loop County Wastewater Treatment Plant–Kanaha Beach Park	C	C					1.3	\$501,000
18	Wailuku–Kahului	Dairy Road Puunene Ave–Hana Hwy	S	B	1.0	\$50,000				
19	Wailuku–Kahului	Keolani Place Haleakala Hwy–Airport	C	A	1.0	\$4,000				
21a	Upcountry Haiku–Paia	Pulehu Road Hana Hwy–Omaopio Rd	C	C	6.2	\$2,018,000				
21b	Upcountry Haiku–Paia	Omaopio Road Pulehu Rd–Kula Hwy	C	C	5.4	\$1,758,000				

Island of Maui

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority II Proposals (Mid-term)										
25	Upcountry Haiku–Paia	Holomua Road Baldwin Ave–Hana Hwy	C	C	2.9	\$944,000				
26	Upcountry Haiku–Paia	Hamakuapoko Road Holomua Rd–Hana Hwy	C	C	1.7	\$553,000				
27	Upcountry Haiku–Paia	North Shore Bikeway Extension Alakapa Pl–Baldwin Ave	C	C					1.5	\$579,000
30	Upcountry Haiku–Paia	Haiku Road Hana Hwy–Pauwela Rd	C	B	3.2	\$159,000				
35	Upcountry Haiku–Paia	Makani Road Makawao Ave– Haleakala Hwy (Pukalani)	C	B	2.0	\$99,000				
41	Upcountry Haiku–Paia	Haleakala Highway Kula Hwy–Kekaulike Ave	S	B	9.2	\$456,000				
53	Kihei– Makena	Kilohana Drive South Kihei Rd–Piilani Hwy	C	B			0.7	\$31,000		
55	Kihei– Makena	Keonekai Road South Kihei Rd–Piilani Hwy	C	B			0.6	\$27,000		
58a	Kihei– Makena	Kihei Coastal Route (Uluniu Road) West Waipulani Rd–West Lipoa St	C	B	1.2	\$60,000				
58b	Kihei– Makena	Kihei Coastal Route (Halama Road) Waihouli–Kalama Beach Park	C	C	0.9	\$45,000			0.5	\$129,000
59	Kihei– Makena	Ohukai Road Piilani Hwy–Future Kihei- Upcountry Hwy	C	B	0.8	\$40,000				
60	Kihei– Makena	Lipoa Parkway (thru Maui High Tech Park) Piilani Hwy–end of road	C	B			0.6	\$27,000		
63	Kihei– Makena	Around Kealia Pond Off North Kihei Rd	C	C					2.7	\$1,042,000
66a	West Maui	West Maui Greenway Olowalu–end of Mill St pavement (along cane haul road parallel to Honoapiilani Hwy)	C/P	C					6.2	\$2,392,000

Island of Maui

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority II Proposals (Mid-term)										
70	West Maui	Dickenson Street Honoapiilani Hwy– Lahainaluna High Sch	C	C	0.7	\$228,000				
71	West Maui	Lahainaluna Road Honoapiilani Hwy– Kahoma Stream Path	C	B			0.4	\$18,000		
72	West Maui	Kahoma Stream Path Nohea Kai Dr– Lahainaluna High School	C	C					1.9	\$733,000
74	West Maui	Front Street Honoapiilani Hwy– Honoapiilani Hwy	C	B	2.5	\$124,000				
Sub-total: Priority II Proposals					43.1	\$6,735,000	2.8	\$744,000	15.8	\$5,890,000
Priority II Mileage Distribution										
State					12.8	\$1,004,000	0.0	\$0	0.0	\$0
County					30.3	\$6,343,000	2.8	\$744,000	9.6	\$3,498,000
Other/Undefined					0.0	\$0	0.0	\$0	6.2	\$2,392,000
Priority III Proposals (Long-term)										
3	Wailuku– Kahului	Waiale Road Maui Lani–Honoapiilani Hwy	C	B	4.0	\$198,000				
4	Wailuku– Kahului	Waiale Road Proposed Iao Stream Path– Honoapiilani Hwy	C	C	0.8	\$260,000				
15a	Wailuku– Kahului	Kuihelani Highway Puunene Ave–Honoapiilani Ave	S	A	5.3	\$19,000				
15b	Wailuku– Kahului	Kuihelani Highway Puunene Ave–Honoapiilani Ave	S	C					5.3	\$2,044,000
20	Wailuku– Kahului	Hansen Road Pulehu Rd–Hana Hwy	C	C	0.9	\$293,000				
23	Upcountry Haiku–Paia	Haleakala Hwy Hana Hwy–Kula Hwy	S	B	7.5	\$372,000				
24	Upcountry Haiku–Paia	Hana Hwy Wailuku–Hana	S	B	51.0	\$2,530,000				
28	Upcountry Haiku–Paia	Pauwela Road Haiku Rd–Hana Hwy	C	C	0.6	\$195,000				
29	Upcountry Haiku–Paia	West Kuiaha Road Hana Hwy–Haiku Rd	C	C	0.9	\$293,000				

Island of Maui

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority III Proposals (Long-term)										
31	Upcountry Haiku–Paia	Kokomo Road Kailuhi–Haiku Rd	C	C	3.9	\$1,269,000				
32	Upcountry Haiku–Paia	Kaupakulua Road Makawao Ave–Hana Hwy	C	C	4.9	\$1,595,000				
33	Upcountry Haiku–Paia	Haliimaile Road Haliimaile–Baldwin Ave	C	C	0.6	\$195,000				
36	Upcountry Haiku–Paia	Apana Road Makani Rd–Makawao Ave	C	C	0.5	\$163,000				
37	Upcountry Haiku–Paia	Kealaloa Avenue Makawao Ave–Hanamu Rd	C	C	1.2	\$391,000				
38	Upcountry Haiku–Paia	Hanamu Road Olinda Rd–Haleakala Hwy	C	B	1.3	\$65,000				
39	Upcountry Haiku–Paia	Olinda Road Makawao Ave–Hanamu Rd	C	B	1.0	\$50,000				
40	Upcountry Haiku–Paia	Pukalani Street Old Haleakala Hwy–Aina Lani Dr	C	C	1.6	\$521,000				
42	Upcountry Haiku–Paia	Lower Kula Road Kula Hwy–Kula Hwy	C	C					4.7	\$1,813,000
43	Upcountry Haiku–Paia	Future Kihei-Upcountry Connection Trail extension of Naalae Road	C	C					3.8	\$1,466,000
44	Upcountry Haiku–Paia	Naalae Road Kula Hwy–Kihei Connector	C	C	2.1	\$684,000				
46	Upcountry Haiku–Paia	Kula Highway Kekaulike Ave/Haleakala– Piilani Hwy	S	B	14.0	\$695,000				
47	Hana- East Maui	New Path on Railroad Right-of-Way Hana Bay–Wailua Gulch	C	C					8.7	\$3,356,000
48	Hana- East Maui	Piilani Highway Kula Hwy–Hana Hwy	S	A	36.9	\$135,000				
51	Kihei– Makena	South Makena Road Alanui Dr–Ahihi Bay	C	B	1.7	\$84,000				
52	Kihei– Makena	Wailea Alanui Dr– Makena Alanui Drive Okolani Dr–South Makena Rd	C	B			4.4	\$196,000		
64	Kihei– Makena	North Kihei Road Mokulele Hwy–Honoapiilani Hwy	C	B	3.5	\$174,000				

Island of Maui

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority III Proposals (Long-term)										
68a	West Maui	Kauaula Road Extension Honoapiilani Hwy– Honoapiilani Hwy Ext.	C	C	0.4	\$130,000				
68b	West Maui	Shaw Street Extension Honoapiilani Hwy– Honoapiilani Hwy Ext.	C	C	0.7	\$228,000				
77	West Maui	Lower Honoapiilani Road Lower Aloe Dr–Honoapiilani Hwy	C	B	5.2	\$258,000				
78	West Maui	Kahekili Highway Kaanapali Hwy–Wailuku	C	B	27.5	\$1,364,000				
Sub-total: Priority III Proposals					178.0	\$12,161,000	4.4	\$196,000	22.5	\$8,679,000
Priority III Mileage Distribution										
State					114.7	\$3,751,000	0.0	\$0	5.3	\$2,044,000
County					63.3	\$8,410,000	4.4	\$196,000	17.2	\$6,635,000
Other/Undefined					0.0	\$0	0.0	\$0	0.0	\$0
Priority IV Proposals (Contingent on Roadway Project)										
2	Wailuku– Kahului	Maui Lani (Various Internal Roads)	P/C	C			2.3	\$2,889,000		
22	Upcountry Haiku–Paia	Future Kihei–Upcountry Bypass Haleakala Hwy–Piilani Hwy	S	C	9.7	\$3,157,000				
49	Kihei– Makena	Piilani Highway Connector (So. Maui) End of Piilani Hwy–Piilani Hwy	C	C	3.3	\$1,074,000				
50a	Kihei– Makena	Future Connector Kula Hwy–Piilani Hwy	C	C	4.2	\$1,367,000				
50b	Kihei– Makena	Makena–Ulupalakua Extension	C	C	1.9	\$618,000				
65a	West Maui	Future Honoapiilani Greenway Maalaea–Papalaua State Wayside	S	B					5.0	\$1,288,000
65b	West Maui	Future Honoapiilani Highway Bypass Maalaea–Papalaua State Wayside	S	C	5.8	\$1,888,000				
67	West Maui	Future Lahaina Bypass	S	C	8.9	\$2,897,000				
69	West Maui	Future Bypass Connector Future Lahaina Bypass– Honoapiilani Hwy	S/C	C	1.0	\$326,000				
73	West Maui	Future Honoapiilani Greenway Ukumehame Beach Park–Front St	S	B					7.6	\$1,958,000

Island of Maui

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority IV Proposals (Contingent on Roadway Project)										
Sub-total: Priority IV Proposals					34.8	\$11,327,000	2.3	\$2,889,000	12.6	\$3,246,000
Priority IV Mileage Distribution										
State					24.4	\$7,942,000	0.0	\$0	12.6	\$3,246,000
County					9.4	\$3,059,000	0.0	\$0	0.0	\$0
Other/Undefined					1.0	\$326,000	2.3	\$2,889,000	0.0	\$0
Maui Total: All Proposals					261.5	\$31,612,000	13.3	\$3,996,000	62.4	\$22,251,000
Maui Mileage Distribution										
State					151.9	\$12,786,000	1.1	\$49,000	17.9	\$5,290,000
County					108.6	\$19,112,000	9.9	\$1,058,000	30.1	\$11,406,000
Other/Undefined					1.0	\$326,000	2.3	\$2,889,000	14.4	\$5,555,000

* Juris. (Jurisdiction)

S = State

C = County

F = Federal

P = Private

** Cost Class. (Cost Classification)

A = Minor improvements

B = Moderate improvements

C = Major improvements/new facility

Island of Molokai

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority I Proposals (Near-term)										
2	East	Kamehameha V Highway Mile 8 Marker–Mile 10 Marker	S	C	2.0	\$651,000				
3	Central	Kamehameha V Highway Intersection with Kalae Hwy– Mile 8 Marker	S	A	12.1	\$44,000				
4	Central	Farrington Avenue Puupeelua Ave–Kalae Hwy	S	B	2.4	\$9,000				
5	Central	Puupeelua Avenue Maunaloa Hwy–Farrington Ave	S	B	1.2	\$4,000				
6	West	Maunaloa Highway Kalae Hwy–Kaluakoi Rd	S	A	10.5	\$38,000				
7	West	Maunaloa Highway extension Kaluakoi Rd–Maunaloa (village)	S	B	1.7	\$84,000				
Subtotal: Priority I Proposals					29.9	\$830,000	0.0	\$0	0.0	\$0
Priority II Proposals (Mid-term)										
1	East	Kamehameha V Hwy Mile 10 Marker–End (Halawa Valley)	S	B	17.2	\$853,000				
Priority III Proposals (Long-term)										
8	West	Kaluakoi Road Maunaloa Hwy– Papohaku Beach Park	C	C	4.9	\$1,595,000				
Molokai Total: All Proposals					52.0	\$3,278,000	0.0	\$0	0.0	\$0
Molokai Mileage Distribution										
State					47.1	\$1,684,300	0.0	\$0	0.0	\$0
County					4.9	\$1,594,900	0.0	\$0	0.0	\$0

* Juris. (Jurisdiction)

S = State

C = County

F = Federal

P = Private

** Cost Class. (Cost Classification)

A = Minor improvements

B = Moderate improvements

C = Major improvements/new facility

Island of Lanai

Proposed Bicycle Facilities by Priority Level

Map No.	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
				Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority I Proposals (Near-term)									
2	Kaunalapau Highway Lanai Airport–Lanai Ave	S	B	2.7	\$134,000				
				2.7	\$134,000	0.0	\$0	0.0	\$0
Priority II Proposals (Mid-term)									
3	Manele Road Kaunalapau Hwy–Manele Bay	S	B	6.9	\$342,000				
4	Lanai Avenue Kaunalapau Hwy–Keomuku Rd	C	B	1.4	\$70,000				
				8.3	\$412,000	0.0	\$0	0.0	\$0
Priority III Proposals (Long-term)									
8	Keomuku Road Lanai Ave–Maunalei Pt (end of the road)	C	B	7.2	\$357,000				
				7.2	\$357,000	0.0	\$0	0.0	\$0
Lanai Total: All Proposals				18.2	\$903,000	0.0	\$0	0.0	\$0
Lanai Mileage Distribution									
State				9.6	\$476,000	0.0	\$0	0.0	\$0
County				8.6	\$428,000	0.0	\$0	0.0	\$0

* Juris. (Jurisdiction)

S = State

C = County

F = Federal

P = Private

** Cost Class. (Cost Classification)

A = Minor improvements

B = Moderate improvements

C = Major improvements/new facility

Island of Hawaii (Big Island)

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority I Proposals (Near-term)										
2	Hilo	Kilauea Avenue Waianuenue Ave–W. Puainako St	C	C			2.5	\$3,141,000		
7a	Hilo	Waianuenue Avenue Bayfront Hwy–Hilo Medical Center	C	C			1.9	\$2,237,000		
10	Hilo	Mohouli Street Komohana St–Kilauea Ave	C	C			1.0	\$1,256,000		
12a	Hilo	Komohana Street Waianuenue Ave–Ainaola Dr	C	C			3.1	\$3,894,000		
14	Hilo	Civic Center Loop– Aupuni/Pauahi Kilauea Ave–Kamehameha Ave	C	B			0.7	\$31,000		
15a	Hilo	Bayfront Highway Waianuenue Ave–Manono St	S	B			1.2	\$53,000		
15b	Hilo	Kamehameha Avenue Waianuenue Ave– Wailoa River Bridge	C	B			1.0	\$44,000		
18	Hilo	Kekuanaoa Street (Airport Access) Kanoelehua Ave–Hilo Airport	S	A			1.6	\$19,000		
20	Hilo	Kekuanaoa Street Kilauea Ave–Kanoelehua Ave	C	C			0.9	\$1,131,000		
21	Hilo	Manono Street E. Kawili St–Bayfront Hwy	C	C			1.2	\$1,508,000		
22	Hilo	E. Kawili Street Kilauea Ave–Kanoelehua Ave	C	B			0.5	\$22,000		
23	Hilo	W. Puainako Street Komohana St–Kinoole St	S	C			1.4	\$1,759,000		
24	Hilo	Kawailani Street Komohana–Kinoole St	C	B	1.3	\$65,000				
28	Hilo	Volcano Highway [Mamalahoa Highway] Kanoelehua Ave–Keaau-Pahoa Rd	S	A	3.0	\$11,000				
29a	Hilo	Railroad Avenue Leilani St (Hilo)–Kaaahi Rd/ RR Ave end	C	B			4.0	\$178,000		
29b	Puna	Railroad Avenue Bikeway Kaaahi Rd / RR Ave (end of pavement)–Hawaiian Paradise Park Subdivision	C/P	C					5.6	\$2,160,000

Island of Hawaii (Big Island)

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority I Proposals (Near-term)										
30a	Puna	RR Avenue Bikeway connection to Keaau schools complex RR Ave Bikeway– Keaau–Pahoa Bypass	C	C					0.5	\$193,000
32	Puna	Keeau–Pahoa Road Keaau–Pahoa Bypass Rd– Shower Dr	S	C	2.4	\$781,000				
35	Puna	Old Volcano Trail Volcano Hwy–S. Glenwood Rd– Kahikopele St–Puhala St–Olaa Rd	S	B					12.5	\$3,220,000
58a	Kona	Kuakini Highway Mamalahoia Hwy– King Kamehameha III Rd	S	B	3.5	\$174,000				
58b	Kona	Kuakini Highway King Kamehameha III Rd–Lako St	S	C	1.7	\$553,000				
58c	Kona	Kuakini Highway Lako St–Hualalai Rd	C	C			2.3	\$2,889,000		
60a	Kona	Walua Road Pedestrian and Bicycle Scenic Route– North Extension Lako St–Alii Drive	C	C					3.0	\$1,157,000
60b	Kona	Walua Road Pedestrian and Bicycle Scenic Route– South Extension End of Walua Rd–Old Mamalahoia Hwy	C	C					0.3	\$116,000
65	Kona	Alii Drive Improvements Palani Rd–Keauhou Rd	C	B	5.7	\$283,000				
68	Kona	Queen Kaahumanu Extension Henry St–Kuakini Hwy	S	A	2.5	\$9,000				
70c	Kona	Keanalehu Drive Kealakehe Pkwy– Kealakehe Pathway	C	B			0.8	\$34,000		
76b	Kona	Kealakehe Parkway Queen Kaahumanu Hwy– Keanalehu Dr	S	B			0.7	\$31,000		
81a	Kona	Separate path adjacent and parallel to Queen Kaahumanu Highway Makala St–Keahole Airport	S	C					6.2	\$2,392,000
83	Kona	Queen Kaahumanu Highway Waikoloa Rd–Kealakehe Pkwy	S	A	18.2	\$67,000				

Island of Hawaii (Big Island)

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority I Proposals (Near-term)										
89	Waimea-Kohala	Waikoloa Bikeway Paniolo Ave	C	B			1.7	\$74,000		
92a	Waimea-Kohala	Akoni Pule Highway Kawaihae-Mahukona Wharf Access Rd	S	A	12.9	\$47,000				
92b	Waimea-Kohala	Akoni Pule Highway Mahukona Wharf Access Rd-Hawi Rd	S	A	6.5	\$24,000				
96a-c	Waimea-Kohala	Waimea Trails and Greenways Various segments	C/P	C					9.0	\$3,472,000
Sub-total: Priority I Proposals					57.7	\$2,014,000	26.4	\$18,301,000	37.1	\$12,710,000
Priority I Mileage Distribution										
State					50.7	\$1,666,000	4.9	\$1,862,000	18.7	\$5,612,000
County					7.0	\$348,000	21.5	\$16,439,000	3.8	\$1,466,000
Other/Undefined					0.0	\$0	0.0	\$0	14.6	\$5,632,000
Priority II Proposals (Mid-term)										
3	Hilo	Kapiolani/Hualalai Streets Waianuenue Ave-Hualalai St	C	A	1.0	\$4,000				
4	Hilo	Ponahawai Street Komohana St-Kapiolani St	C	C			1.0	\$1,256,000		
5	Hilo	Kukuau Street Komohana St-Kapiolani St	C	B			0.8	\$36,000		
11	Hilo	Kumukoa Street/W. Lanikaula Street/ E. Lanikaula Street Kukuau St-Kanoelehua Ave	C	B			2.3	\$102,000		
16	Hilo	Banyan Drive/Lihiwai Street Around Golf Course	C	C					1.4	\$540,000
17	Hilo	Hualani/Operations/Silva Streets Kanoelehua-Kalaniana'ole Ave/Hilo Harbor	C/S	B	1.3	\$65,000				
19	Hilo	Piilani Street Manono St-Kanoelehua Ave	C	B	0.4	\$20,000				
25	Hilo	Haihai Street Ainaola Rd-Kinoole St	C	A	1.6	\$6,000				
26	Hilo	Kinoole Street Waianuenu Ave-Haihai St	C	B			3.9	\$173,000		

Island of Hawaii (Big Island)

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority II Proposals (Mid-term)										
27	Hilo	Pohaku or E. Makaala Street Ohuohu/Ahuna/Awa/ Pau O Palae-RR Ave	C	C	3.5	\$1,139,000				
29c	Puna	Railroad Avenue Bikeway Hawaiian Paradise Park Subdivision-Hawaiian Beaches & Shores Subdivision	C/P	C					6.8	\$2,623,000
30b	Puna	Various local roads and off-road paths Keaau Town	C/P	C					2.0	\$772,000
31a	Puna	Old Keaau-Paho Road Volcano Hwy-Keaau-Paho Bypass	S	C	1.1	\$358,000				
31b	Puna	Old Keaau-Paho Road Remnant	C	B	0.5	\$25,000				
33	Puna	Shower Dr/Pohaku Dr/Olaa/40th Kaaahi Road-Volcano Hwy	P/C	C	5.4	\$1,758,000				
34	Puna	Paradise Acres-9 Road / C Road / Kulani Road 9 Rd-Volcano Hwy near Mountain View	P/C	C	5.6	\$1,823,000				
36a	Puna	N. Puna Corridor-Paradise (or Makuu) Drive Hawaiian Paradise Pk- Keaau-Paho Rd	P/C	C	4.2	\$1,367,000				
36b	Puna	North Puna Corridor-Mauka Keaau-Paho Rd-I I Rd	P/C	C	3.7	\$1,204,000				
36c	Puna	North Puna Corridor-D Road / Rose Street 9 Rd-D Rd-Plumeria St- Pikake St-Puhala St	P/C	C	4.1	\$1,335,000				
36d	Puna	S. Glenwood Road-Fern Forest Volcano Hwy-S. Glenwood Rd- Old Volcano Trail	P/C	C	0.8	\$260,000				
37a	Puna	Ala Hele O Puna (going north) Hawaiian Beaches/Shores Subdivision-Hawaiian Paradise Park Estates	C	C	6.1	\$1,985,000				
37b	Puna	Ala Hele O Puna (going south) Hawaiian Beaches/Shores Subdivision-Jct. Paho-Kapoho Rd	C	C	5.2	\$1,693,000				
38	Puna	Kahakai Boulevard, mauka- makai corridor Railroad Ave-Paho schools complex	C	C	4.0	\$1,302,000				

Island of Hawaii (Big Island)

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority II Proposals (Mid-term)										
39	Puna	Ag Road/Kehau Road Railroad Ave (Waiakahiula)– Nanawale Blvd to Pahoa–Kapoho Rd	C	C	3.8	\$1,237,000				
40	Puna	Pahoa–Kapoho Road Volcano Hwy–Pahoa Coast	C	A	7.2	\$26,000				
41	Puna	Lighthouse Road Pahoa–Kapoho Rd– Kumukahi Lighthouse	C	C	1.6	\$521,000				
44	Puna	Kapoho–Kalapana Beach Road Pahoa–Kapoho Rd– Keaau–Pahoa Rd	C	A	15.0	\$55,000				
45	Puna	Old Kalapana Highway Remnants	C?	C					4.5	\$1,736,000
46	Puna	Pahoa–Kalapana Highway Kapoho–Kalapana Rd– Keaau–Pahoa Rd	C	A	9.0	\$33,000				
47a	Puna	Volcano Highway [Mamalahoa Highway] Keaau–Pahoa Bypass– Hawaii Volcanoes National Park	S	A	23.2	\$85,000				
47b	Puna	Volcano Village Collector Roads (Shoulder Improvements) Wright Rd (Hwy 11–Laukapu Rd) Haunani Rd (Hwy 11–Laukapu Rd)	C	B			1.6	\$79,000		
59	Kona	Haawina Road Kuakini Hwy–Old Mamalahoa Hwy	C	C	0.2	\$65,000				
61	Kona	King Kamehameha III Road Kuakini Hwy–Alii Dr	C	C	1.4	\$469,000				
62	Kona	Connections between subdivisions south of Kailua Komohana Kai Subdivision– Kona Sea View Subdivision	C/P	C	1.2	\$378,000				
66	Kona	Lunapule Road Alii Dr–Waluia Rd	C	C	0.3	\$81,000				
67	Kona	Hualalai Road Old Mamalahoa Hwy–Kuakini Hwy	C	C	3.8	\$1,230,000				
69	Kona	Old Mamalahoa Highway Jct. Palani Rd–Honalo	C	A	10.5	\$38,000				
72	Kona	Makala Street Kuakini Hwy (Old Kona Airport)– Queen Kaahumanu Hwy	C	C	0.5	\$173,000				

Island of Hawaii (Big Island)

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority II Proposals (Mid-term)										
73	Kona	Old Airport Coastal Path Old Kona Airport–Noio Pt/ Honokohau Harbor	C/P	C					2.3	\$887,000
74	Kona	Utility Easement Road Wastewater Treatment Plant– Honokohau Harbor	C	C					2.2	\$853,000
81b	Kona	Separate path adjacent and parallel to Queen Kaahumanu Highway Keahole Airport–Akoni Pule Hwy	S	C					26.0	\$10,029,000
85a	Kona	Palani Road Queen Kaahumanu Hwy– Hina Lani Dr	C	C	3.4	\$1,107,000				
85b	Waimea–Kohala	Mamalahoa Highway Hina Lani Dr– Waimea-Kohala Airport	S	A	33.3	\$122,000				
86	Waimea–Kohala	Old Mamalahoa Highway Remnants South of Waimea	S?	C					2.4	\$1,852,000
88	Waimea–Kohala	Waikoloa Road Waikoloa Village– Queen Kaahumanu Hwy	C	B	11.6	\$576,000				
93	Waimea–Kohala	Akoni Pule Highway Hawi–Halaula	S	B	7.9	\$392,000				
94	Waimea–Kohala	Kohala Mountain Road Waimea–Hawi	S	B	19.3	\$958,000				
95a	Waimea–Kohala	Old Kawaihae Road (north of Kawaihae Road) Akoni Pule Hwy–Powerline Rd	C	C					3.1	\$1,184,000
95b	Waimea–Kohala	Old Kawaihae Road (south of Kawaihae Road) Powerline Rd–Waimea Greenway	C	C					5.1	\$1,948,000
98a	Waimea–Kohala	Kawaihae Road Akoni Pule Highway–Mile 58	S	A	9.0	\$33,000				
98b	Waimea–Kohala	Kawaihae Road/ Mamalahoa Highway Laelae Rd (Mile 58)– Kekehau/Kipu Upuu	S	B	5.6	\$278,000				
99	Waimea–Kohala	Waiaka Bridge Jct. Kohala Mountain Rd & Kawaihae Rd	S	C						

Island of Hawaii (Big Island)

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority II Proposals (Mid-term)										
100	Waimea-Kohala	Mamalahoa Highway Mile 1-Waimea-Kohala Airport	S	C	1.7	\$557,000				
102	Waimea-Kohala	Mud Lane Past Kamuela Lakeland; Mamalahoa Hwy-Waipio Valley	C/P	C					5.8	\$2,218,000
103	Honokaa	Honokaa-Waipio Road Honokaa-Waipio	S	A	9.5	\$35,000				
106a	Honokaa	Old Mamalahoa Highway Lakeland-Mamalahoa Hwy	S?	C	10.2	\$3,307,000				
106b	Honokaa	Kupuna Road Old Mamalahoa Hwy- Mamalahoa Hwy	C	C					1.4	\$548,000
Sub-total: Priority II Proposals					237.7	\$26,100,000	9.6	\$1,646,000	62.9	\$25,190,000
Priority II Mileage Distribution										
State					110.6	\$2,818,000	0.0	\$0	26.0	\$10,029,000
County					90.6	\$11,785,000	9.6	\$1,646,000	13.2	\$5,073,000
Other/Undefined					36.4	\$11,497,000	0.0	\$0	23.8	\$10,088,000
Priority III Proposals (Long-term)										
1	Hilo	Hawaii Belt Road Honokaa-Hilo	S	A	39.0	\$142,000				
6	Hilo	Rainbow Drive Loops off Waianuenue Ave	C	C	1.7	\$553,000				
7b	Hilo	Waianuenue Avenue Hilo Medical Center-Akolea Rd	C	C	1.4	\$456,000				
8	Hilo	Akolea Road Kaumana Dr-Waianuenue Ave	C	A	1.9	\$7,000				
9a	Hilo	Kaumana Drive Waianuenue Ave-Akolea Rd	C	C	3.7	\$1,204,000				
9b	Hilo	Kaumana Drive Saddle Rd-Akolea Rd	C	A	0.4	\$2,000				
13	Hilo	Ainaola Road Haihai St-Kawailani St	C	B			1.0	\$45,000		
29d	Puna	Railroad Avenue Bikeway Hawaiian Beaches & Shores Subdivision-Kapoho-Kalapana Beach Rd	C/P	C					6.5	\$2,507,000

Island of Hawaii (Big Island)

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority III Proposals (Long-term)										
37c	Puna	Koae Access Railroad Path/Kaaahi Rd– Ala Hele O Puna	C	C					0.8	\$309,000
42	Puna	Pahoa–Kapoho Powerline Trail Pahoa–Kapoho Rd– Pahoa–Kalapana Rd	C/P	C					2.8	\$1,080,000
43	Puna	Kapoho–Kalapana Ridge Trail Off Pahoa–Kapoho Rd– Kamoamo Hmstds	C/P	C					8.1	\$3,125,000
48	South Hawaii	Mamalahoa Highway Hawaii Volcanoes National Park– Capt Cook Village Rd	S	A	82.3	\$301,000				
49	South Hawaii	South Point Road Hawaii Belt Rd–Ka Lae (South Point)	C	C	11.7	\$3,808,000				
50	South Hawaii	Kamaoa Road South Point Rd–Mamalahoa Hwy	C	C	4.0	\$1,302,000				
51	Kona	Keala o Keawe Mamalahoa Hwy–Puuhonua Rd	C?	C	4.0	\$1,286,000				
52	Kona	Puuhonua Road Middle Keel Rd–Honaunau Bay	C	C	3.4	\$1,100,000				
53	Kona	Painted Church Road Keala O Keawe–Middle Keel Rd	C	C	1.8	\$589,000				
54	Kona	Middle Keel Road Mamalahoa Hwy–Puuhonua Rd	C	C	3.6	\$1,182,000				
55	Kona	Napoopoo Road Mamalahoa Hwy–Middle Keel Rd	C	C	2.6	\$840,000				
56	Kona	Alii Drive Extension Lekeleke Bay–Kealakekua Bay	C	C					5.3	\$2,044,000
57a	Kona	Old RR ROW–makai of Kuakini Highway Kuakini Hwy–terminus	C	C					6.0	\$2,311,000
57b	Kona	Old RR ROW–mauka of Kuakini Highway Hualalai Rd–Kuakini Hwy	C	C					2.7	\$1,042,000
63	Kona	Mamalahoa Highway Capt Cook Village Rd– Old Mamalahoa Hwy	C	B	4.4	\$218,000				

Island of Hawaii (Big Island)

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority III Proposals (Long-term)										
70a	Kona	Keanalehu Trail Palani Road–Hualalai Rd	C	C					2.6	\$1,018,000
76a	Kona	Kealakehe Parkway (makai extension) Queen Kaahumanu Hwy–Honokohau Harbor	C	C	1.1	\$358,000				
77	Kona	Old government road mauka of Mamalahoa Highway	C	C					4.3	\$1,643,000
79	Kona	Hina Lani Drive Queen Kaahumanu Hwy–Old Mamalahoa Hwy	C	A	3.5	\$13,000				
80	Kona	Old Airport Coastal Path Honokohau Harbor–U.H. Research Lab (OTEC)	C	C					6.3	\$2,430,000
82	Kona	Utility corridor at 1500' elevation mauka of Queen Kaahumanu Highway	C	C					2.5	\$964,000
87	Waimea–Kohala	Saddle Road Mamalahoa Hwy–Hilo	S	A	45.7	\$167,000				
90	Waimea–Kohala	Powerline Road Old Kawaihae Rd–Waikoloa Rd	C/P	C					7.4	\$2,866,000
91	Waimea–Kohala	Old Puako Road and Puako Beach Drive Hapuna Beach Rd–Holoholokai Beach Pk	C/P	C					9.0	\$3,456,000
104a	Honokaa–Hamakua	Lower Cane Haul Road Waipio–Honokaa	C/P	C					8.0	\$3,074,000
104b	Honokaa–Hamakua	Lower Cane Haul Road Honokaa–Homula	C/P	C					7.9	\$3,055,000
105	Honokaa–Hamakua	Coastal Connector Road (Standard Oil Road) Haina–Honokaa–Waipio	C/P	C	1.9	\$618,000				
106c	Honokaa–Hamakua	Old Mamalahoa Highway Paauhau Road–Kalopa Gulch	S?	C					2.9	\$1,115,000
106d	Honokaa–Hamakua	Old Mamalahoa Highway Puuala Ranch–Waipuahina Gulch	S?	C					2.4	\$926,000
106e	Honokaa–Hamakua	Old Mamalahoa Highway Waipuahina Gulch–Paauilo	S?	C					0.8	\$309,000
106f	Honokaa–Hamakua	Old Mamalahoa Highway Waikaumalo–Hakalau Bay	S?	C					4.2	\$1,620,000

Island of Hawaii (Big Island)

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority III Proposals (Long-term)										
106g	Honokaa-Hamakua	Old Mamalahoa Highway Hakalau Bay-Kolekole Beach Park	S?	C					2.3	\$887,000
106h	Honokaa-Hamakua	Old Mamalahoa Highway Honomu-Pepeekeo	S?	C					3.0	\$1,157,000
106i	Honokaa-Hamakua	Old Mamalahoa Highway Pepeekeo-Onomea	S?	C					6.8	\$2,623,000
106j	Honokaa-Hamakua	Old Mamalahoa Highway Papaikou-Paukaa, Kulana Kea Dr	S?	C					2.6	\$1,003,000
106k	Honokaa-Hamakua	Wainaku Wainaku-Pueo (Hilo Town)	C	C					2.2	\$849,000
Sub-total: Priority III Proposals					216.7	\$14,146,000	1.0	\$45,000	107.4	\$41,413,000
Priority III Mileage Distribution										
State					167.0	\$610,000	0.0	\$0	0.0	\$0
County					43.8	\$11,632,000	1.0	\$45,000	32.7	\$12,610,000
Other/Undefined					5.9	\$1,904,000	0.0	\$0	74.7	\$28,803,000
Priority IV Proposals (Contingent on Roadway Project)										
12b	Hilo	Nowelo Komohana-UH Hilo Expansion Area	C	C						
64	Kona	Proposed Ke Ala o Keauhou (Kahului-Keauhou Parkway) Queen Kaahumanu Hwy-Lako Street	C	C			3.1	\$1,009,000	3.1	\$1,196,000
70b	Kona	Keanalehu Drive Kealakehe Pathway-Palani Road	C	C			0.6	\$779,000		
71	Kona	Future Keohokalole Highway Kealakehe Pkwy-Queen Kaahumanu Hwy	C	C			2.2	\$2,764,000		
75	Kona	Kealakaa Connector Kealakehe Pathway-Kealakaa Street	C	C			0.6	\$766,000		
76c	Kona	Kealakehe Parkway extension Kanalehu Drive-Kealakaa Street	C	C			1.3	\$1,633,000		
76d	Kona	Kealakehe Parkway extension Kealakaa-Palani Road	S	C			0.7	\$879,000		
78	Kona	Future Kealakaa Street Kealakehe Parkway-Kealakehe Parkway	C	C			4.0	\$5,025,000		

Island of Hawaii (Big Island)

Proposed Bicycle Facilities by Priority Level

Map No.	Region	Facility Location	Juris.*	Cost Class.**	Signed Shared Road		Bike Lane		Shared Use Path	
					Length (mi)	Cost Estimate	Length (mi)	Cost Estimate	Length (mi)	Cost Estimate
Priority IV Proposals (Contingent on Roadway Project)										
97	Kohala	Future Waimea Bypass Akoni Pule Highway– Mamalahoa Hwy	S	C	18.3	\$5,956,000				
101	Waimea	Future Waimea Highway Bypass—Path	S	C					3.9	\$1,504,000
Sub-total: Priority IV Proposals					18.3	\$5,956,000	12.5	\$12,855,000	7.0	\$2,700,000
Priority IV Mileage Distribution										
State					18.3	\$5,956,000	0.7	\$879,000	3.9	\$1,504,000
County					0.0	\$0	11.8	\$11,976,000	3.1	\$1,196,000
Hawaii Total: All Proposals					530.4	\$48,216,000	49.6	\$32,847,000	214.4	\$82,013,000
Hawaii Mileage Distribution										
State					346.7	\$11,050,000	5.6	\$2,741,000	48.6	\$17,145,000
County					141.4	\$23,765,000	44.0	\$30,106,000	52.7	\$20,345,000
Other/Undefined					42.3	\$13,401,000	0.0	\$0	113.0	\$44,523,000

* Juris. (Jurisdiction)

S = State

C = County

F = Federal

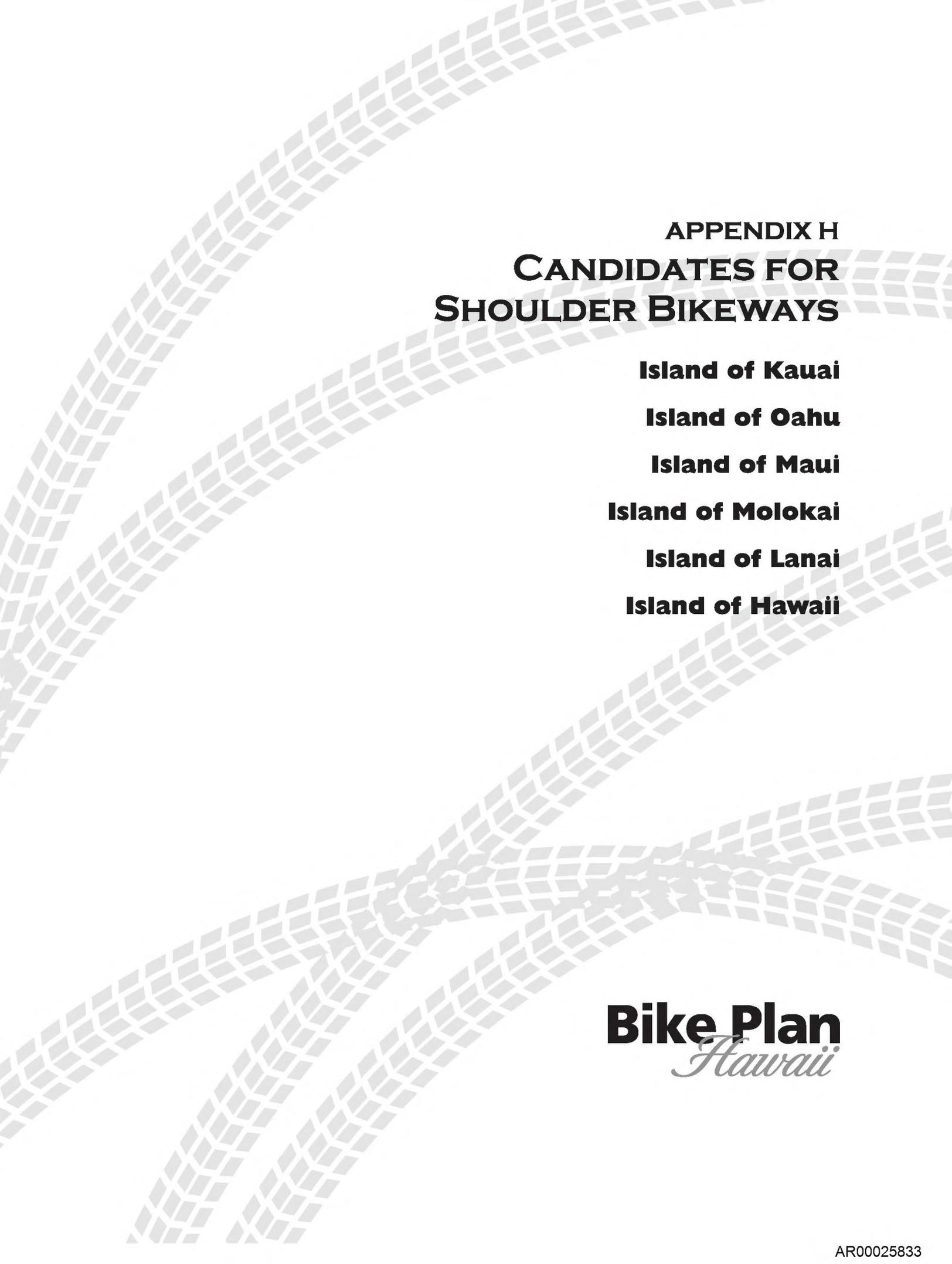
P = Private

** Cost Class. (Cost Classification)

A = Minor improvements

B = Moderate improvements

C = Major improvements/new facility



APPENDIX H
CANDIDATES FOR
SHOULDER BIKEWAYS

Island of Kauai

Island of Oahu

Island of Maui

Island of Molokai

Island of Lanai

Island of Hawaii

Bike Plan
Hawaii

Candidates for Shoulder Bikeways

(November 7, 2002)

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Kauai							
5	Kuhio Highway Kilauea–Anahola	Signed Shared Road	S	A	9.9	\$36,100	II
6	Kuhio Highway Kealia–Anahola	Signed Shared Road	S	A	3.2	\$11,700	II
20b	Ahukini Road Kapule Hwy–State Recreation Pier	Signed Shared Road	S	B	1.8	\$89,300	II
36	Hulemalu Road Puhi Rd–Niumalu Rd	Signed Shared Road	C	A	1.9	\$6,900	II
37	Waapa Road Niumalu Rd–Nawiliwili Beach	Signed Shared Road	C	A	1.2	\$4,400	III
48	Kaumualii Highway Hanapepe–Maluhia	Signed Shared Road	S	A	8.6	\$31,400	I
50	Halewili Road Kaumualii Hwy–Kaumualii Hwy	Signed Shared Road	S	A	3.9	\$14,200	III
53a	Kaumualii Highway Mana Rd–Kekaha	Signed Shared Road	S	A	9.9	\$36,100	II
53b	Kaumualii Highway Kekaha–Hanapepe	Signed Shared Road	S	A	7.3	\$26,700	II
Kauai Total					47.7		
Oahu							
2	Kamananui Road Kamehameha Hwy–Wilikina Dr	Signed Shared Road	S	B	1.2	\$51,800	III
7a	Kamehameha Highway Haleiwa Bypass–Wilikina Dr	Signed Shared Road	S	B	8.8	\$379,600	III
7b	Kamehameha Highway Wilikina Dr–Kuahelani Ave	Signed Shared Road	S	B	2.7	\$116,500	III
11	Kunia Road Anonui St–Wilikina Dr	Signed Shared Road	S	B	8.0	\$344,700	III
91	Kalaniana'ole Highway Kailua Rd–Olomana Golf Links	Signed Shared Road	S	A	2.6	\$8,200	II
95	Kalaniana'ole Highway Makapuu–Sandy Beach	Signed Shared Road	S	A	2.2	\$7,000	I
96	Kalaniana'ole Highway Sandy Beach–Lunalilo Home Rd	Signed Shared Road	S	A	2.6	\$8,300	II
Oahu Total					28.1		

Candidates for Shoulder Bikeways

(November 7, 2002)

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Maui							
15	Kuihelani Highway Puunene Ave–Honoapiilani Ave	Signed Shared Road	S	A	5.3	\$19,400	III
23	Haleakala Highway Hana Hwy–Piilani Hwy	Signed Shared Road	S	B	7.5	\$372,100	III
41	Haleakala Highway Kula Hwy–Kekaulike Ave	Signed Shared Road	S	B	9.2	\$456,400	II
46	Kula Highway Kekaulike Ave/Haleakala– Piilani Hwy	Signed Shared Road	S	B	14.0	\$694,500	III
48	Piilani Highway Kula Hwy–Hana Hwy	Signed Shared Road	S	A	36.9	\$134,700	III
Maui Total					72.9		
Molokai							
3	Kamehameha V Highway Intersection with Kalae Hwy– Mile 8 Marker	Signed Shared Road	S	A	12.1	\$44,200	I
4	Farrington Avenue Puupeelua Ave–Kalae Hwy	Signed Shared Road	S	B	2.4	\$8,800	I
5	Puupeelua Avenue Maunaloa Hwy–Farrington Ave	Signed Shared Road	S	B	1.2	\$4,400	I
6	Maunaloa Highway Kalae Hwy–Kaluakoi Rd	Signed Shared Road	S	A	10.5	\$38,300	I
7	Maunaloa Highway extension Kaluakoi Rd–Maunaloa (village)	Signed Shared Road	S	B	1.7	\$84,300	I
Molokai Total					27.9		

Candidates for Shoulder Bikeways

(November 7, 2002)

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Lanai							
1	Keomuku Road Lanai Ave–Maunalei Pt (end of the road)	Signed Shared Road	C	B	7.2	\$357,200	III
2	Kaumalapau Highway Lanai Airport–Lanai Ave	Signed Shared Road	S	B	2.7	\$133,900	I
Lanai Total					9.9		
Hawaii							
1	Mamalahoa Highway Honokaa–Hilo	Signed Shared Road	S	A	39.0	\$142,400	III
8	Akolea Road Kaumana Dr–Waianuenue Ave	Signed Shared Road	C	A	1.9	\$6,900	III
17	Hualani/Operations/Silva Streets Kanoelehua–Kalanianaʻole Ave/ Hilo Harbor	Signed Shared Road	C	B	1.3	\$64,500	II
18	Kekuanaoa Street (Airport Access Road) Kanoelehua Ave–Hilo Airport	Signed Shared Road	C	A	1.6	\$5,800	II
19	Piilani Street Manono St–Kanoelehua Ave	Signed Shared Road	C	B	0.4	\$19,800	I
28	Volcano Highway [Mamalahoa Highway] Kanoelehua Ave–Keaau–Pahoa Rd	Signed Shared Road	S	A	3.0	\$11,000	I
47	Volcano Highway [Mamalahoa Highway] Keaau-Pahoa Bypass–Hawaii Volcanoes National Park	Signed Shared Road	S	A	23.2	\$84,700	II
48	Mamalahoa Highway Hawaii Volcanoes National Park– Jct. Kuakini Hwy (Kona)	Signed Shared Road	S	A	86.7	\$316,600	III
68	Queen Kaahumanu (Extension) Henry St–Kuakini Hwy	Signed Shared Road	S	A	2.5	\$9,100	I

Candidates for Shoulder Bikeways

(November 7, 2002)

Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi)	Cost Estimate	Priority Level
Priority I Proposals (Near-term)							
79	Hina Lani Drive Queen Kaahumanu Hwy– Old Mamalahoa Hwy	Signed Shared Road	C	A	3.5	\$12,800	III
83	Queen Kaahumanu Highway Waikoloa Rd–Kealakehe Pkwy	Signed Shared Road	S	A	22.1	\$80,700	I
92a	Akoni Pule Highway Kawaihae Rd–Mahukona Wharf Access Rd	Signed Shared Road	S	A	12.9	\$47,100	I
92b	Akoni Pule Highway Mahukona Wharf Access Rd– Hawi Rd	Signed Shared Road	S	A	6.5	\$23,700	I
Hawaii Total					204.6		
Statewide Total					391.1		

Hawaii Bike Plan Update Community Participation Program

Kimura International, Inc.

Purpose and Objectives

The Hawaii Bike Plan Update will revise the existing statewide bike plan (completed in 1994) and bring currency to a document that guides improvements in bicycling facilities across the state. The planning team is committed to developing a plan that responds to citizen needs and preferences, represents community consensus, and recognizes the limitations of public resources. A proactive community participation program is vital to producing a clear, workable plan. The community participation program seeks to maximize public involvement through a range of actions, as outlined below.

The objectives of this program are to ensure that Hawaii residents are informed about the planning process and given opportunities to provide meaningful input. The program is also intended to comply fully with the following mandates:

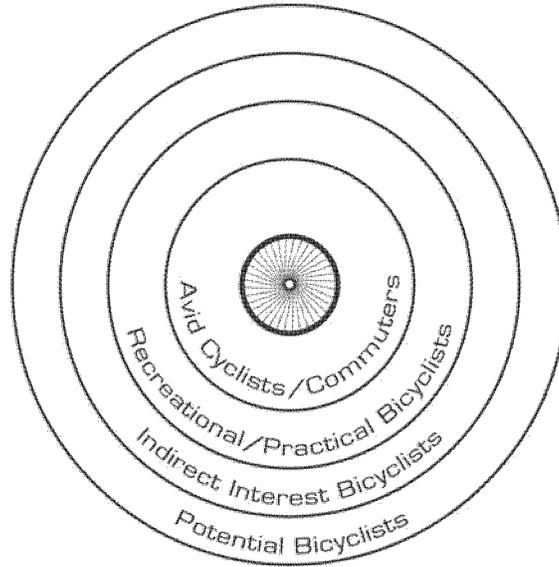
- Title VI of the Civil Rights Act of 1964 which provides that no person in the United States shall, on the grounds of race, color, or national origin be excluded from participation in, or be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving federal financial assistance.
- Executive Order 12898 (issued February 11, 1994) addresses Environmental Justice relative to minority and low-income populations.

Stakeholders

By citizen participation, we recognize that there are varying levels of public interest in bicycling and bicycle facilities. The diagram below illustrates different levels of stakeholding from those with the highest interest at the core of the diagram to those with only a latent interest at the periphery. Core stakeholders are typically those who become most involved in the planning process—and it's likely to be the case with the Hawaii Bike Plan Update—but the aim of the citizen participation program is to expand the reach of planning activities so that people in the outer rings will be engaged as well.

- (1) Avid cyclists and bicycle enthusiasts, as well as bicycle commuters. Members of this group are often members of organized bicycling interest groups. Also included in this group are bicycling-oriented businesses (e.g., specialty bike retailers, bike repair shops, bike rentals, and bike tours).
- (2) Recreational bicyclists who regularly bicycle as a leisure activity and may use the bicycle for nearby errands and other practical purposes.

- (3) Persons who have an indirect interest in bicycling—including parents, schools, and business owners (whose customers may use bicycles and are therefore concerned about bicycle safety and convenience or, possibly, a “ bicycle problem”).
- (4) Potential bicycle riders who may be encouraged to ride if it is perceived to be a safer, more enjoyable activity.



Different Levels of Stakeholding within the General Public

Information and Notification

Information and notification efforts are intended to stimulate interest in the planning process, keep the public apprised of its progress, and invite people to specific events. We will use a variety of media because people get information in many ways, and not necessarily from mainstream sources.

- (Official) newspaper notices of upcoming public meetings. While these notices will appear in the major newspapers, additional announcements may be placed in community and/or foreign-language papers, as appropriate.
- Notices on the Hawaii Bike Plan Update website. If possible, a brief notice will be placed on the Hawaii State Government homepage or calendar page (with hyperlink to the Hawaii Bike Plan Update webpage).
- Request that upcoming meetings be announced at neighborhood board meetings.
- Request that bicycling groups make announcements at their meetings, in their newsletters, and/or on their website (with hyperlink to the Hawaii Bike Plan Update webpage).

- Flyers and/or posters at bicycling-related venues (such as bike shops).
- Mail invitation to all persons on attendance sheets from earlier meetings.
- Feature article(s) in the newspaper (e.g., the Honolulu Advertiser’s weekly section on Commuting).
- Public service announcements (PSAs) on radio and/or TV (to be initiated by State DOT)
- Distribute information at major bicycling events (e.g., Century Ride, Haleiwa Metric Ride), with assistance of local bicycling groups.

Input and Feedback

Input and feedback efforts are aimed at gaining information that will be used to formulate and revise the bike plan. Input and feedback are desired from as broad and diverse a population as possible. At the same time, we recognize the expertise that core stakeholders can offer, particularly in their knowledge of conditions on the ground.

- Community meetings at geographically dispersed areas of the state, and scheduled at times convenient to the public. The first round of meetings will give an overview of the planning process, but also feature activities in which participants can address concerns about the existing bicycle network and propose improvements. The second round of meetings will examine the connection between previous public input and the draft plan, and seek public reaction to the plan’s findings and recommendations.
- Bicycle Users Survey – random telephone survey with sample size sufficiently large to enable survey findings to be generalized to the project population (residents of suburban and rural Oahu, Kauai, Maui, and the Big Island) at a 95% confidence level.¹
- Meetings with leaders of the bicycling community (key informants) and referral to others.
- Orientation bike ride with representatives of bicycle groups.
- Feedback feature or mini-survey on the Hawaii Bike Plan Update website.

¹ Originally, the Bicycle Users Survey was conceived as a mail survey that would be sent to a sample of registered bicycle owners. However, because of confidentiality, the lists of bicycle registrants were not released by County governments.



**ROUND 1
COMMUNITY
MEETINGS-WORKSHOPS**

Bike Plan
Hawaii

Record of Community Workshop 1

All Venues

The first round of community meetings/workshops were held between November 1-15, 2001 and in Molokai on February 28, 2002. Collectively, these meetings drew 159 attendees. The proceedings of each workshop are documented below. Participants were also asked to complete a questionnaire at the workshop. Findings from the workshop survey are reported in the Surveys section of this Supplemental Volume.

Schedule of Community Workshops (all workshops held in 2001, except Molokai)

Thursday	November 1	Conference Room at Ihilani Marriott Leeward Oahu	7:00-9:00 pm
Saturday	November 3	UH Komohana Agricultural Complex, Conference Room Hilo, Hawaii	9:00-11:00 am
Saturday	November 3	Kalani Honua Rainbow Room Puna, Hawaii	2:00-4:00 pm
Monday	November 5	Parker Ranch Town Hall Waimea, Hawaii	6:00-8:00 pm
Tuesday	November 6	King Kamehameha Hotel Conference Room, Kona, Hawaii	7:00-9:00 pm
Wednesday	November 7	War Memorial Convention Hall Lihue, Kauai	6:30-8:30 pm
Thursday	November 8	Wailuku Community Center Wailuku, Maui	6:00-8:00 pm
Tuesday	November 13	Kaneohe Community & Senior Center, Windward Oahu	6:30-8:30 pm
Wednesday	November 14	Aina Haina Elem School Cafetorium East Honolulu	6:30-8:30 pm
Thursday	November 15	Mililani Mauka Elem School Cafetorium, Central Oahu	6:30-8:30 pm
Thursday	February 28, 2002	Mitchel Pauole Center Kaunakakai, Molokai	6:00-7:30 pm

Workshop Proceedings

In each instance, the workshop began with an introduction by Vincent Llorin, State Bicycle and Pedestrian Coordinator, Department of Transportation. He welcomed the audience and introduced the consultants from the firms of Kimura International, Inc. and Sprinkle Consulting, Inc.

Glenn Kimura presented a Powerpoint slideshow that provided an overview of Bike Plan Hawaii with discussion of the following topics:

- Elements of the plan addressing the 5 “E”s—engineering, education, enforcement, economics, and encouragement
- Why the plan is important
- Scope of the plan
- The planning process
- Results of the 1994 Plan
- Description of existing bicycling conditions
- Planning efforts in other states
- Different types of bicycle facilities
- Considerations and criteria in planning new bikeways

After the presentation, members of the audience were given an opportunity to raise questions or offer comments. Following the Q&A session, Glenn Kimura reviewed maps of the region showing existing bikeways, those constructed since the 1994 Plan, and proposed bike projects from the 1994 Plan (not yet implemented). The next phase of the workshop was structured as an informal charrette, in which participants were asked to mark their bikeway proposals directly on printed maps. Depending on the total number of participants, one or more small groups were formed for this exercise.

The following items are from the Q&A session and the mapping exercise at each venue.

Leeward Oahu November 1, 2001

Workshop Participant: How do bike paths relate to new roads? For example, when Farrington Highway is repaved from Kapolei to Ewa, will it be widened to accommodate bicycles?

Response from Vince Llorin, State Bicycle Coordinator: The State DOT makes an effort to put in bike and pedestrian facilities with new road construction.

Response from Chris Sayers, City Bicycle Coordinator: The current plan is to add shoulders when Farrington Highway is widened (from two lanes to four lanes), but there is no timetable yet for this project.

Comment from Georgette Yaindl, Hawaii Bicycling League: The recently adopted OMPO 2025 Transportation Plan includes a policy statement, that any project in the plan

shall include bike and pedestrian improvements. New roadway design or safety improvements must consider all modes of transportation.

Workshop Participant: What is the 2025 Plan?

Georgette Yaindl: This plan is developed by the regional planning organization. It recommends the priority transportation projects to the State DOT—not just roadways—where they want to see federal funds spent. Although the plan forecasts out 25 years, it is updated periodically.

Workshop Participant: Were developments on Young Street coordinated with future bikeway improvements? Young Street is one of the proposed bike thoroughfares between university and downtown. When the sidewalk fronting the new park was put in (at the old police station site), was that coordinated with C&C to accommodate bicycles?

Chris Sayers: The City just hired a consultant (Belt Collins) to work on the Young Street bike project. The proposal for a Young Street Park Boulevard was included in the Honolulu Bicycle Master Plan as part of the Lei of Parks. It's unlikely that the Young Street bike project will require removal of any improvement constructed for the new park.

Workshop Participant: If the goal is to use bikes as a mode of transportation, shouldn't bikeways connect residents to business districts (workplaces)? I would like to see improved bikeways between Kapolei and Waipahu via Farrington Highway, and from Kapolei to Ewa Beach; between residential areas and employment centers at Kalaeloa and Campbell Industrial Park.

Workshop Participant: Essex Road would be a wonderful spur off the Leeward Bike Trail where families could hit the beach; otherwise, you're water-less all the way to Nanakuli. The Navy has concerns about errant golf balls from the golf course. But if the public comes forward and says it's a favorable project, the Navy might entertain the proposal and open Essex Road just for non-vehicular traffic.

Comment from City Councilmember Gary Okino: People don't know what the rules are—how fast bicycles can go, how to signal. People have told me that there are tremendous conflicts on sidewalks—bikes are on sidewalks right in the middle of town. There is a tendency to focus on cars and bikes, but we also need to address potential conflicts between pedestrians and bikes, where the situation is not clear.

Response from Charlie Denney, Sprinkle Consulting, Inc.: National bike design guidelines state that bikes should **not** be on the sidewalks. It's difficult for pedestrians and bikes to mix. The Bike Plan will clarify bike usage on sidewalks. But if bikes are not allowed on sidewalks, then we need to provide safe alternatives elsewhere. If a bicyclist has to choose between an unsafe road or the sidewalk, he's going to choose the sidewalk. He knows that he's going to win the conflict with pedestrians, but lose the conflict with cars. We need to educate all the users on how to interact.

Workshop Participant: A safe bike route is needed from Ko Olina to Kapolei. Also, a bike route from Kapolei to Fort Weaver Road via Farrington Highway, with hook-up to

Waipahu. I use a mountain bike on the existing Leeward railroad right-of-way to get to the bike trail in Waipahu.

Workshop Participant: Schools are critical because it conditions young people to ride bikes and look at bikes as an alternate mode of travel.

Gary Okino: Problem (with providing bikeways) is not so much in new areas, but in older areas. In certain areas, schools don't have safe bike routes that can be used by students

Charlie Denney: If you're going to encourage bicycling to school, you need to take a look at the area around the school. Communities in some states have started to look at "Safe Routes to School" and allocated money to do this.

Chris Sayers: I used to teach Bike Ed and there's inconsistency across schools. Some schools had policies that allowed bicycling and others didn't. Iroquois Point—probably has a hundred bikes.

Gary Okino: Iroquois Point is an exceptional case because the base can enforce a 20 mph speed limit.

Charlie Denney: Or if they can ride to school, the problem may be a lack of storage areas.

Workshop Participant: So there's no regular bike education?

Glenn Kimura: It's inconsistent across the state. The City and County of Honolulu has an active BikeEd program. But in other counties, they've discontinued the formal BikeEd program because there's no funding, or the police department tries to patch together bike workshops on an ad hoc basis.

Gary Okino: We (at the City) are also trying to address subdivision regulation, so when we build a new community, we also build in the capacity for bicycles.

Glenn Kimura: If it's on the map that everybody has, it should send up red flags, that whenever a developer comes in, they'll know that a bikeway has been proposed in the area.

Workshop Participant: There's no way for bicyclists to get to the deep-draft harbor which is where any private ferry service is likely to be located (until the marina is constructed). When ferry service was offered as a pilot project, there was no way of getting down to the harbor by bike. Geiger Road and Roosevelt don't go all the way through.

Workshop Participant: Because the Ewa region is constantly changing, there should be legislation that institutes a policy whereby the bike network grows as the region grows. It should be part of the infrastructure in place to support development.

Workshop Participant: Suggest constructing a bikeway on Mango Road, which is an agricultural road now used by farmers; DLNR also has access. Mango Road intersects with the proposed North-South collector. This area is not hindered by discovery of a threatened plant species. It's ideal. The road goes under Fort Weaver Road and provides access to Asing Park which is fully developed with courts and ball fields. The underpass is a drainage culvert that may be unusable during the 100-year flood, but would be okay the rest of the time.

Charlie Denney: Culverts have been used in other areas, with the foreknowledge that it won't be available during rainy periods.

Workshop participants expressed agreement that the No. 1 priority for the region is completion of the Leeward Bike Trail.

Vince Llorin: Initially the project design was going to be done in-house, but that branch is understaffed, so it's going to a consultant contract. Expect to start construction in 2004.

Workshop Participant: Extending the Leeward coastal trail beyond Nanakuli would be beneficial for eco-tourism.

Workshop Participant: Another high priority is Farrington Highway since it provides the most direct route between Kapolei and Waipahu. We need to acquire the right-of-way now (for a parallel bike path) before the corridor gets developed.

Georgette Yaindl: We also need to ask, "What is it like when get to the destination?" Ordinances should require bike parking, similar to requirements for cars.

Workshop Participant: Kapolei is becoming dangerous with the mix of bikes, cars, and buses (especially the long articulated buses). More kids riding bikes. On Kamokila Boulevard in Kapolei, cars park in designated bike lanes, creating an obstacle for riders. Similarly, the bus transit center (across from Zippys) means that buses sometimes park in the bike lane.

Chris Sayers: There's a plan to build a bus transit center behind the theaters.

Georgette Yaindl: Enforcement would be improved with more bike patrols. It's difficult to get officers out of their car to enforce relatively minor traffic infractions.

Hilo, Hawaii November 3, 2001

Workshop Participant: The Big Island is distinct because of the large land area and low population. It is still in its infancy in terms of tourism. We should take advantage of building infrastructure now—acquire easements and rights-of-way. It's unlike Oahu where you have to put bikeways in developed areas. The Bike Plan is important to first identify future bikeways, then we can work to gain easements.

Workshop Participant: We should make bikeways a condition of development.

Workshop Participant: There needs to be better integration of modes so you can bike to a transit node and transfer onto buses, and also support facilities, such as lockers and cages.

Workshop Participant: Ever seen bike lockers at airports?

Response by Charlie Denney, Sprinkle Consulting, Inc.: Not at airports, but we're seeing lockers more and more at transit stations. At the transit station near where I live, there's a waiting list. U.S. Environmental Protection Agency has also done a lot with lockers to promote bicycling. To maximize locker use, they don't assign the lockers. Instead, there's a separate box with keys that can be taken out on an ad hoc basis. Office buildings sometimes have a cage within a secured area—something that's done a lot.

Workshop Participant: One of the issues raised at other transportation meetings is that passengers are assessed a penalty for taking bike on airplanes. Even if you show up below the baggage limit, you're still charged \$25.

Charlie Denney: That's a national issue. On the mainland, you're charged \$50.

Participant: Except here air travel is the only choice. We don't have option of taking a bus or ferry.

Puna District, Hawaii

November 3, 2001

Three citizens came to the Puna workshop, including two who had participated in the Hilo workshop earlier in the day. Because their proposals for the Puna region had been documented already, the workshop was canceled.

Waimea, Hawaii

November 5, 2001

Workshop Participant: Will the bike plan include any kind of legislative recommendation, such as requiring developers to provide bike and pedestrian facilities?

Response by Glenn Kimura: We will address this issue in terms of possible implementation measures. For example, some Counties are considering bikeways as a condition of zoning or subdivision. More generally, the Bike Plan will include policy recommendations. Another important area is bicycle education. When you ask people why they don't bike, a common response is that it's unsafe.

Workshop Participant: What about adding questions on bicycling on the drivers test?

Response by Charlie Denney, Sprinkle Consulting, Inc.: That's a good idea. A number of states have started to include bicycle-related material in drivers' instruction manuals.

Workshop Participant: Are you also working with shopping centers and other businesses to provide adequate storage?

Charlie Denney and Glenn Kimura: There's a fair amount of research on what types of racks work best. We will be including that information in the design guidelines section of the plan.

Workshop Participant: Are skateboards, roller blades, and scooters ("Razors") considered bicycles? Will they be able to use bicycle facilities?

Charlie Denney: On a shared-use or mixed-use path, it would be okay—depending on issues of speed, volume of users, and safety. On roadways, they're not allowed, though some jurisdictions have changed their ordinance to make exceptions to allow certain types of non-vehicular use.

Glenn Kimura: On a mixed-use path, there should be clear signage about how different modes or types of users relate to each other. Some people we have talked to feel strongly

that bells should be mandatory for bicycles. Problems arise when common courtesies aren't practiced.

Workshop Participant: The 1994 Bike Plan shows a bike route on the main road through town (Highway 19), but when the roadway was recently expanded from 5 lanes to 6 lanes, we were told that there was insufficient room for a bike lane and there's even inadequate shoulder space. One response we've gotten from officials is that the proposed Waimea Trails and Greenway will serve bicyclists, but that won't always provide the most convenient connection to schools and shopping centers.

Glenn Kimura: We want to make clear in the Bike Plan the idea that bicycling is an alternate mode of transportation. Bicyclists want the most direct routes to get to their destinations, just like motorists.

Charlie Denney: Places that have been successful in getting more people to bicycle have used a mix of all three types of facilities—bike routes, bike lanes, and off-road bike paths—that allow people to get the places they want to go.

Kailua-Kona, Hawaii November 6, 2001

Workshop Participant: Why does Hawaii's plan address bikes only, and not pedestrians? Can we expand the plan to include pedestrians also? For example, since pedestrian signs are in many of the same places and for the same purposes as bicycle signs, it seems to make sense to address both modes at the same time, rather than just bikes.

Response by Vince Llorin, State Bicycle Coordinator: Right now, the consultant's contract is just to update the bicycle plan.

Response by Charlie Denney, Sprinkle Consulting, Inc.: Some states have done just bike plans, while others include both bikes and pedestrians. We will be addressing some pedestrian facilities where there is overlapping use. We're limited at this point in time, but the plan could be expanded to include pedestrians in the future.

Workshop Participant: Can that be part of our input tonight? We would like the plan to address multi-modal issues.

Response by Glenn Kimura: The Bike Plan will address shared use by both bikes and pedestrians; for example, to promote walking along Kaahumanu Highway. We want to include proposals that make sense and are safe. On the Big Island, there are many places that don't have sidewalks, and pedestrians have to walk somewhere.

Charlie Denney: On the flip side, over the weekend, I biked along Alii Drive and this is a situation where you have the potential for conflicts between bicycles and pedestrians since there are no shoulders on the roadway and everybody is sharing the sidewalk. So we also recognize the need to balance the needs of the different modes.

Workshop Participant: I have a question about the bikeway standards you'll consider in the plan. There are many areas that are not yet open to cars and it may be too expensive to build roadways to standard specifications. For example, it may be possible to acquire right-of-way, on contour, to connect some of the subdivisions. Since your presentation says "no mountain trails"—are you going to exclude possibilities for facilities that are

functional and suitable for rural areas? Will the plan only consider facilities that will be paved out?

Glenn Kimura: Our intent is to be as open and flexible as possible.

Charlie Denney: If facilities are making connections, they can be designated as part of the state's bicycle network, but it may be difficult to get federal transportation funds if not built to standards. On the other hand, if you're talking about roads that don't need pavement or improvement, then maybe you don't need federal funding.

Participant: Everything here needs grading and clearing, and would be as expensive as a mainline trail. Is ADA also a factor as far as access? Some of the linkages I'm referring to might not be feasible to develop if we need to meet ADA accessibility standards.

Charlie Denney: There are guidelines that have been put out by the U.S. Access Board, an arm of the Justice Department charged with implementing the Americans with Disabilities Act. There are standards for sidewalks, trails, and recreational facilities. The law says you have to make reasonable accommodations. It might also be possible to satisfy the ADA requirement by providing an alternate route.

Workshop Participant: For people interested in road racing, Queen Kaahumanu Highway is the place that's most commonly used to train for road events. Did the 1994 plan include any improvements on Queen K? Did the old plan include provide for places (training sites) other than Queen K?

Charlie Denney: The best type of improvement is widening the shoulder to at least four feet, and the State has already done that on Queen K. But there are other places where you just won't be able to do this, so it's a question of getting as much shoulder as you can. And where there's a steep grade, putting a shoulder in on one side.

Response by Ann Peterson, Peoples Advocacy for Trails Hawaii (PATH): PATH has advocated a 10-foot, grade-separated, multi-use path alongside Queen K. We lost part of a railroad alignment to a golf course because it was not designated on the master plan. Let's not be constrained by money right now because it's not only Transportation Enhancement funds that can build these kinds of things; we can look in other places and build gradually. Let's think big.

Glenn Kimura: Following up on Ann's comment, there are a variety of ways to implement the plan. For example, if a route is shown on the plan, it might get built as part of a highway repair or repaving project.

Workshop Participant: Even if you have a 4-foot shoulder, around here it doesn't take long for that shoulder to become totally degraded.

Glenn Kimura: This plan will address maintenance. The plan won't be limited to bike routes, but will be comprehensive.

Workshop Participant: Do we need to be concerned with distinguishing between State and County roads?

Glenn Kimura: No, because the plan will address both.

Participant: Did the County adopt this plan as well?

Glenn: I don't know the answer to that question; however, we talked to the County Council, and members alluded to the General Plan that's being updated and a desire to incorporate the Bike Plan.

Workshop Participant: Isn't there a federal requirement that when federal highway funds are used, there must be a 3-foot shoulder? One of the biggest problems we have is that even if there's a shoulder, all of a sudden, in critical spots, it drops down to one foot. One of my biggest complaints is that there's no consistency.

Charlie Denney: In the short term, there may be places where you just can't put in wider shoulders, for example, because of topography and other physical constraints. But one of the things you can do is to put up signs warning "reduced shoulders" or "bicyclists sharing road ahead." The key is not to let the situation just happen, but to alert all road users about what's happening ahead and give them ample notice to make adjustments.

Participant: I'm trying to get more people to ride their bikes, but they won't if the roads aren't safe.

Workshop Participant: I think we're preaching to the choir. Everybody here would like to have bike corridors all around the island. We all want safe places for our families to bike. We thank you for coming and we're behind you.

Workshop Participant: I understand that your contract is to come up with a plan, but we want to make it happen, so whose feet can we hold to the fire?

Charlie Denney: The plan will make recommendations for implementation. Also, one of the reasons we're asking for your top 3 priorities is to provide a focus for implementation efforts.

Glenn Kimura: The Bike Plan falls under the larger State Transportation Plan and is subject to its procedures for funding and implementation.

Ann Peterson: The County has come up with a plan to develop a network of mid-level and connector roads between Keahole and Kailua. Will those roads have bike and pedestrian facilities?

Glenn Kimura: Peter Young, Deputy Mayor, has provided a map showing the proposed roads in the K to K plan. He also mentioned the possibility of developing multi-use paths along utility easements.

Ann: We need to be sensitive about who owns the land whenever we talk about off-road paths.

Glenn: There's also the issue of which agency will be responsible for maintenance of off-road facilities, with the available equipment and budgets.

**Lihue, Kauai
November 7, 2001**

Workshop Participant: Does "shared bike path" mean share with runners and walkers?

Response by Glenn Kimura: Yes.

Response by Charlie Denney, Sprinkle Consulting, Inc.: Ten feet is the minimum design width for shared-use paths; but if many different types of users are expected, then it should be even wider.

Workshop Participant: How are State funds allocated among the counties?

Glenn Kimura: The Bike Plan is part of a statewide transportation planning process which involves the STIP (State Transportation Improvement Program), a list of the high-priority transportation projects. The Bike Plan will contain separate bike improvement proposals by county, but the normal course of implementation goes through a more politically oriented phase of evaluation and lobbying and leads to the STIP.

Comment by John Tanner, Bicycle John: The best thing to do at this stage is to imagine that you'll get whatever you want. Funding and cost considerations aren't too important at the planning level. Right now, we want to pull together our ideas for what we want, and the order we want them. Once we give this input to the planners, it becomes a grass-roots Kauai effort, working with local officials, to find the funds needed to realize the projects.

Comment by Glenn Kimura: I want to stress that in order to qualify for federal funds, proposals need to be included in an official master plan and this is your opportunity to do that. We're also looking at projects that are implemented through the normal cycle of road repair and resurfacing. It's often possible to acquire bike facilities through road widening that is almost incidental to road repair or safety upgrades.

Charlie Denney: Over time, the pieces will begin to fit together and connect up.

Workshop Participant: Will the plan identify which type of facility (lane, route, path) will go where?

Glenn Kimura: Paths are essentially facilities that go off-road. In terms of choosing between routes and lanes, we'll take the community's preferences into consideration. But we'll also evaluate whether it's do-able given possible physical constraints, and if it makes sense in terms of technical feasibility and cost.

**Wailuku, Maui
November 8, 2001**

Workshop Participant: The 4-foot standard for shoulders seems to be inadequate along roadways with high traffic volumes and high speeds.

Response by Charlie Denney, Sprinkle Consulting, Inc.: Along high-speed highways, 5- or 6-foot shoulders may be needed for a bikeway to be workable.

Response by Vince Llorin, State Bicycle Coordinator: Four feet is the minimum requirement in the AASHTO Guidelines, accepted by most states and the Federal Highway Administration.

Charlie: There are quantitative methods to evaluate the consequences (comfort level to bicyclists) of increasing pavement width. If limited right-of-way means you have to choose where to widen the shoulder, then it would seem more beneficial to widen the uphill side where the speed differential between cars and bicycles is greater.

Workshop Participant: Are there any plans for Kahului to Paia area?

Response by Dave DeLeon, Mayor's Bicycle Advisory Committee: There is a multi-phase plan, part of which is already built—the airport section. There's still a question about when the Sprecklesville section will be completed.

Workshop Participant: Maintenance is the worst I have seen—the sweeper just moves debris around. No matter how many bike trails there are, you'll still need to ride on the streets. But if you hit glass going at high speed, a blow-out could be very dangerous. Contrast this with Wailea, where you can practically eat off the road. Another problem is that roads aren't properly compacted and patched after utility connections are made.

Response by Glenn Kimura: We hear you loud and clear. The same message has been repeated by all the bicycling groups we've talked to. On Oahu, bicyclists are posting photos of poor road conditions on the web to build awareness.

Workshop Participant: When do you expect the draft plan to be completed?

Glenn Kimura: We're going to be back in the spring for a second workshop. We won't have a plan *per se*—with all the parts—but we'll have the key parts and ask for your feedback.

Workshop Participant: Since this is a federal plan, how soon will we have access to federal funds?

Glenn Kimura: You don't have to wait until this update is done. Bikeway proposals are already in the existing Bike Plan. If you want to push a project, you can do that right now. The State is continually putting together priority lists of transportation projects to be funded and built through the STIP process, and you can work to get bike projects on the list. Likewise, Counties don't have to wait for the State. They can seek funding independently.

Workshop Participant: What is the situation with highway improvements in the Kihei area?

Vince Llorin: On Piilani Highway, the shoulder is being replaced by a travel lane, and the intent is for the North-South Connector to provide an alternate bike facility.

Glenn Kimura: Timing is a problem with the replacement bike facility.

Participant: But if federal funds are being used, isn't the State required to provide a bicycle facility?

Charlie Denney: Nationwide, nobody has pushed that issue it all the way. There's no precedent we can point to.

Workshop Participant: How do we get politicians and planners to buy into the healthy city idea and create more bicycle-friendly communities? How did a place like Oregon develop such an extensive bike network?

Charlie Denney: When Oregon started in the 1970s, it wasn't because of top-down mandates from their State DOT. The legislature was pushed by advocates and constituents who educated politicians about the economic benefits (such as the ability to attract visitors and businesses that want a favorable location to recruit and keep good employees). There was a firm looking to relocate to Virginia. Coming from Boulder, Colorado, they asked: "Where are the bicycle facilities?" The company ended up going to Ashland, North

Carolina which has bike facilities. The plan can give you tools to work with but, ultimately, implementation has got to be a grassroots effort.

Workshop Participant: It's amazing that nobody evaluates who's going where to find out how to link segments. We want circuits that eventually connect one subdivision to another, then another, then another—like in Southern California.

Glenn Kimura: One of the things we'll do in the plan is pay attention to traffic generators.

Workshop Participant: How do we go from here (the planning process) to practice (implementation)?

Vince Llorin: Whenever DOT has a resurfacing project, and there are adequate funds, we provide shoulders. Most of the State highways on Maui have shoulders wide enough to accommodate bicycles.

Charlie Denney: If the proposal is in the plan, it has feet. Then it has to become a priority, and that push has to come from the community.

Workshop Participant: Why aren't more people here? With numbers, things happen. Why isn't there a plea in the paper to urge people to register their bikes?

Glenn Kimura: The Big Island is an example of a place where bike advocates are organized by region. They've developed projects and mounted sustained efforts to get them built.

Workshop Participant: Besides shoulders, we also want to see greenways around the island. We now have the best opportunity to talk about greenways because the focus is on how to make communities more pedestrian- and bike-oriented. Maui's ears are open. Maui is having to deal with serious congestion and is looking seriously at smart growth. So now is a good time to put bikeways on the map. But then the hard work begins. The General Plan is going to be updated next year, the community plans are going to start up again, and the smart growth idea is taking off. Now's the time to make a push.

Comment by Charlie Denney: It can be prudent to bring in pedestrians. Politicians are going to relate more to pedestrians because they do it. Sometimes people have a negative impression of bicycles, and you can break the ice by talking about pedestrians.

Windward Oahu November 13, 2001

Workshop Participant: You mentioned educating bicyclists, but what about educating motorists?

Response by Glenn Kimura and Vince Llorin: You're absolutely correct that part of the education process must deal with motorists. There are several measures that could be taken. One is to have more public service announcements and ads, such as the full-page newspaper ad that came out during November's Bike Safety Month. Another is to add bike items to drivers' licensing exam. It doesn't make sense for Hawaii drivers to be tested on rail crossings, but not on interactions with bicyclists.

Workshop Participant: Besides talking about what routes are needed, shouldn't we also talk about the mechanisms for implementation? I know that when there's a State roadway project, it has to take into consideration (and incorporate) what's in the Bike Plan.

However, we also have the case of Waimanalo where community members questioned why they needed to have bike lanes when all that was needed to satisfy the Bike Plan was to put up a few signs. If that's all that's required, nothing much is going to happen. The Bike Plan ought to have more teeth than just saying you should throw up signs.

Glenn Kimura: In Waimanalo, the community was ambivalent between bike lanes and bike routes. But when they learned that additional right-of-way had to be acquired for bike lanes, they felt that bike routes (paved shoulders) would be sufficient. Other improvements, such as left-turn pockets, would improve traffic flow and safety through the area.

Workshop Participant: I guess six years isn't enough time to see projects implemented.

Glenn Kimura: Actually, when you drive around the state, you see many miles of State highways that have wide shoulders in good conditions. They would serve perfectly well as bike routes, but they're not signed. If they were marked as a bicycle facility, the State could get more mileage credit relatively easily.

Vince Llorin: DOT evaluates a whole set of standards before designating a bike route, but if those criteria are met, we'll put up the signs.

East Oahu

November 14, 2001

Workshop Participant: Is the bike plan looking at traffic calming?

Response by Glenn Kimura: No, that's a separate effort, but we are paying attention to some of the same goals, such as safe access to schools.

Workshop Participant: How was 3-foot separation between bicyclist and motorist determined (as shown on the newspaper ad for Bike Safety Month)? It doesn't seem wide enough, plus people misjudge and go closer.

Response by Vince Llorin, State Bicycle Coordinator: The 3-foot separation is a recommended practice. It's not a traffic law in Hawaii, but it may be in other states.

Response by Chris Sayers, State Bicycle Coordinator: Bus drivers are instructed to give bicyclists a full lane—3 feet puts buses in the next lane anyway.

Central Oahu

November 15, 2001

There were no questions or comments during the Q&A session; therefore, participants proceeded directly to the mapping portion of the agenda.

Kaunakakai, Molokai
February 28, 2002

Workshop Participant: Why are there no shoulders beyond the 8-mile marker? The roads were recently repaved, and the shoulders were improved up to the 8-mile marker. The pavement should have been expanded between Miles 8 and 10 at the same time—this would have covered a section of the highway that is well-used because it's in a more populated area. It appears that there's adequate right-of-way up to Mile 10.

Response by Vince Llorin: He will check on the history of the work done and get back to the inquirer.

Asked about the usefulness and desirability of signs:

- Signs are a waste of money. Just having more bikes on the road will make people realize there's more bicycling activity. People will ignore "share the road" signs. They're either polite drivers or not.
- A few signs wouldn't hurt.
- There's a tendency for signs to disappear or get shot at.
- Limit signs to areas where roads are narrow and have to be shared by bikes and cars, or to high-visibility places.
- In one section of Kalae Highway, there are a lot of signs packed within a short distance. We don't want that kind of sign pollution.

Asked about the highest priority area for bike improvements, there was general consensus within the group:

- Priority for bike improvements should be on the east side of Molokai, which is relatively flat and scenic.
- When visitors come to Molokai, and they don't have much time, we first send them out to the east side.
- Shoulders don't have to be a full 4 feet to be useful for bicycling. If there's enough room for the mowers (to keep the landscaping in check), there should be some room for bicycles.
- Out near Kilohana Elementary School (Mile 13), kids are using the roads for bikes and roller skates—a potentially hazardous situation.
- There are a couple of major organized events that use the east-west corridor. In the case of the tandem bike ride, there were 44 cyclists this year; last year there were 160.

Community Workshops (Round 1) November 2001				
Attendance Summary				
Date	Location	Attendees	Plan Team	Completed Questionnaires
Thurs, Nov. 1	Leeward Oahu	8	5	3
Sat, Nov. 3	Hilo	15	5	14
Sat, Nov. 3	Puna	4	5	0
Mon, Nov. 5	Waimea	20	5	16
Tues, Nov. 6	Kailua-Kona	38	5	30
Wed, Nov. 7	Lihue	16	5	12
Thurs, Nov. 8	Wailuku	15	5	15
Tues, Nov. 13	Windward Oahu	7	4	6
Wed, Nov. 14	East Oahu	11	4	8
Thurs, Nov. 15	Central Oahu	20	3	16
Thurs, Feb. 28, 2002	Molokai	5	3	4
	Total	159		124

Attendance Sheet
Public Information Meeting and Workshop

Thursday, November 1, 2001
Ko Olina Marriott Conference Room, Leeward Oahu
7:00 - 9:00 pm

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
Tom BERG	REP. ESPERO'S OFFICE		
George Yamamoto	NB 34		
TYLER YAMASHITA			
LYN ANDERSON	HBL		
SHAO KANG	NB 34		
GARY OKUO	CITY COUNCIL		
Georgette Yaindl	HBL		
Chris Sayers	City & County of Honolulu		
Vincent Lorin	State DOT		
Glenn Kimura	Kimura International		
Nancy Nishikawa	Kimura International		
Kevin Purcell	Kimura International		
Charles Denney	Sprinkle Consulting		

Attendance Sheet
Public Information Meeting and Workshop

Bike Plan Hawaii—Update

Saturday, November 3, 2001

UH Komohana Agricultural Complex, Conference Room, Hilo, Hawaii

9:00 – 11:00 a.m.

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
Paul Yadao			
STANLEY TAMURA	DOT-HWAYS		
Takashi Domigao for Councilman James Arakaki	County Council		
BEN ISHII	DPW-ENGL		
John Luchau	P.A.T.H. Puna Trails (mail)		
ROBERTA BAKER	MORRELLY		
MICHAEL TANABE	UHH		
JOHN TANABE			
TAIRA YOSHIMURA	PATH		
Jon OLSON	PUNA COMMUNITY COUNCIL		
JOHN BARNES			
CHRISTOPHER SEYMOUR	BIG ISLAND MOUNTAIN BIKE ASSOCIATION		
Michael Shintake	UHH		
Rowan Polson	community		
Mac Cooper	SMA		

Attendance Sheet
Public Information Meeting and Workshop
 Bike Plan Hawaii—Update
 Monday, November 5, 2001
 Parker Ranch Town Hall
 6:00 – 8:00 p.m.

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
Keith Wallis			
Janet Lam			
CLEMSON LAM	WAIMEA TRAILS GR		
ANNE FIELD-GOMEZ	COMM ASSN POL		
Lynn Taylor	Trails & Waimea Green		
Pete Hendricks	WAIMEA COMMON ASSN		
Peggi Kamisato	Waimea Trails & Greenway		
Bill McCourt	Hawaiiana Heritage		
STAN SITUCS	WAIMEA TRAILS		
Jim Lotter	Waimea Trails		
Stanley Tamura	State DOT		

Attendance Sheet
Public Information Meeting and Workshop
Bike Plan Hawaii—Update
 Monday, November 5, 2001
 Parker Ranch Town Hall
 6:00 – 8:00 p.m.

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
Danman Coan	CES CUTFITTER		
Grant Mitchell	Mauna Kea Mt Parkers		
Greg Wirth	KECK OBS		
Peter Cook	Waimoa Cmty Assn		
GRANT MATSUSHIGE	CFAT CORP		
JOHN ROMOA	waimoa com. ct. youth council		
BRIAN BREAKSTONE	PO Box 188		
Chama Cascade	American Cascade		
Jason Root →			

Attendance Sheet
Public Information Meeting and Workshop
 Bike Plan Hawaii—Update
 Tuesday, November 6, 2001
 King Kamehameha Hotel, Meeting Room, Kailua-Kona, Hawaii
 6:00 – 8:00 p.m.

Josephine Kelupio HIPA

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
<i>Ann Petersons</i>	<i>PATH</i>		
<i>Mary Osborne</i>	<i>HAWAII CYCLING CLUB</i>		
<i>Barbara Bush</i>	<i>PATH</i>		
<i>Susan Golden</i>	<i>Self</i>		
<i>Alex Alcantar</i>			
<i>Candy Stephens</i>			
<i>Hayden Stephens</i>			
<i>Keola Childs</i>			
<i>Daryn Arai</i>	<i>COH Planning</i>		
<i>Kiran Emler</i>	<i>COH Pub. Works</i>		
<i>Sue Carroll</i>			
<i>Julia Daniels</i>			
<i>Beth Almondoune</i>			
<i>Miles Sullivan</i>			
<i>DAVE STUBBS</i>	<i>Resident Local</i>		
<i>GRANT Miller</i>	<i>Path</i>		
<i>Janet Miller</i>	<i>Path</i>		
<i>David Hedig</i>	<i>Hawaii Cycling Cl</i>		
<i>A. Kawvach</i>			
<i>Michael Hess</i>	<i>PATH</i>		

ERNIE FRASCATI PATH
KAREN BROWNE PATH *>*

Attendance Sheet
Public Information Meeting and Workshop
 Bike Plan Hawaii—Update
 Tuesday, November 6, 2001
 King Kamehameha Hotel, Meeting Room, Kailua-Kona, Hawaii
 6:00 – 8:00 p.m.

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
Donald Allison	West Hawaii L.		
Gregory Luck	Bikeabout.net		
Aivik Kiel	Orididise bicycling.com		
Krishna Mack			
Deborah L. Chang	Ø		
JOHN LITTLE	PARKS + Rec		
Jana Mugford			
JEFF McDevitt	PATH/TREE		
Guy Hughes			
D. Johnson	PATH		
Lesley + Rick McDaniel			
JEFFREY McDANIEL	N/A		
Marni Herber	KKCC 339-1700		
Frank Sayre	PATH		
Stanley Tamura	State DOT		

Attendance Sheet
Public Information Meeting and Workshop
 Bike Plan Hawaii—Update
 Wednesday, November 7, 2001
 War Memorial Convention Hall, Lihue, Kauai
 6:30 – 8:30 p.m.

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
Pages Seeds	Bike Rider		
Doug Harsh	County		
TERRY TAYLOR	RIDER		
Jon Schlegel	USDA, NRCS		
Steven Kyono	POT-HWY		
Stevan Yee	Rider		
MARJORIE KEITH	RIDER		
James Ehle	Rider (Road)		
Ben Welborn	Land Planner		
Jon Wichman	Rider / ^{Hawaii} ROADS _{Committee}		
Dan Doherty	WASH WYNN		
MICHAEL FURUKAWA	Grove Farm Co.		
Tom Shigemoto	ALB Properties, Inc.		
John Tanner	Bicycle John		
Ken Sapling	Paradise Ride Malama Pono		

Attendance Sheet
Public Information Meeting and Workshop
 Bike Plan Hawaii—Update
 Thursday, November 8, 2001
 Wailuku Community Center, Wailuku, Maui
 6:00 – 8:00 p.m.

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
Dan Cohen		96768	
Walter Enomoto	Mayor's Bicycle Advisory Comm		
Dave DeLeon	" "		
Fred Loosberg			
Dave Boothe	West Maui Cycles		
Scott Campbell	WEST MAUI CYCLES		
Cory Yamashita	County of Maui		
Janet Powell	Safe Comm. of Maui President		
JOE BERTMAN	Bikeways Maui		
Ferdinand Cajigas	DOT - Maui		
ANNON ANTONIO	" "		
Cynthia Sweet			
Mittie Arakawa	DPWMM		

Attendance Sheet
Public Information Meeting and Workshop
 Bike Plan Hawaii—Update
 Wednesday, November 14, 2001
 Aina Haina Elementary School, Cafetorium
 6:30 – 8:30 pm

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
Digna Leone	Star Bulletin		
THOMAS Reppuhn	HBL		
KALPANA TATA	HBL		
GWEN SINCLAIR	HBL/SIERRA CLUB		
RON Tolleson			
ROBIN BOND			
chris Sayers	DTS		
Suzanne Kōy	Honolulu		
Natalie Iwano			
Jayne Kim	Eki Cycling		
CLIFFORD CHONG			

Attendance Sheet
Public Information Meeting and Workshop
 Bike Plan Hawaii—Update
 Thursday, November 15, 2001
 Mililani Mauka Elementary School, Cafetorium
 6:30 – 8:30 pm

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
Peter Lucas	Mililani Middle School		
Mark Mila	Student		
Scott Kobayashi	Student		
Mitchell Caputo	Student		
Stephen Albano	"		
CHANTELLE WAKUMURA	student		
MARTIN KIM	—		
Jaimie Kim	student		
Jamie Ochiro	student		
Emmalia Dacalio-Spencer	Student		
Pamela Yang			
Chris Sayers	DTS		
NEIL TAKEDA	RESIDENT		
Colby Takeda	Resident		
Quinn Takeda	student		
James Burke	cycl e enthusiast		
David Bremer	resident-cyclist		
Jenni Wneda	Student		
Brian Prentice	Student		
Jennifer Nakata	NB# 35		

Bike Plan Hawaii

State of Hawaii Department of Transportation
Federal Highway Administration

Public Information Meeting and Workshop

Wednesday, November 14, 2001
Aina Haina Elementary School, Cafetorium, East Oahu
6:30 pm

Agenda

1. Introduction 6:30-6:40 pm
Vince Llorin, State DOT, Project Manager
2. Project Description and Background Information 6:40-7:00 pm
Glenn Kimura and Nancy Nishikawa, Kimura International, Inc.
Charles Denney, Sprinkle Consulting, Inc.
3. Questions and Comments 7:00-7:20 pm
 - *What do you want out of the bike plan?*
4. Review 1994 Bikeway Proposals 7:20-7:30 pm
5. Mapping Exercise in Small Groups 7:30-8:00 pm
Break into groups by jurisdiction. Group tasks:
 - *Review proposals from the 1994 Plan and determine whether they are still valid*
 - *Identify additional connections within (and between) jurisdictions*
 - *Identify top three priorities for bicycle facilities*
6. Group Reports and Summarization 8:00-8:25 pm
Spokesperson for each group will briefly report the results of their discussions—5 minutes per group
7. Closing Remarks 8:25-8:30 pm
Vince Llorin

Bike Plan Hawaii

Workshop Participant Survey

1. How many bicycles are at your home address? _____
2. Where is your residence located (name of town or subdivision) _____
3. How often do you and other members of your household ride bikes?

	Almost everyday	Several days a week	Several days a month	Several days a year	Rarely
Self	<input type="checkbox"/>				
Household member #2	<input type="checkbox"/>				
Household member #3	<input type="checkbox"/>				
Household member #4	<input type="checkbox"/>				
4. For your household as a whole, how important is bicycling for the following types of trips?

	Very Important	Somewhat Important	Not Important
Commuting (to work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recreation/fitness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Errands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
School	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. What do you like about bicycling in your community?

6. What problems do bicyclists face in your community?

7. Where would you like to see improved bicycle facilities?
 From _____ To _____

8. Other concerns regarding engineering, education, enforcement, economy and/or encouragement

9. How did you hear about this workshop? _____

Thank you for completing this questionnaire
 Kimura International, Inc., 1600 Kapiolani Boulevard, Suite 1610, Honolulu, HI 96814

Bike Plan Hawaii PLAN UPDATE

- A statewide bike master plan was completed in 1994
- We're here to update this plan



*Bike Plan
Hawaii* 
*A State of Hawaii Master Plan
(Summary)*

April 1994
Highways Division
Department of Transportation
State of Hawaii



What is... Bike Plan Hawaii?

- A blueprint for improving the bicycling environment across the state
 - Pictures (maps) and statements (policies) of desired outcomes
 - Strategic program for achieving goals and objectives



What is... Bike Plan Hawaii?

- Comprehensive... the 5 "E"s

- Engineering
- Education
- Enforcement
- Economic
- Encouragement



What is... Bike Plan Hawaii?

- Engineering

- Facilities planning
- Network of bikeways
- Safe, cost-effective design
- Maintenance



What is... Bike Plan Hawaii?

- Education
 - Rules of the road
 - BikeEd in the schools
 - Bike rodeos and clinics



Know the Law.

- Stay off public roads and signs. Be aware that you may have no subject to the same penalties as motorists.
- Always ride in the direction of traffic, even if it is not the most direct.
- When traveling down the street, use the space of traffic, not the space for the right-hand side of the road.
- Do not ride on the edge of the road or the shoulder.
- Follow the rules of the road.
- When riding at night, use your own lights and wear reflective gear.
- Check your gear before riding the bicycle to ensure it is in good condition.
- In some areas, the Hawaii Bureau of Motor Vehicle Registration will issue a license to ride a bicycle on the streets of the state at any time.
- Make sure you are wearing your seat belt when riding a bicycle on the streets of the state.



SPONSORED BY THE HAWAIIAN BUREAU OF MOTOR VEHICLE REGISTRATION AND TRAFFIC SAFETY DIVISION

BICYCLE SAFETY

BICYCLE Regulations and Illustrated Safety Tips



Compiled by the Department of Transportation Services City and County of Honolulu

What is... Bike Plan Hawaii?

- Enforcement
 - Enforceability from the police's perspective
 - Need to re-examine traffic code?



What is... Bike Plan Hawaii?

■ Economy

- Saving dollars by bicycling
- Bringing new \$ thru eco-tourism and bike events
- Energy savings



What is... Bike Plan Hawaii?

■ Encouragement

- Promoting bike friendly attitudes
- Making bicycles an important part of healthy cities



What is... Bike Plan Hawaii?

- Flexible
 - Statewide policies
 - Address varying issues and opportunities for each island



Why is it important?

- Part of the State's transportation plan
- Necessary to obtain federal transportation funds
- Consistent with County plans
- Integrate land use development and transportation systems



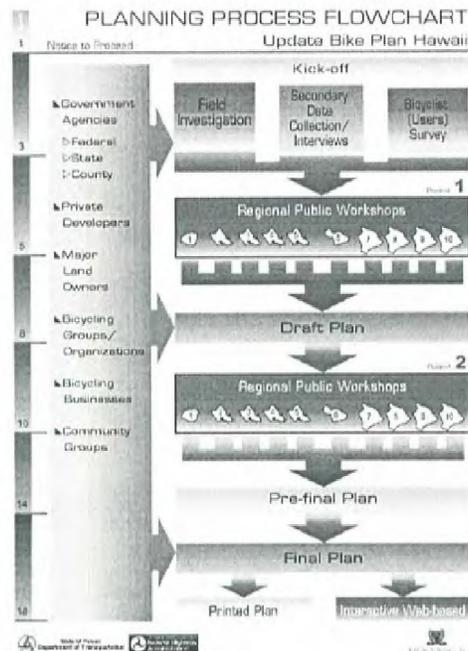
What does the Bike Plan cover?

- State and county facilities on six islands
- On Oahu, Bike Plan Hawaii will fold in recommendations from the Honolulu Bicycle Master Plan
- Development proposals over the next 20 years
- Bicycle facilities of all types, but not mountain bike trails



Bike Plan Hawaii

THE PLANNING PROCESS



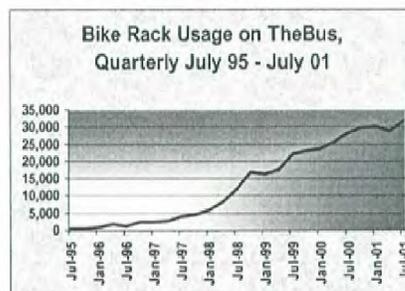
RESULTS OF THE 1994 PLAN

- Permanent liaisons
 - State bicycle coordinator
 - City and County of Honolulu bicycle coordinator
- Mayor's advisory committees on Oahu and the Big Island
- November designated bicycle safety month by State DOT
- Bicycling maps published for Maui and Oahu



RESULTS OF THE 1994 PLAN

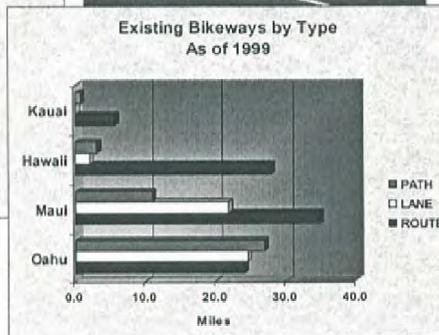
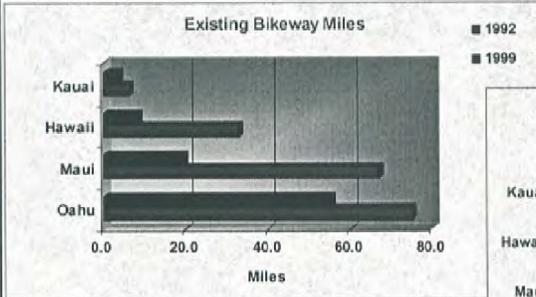
- Improved integration between bikes and buses
 - Bike racks on all Honolulu buses
 - Big Island buses can accommodate bikes



Bicycling in Hawaii Today

Miles of bike facilities

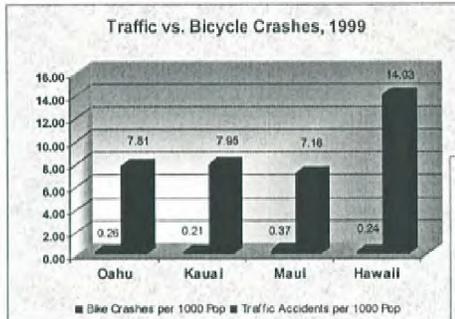
Source: State of Hawaii, DOT, Highways



Bicycling in Hawaii Today

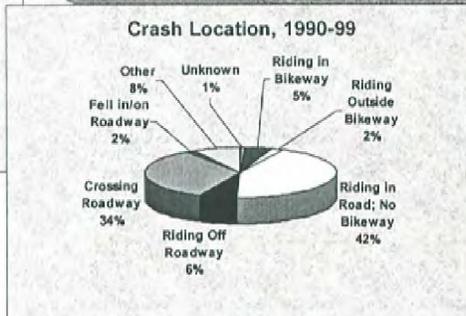
Accident data

Source: State DOT, Highways Division



1999 Bicycle Crashes

- Honolulu County 228
- Kauai County 12
- Maui County 47
- Hawaii County 36



Efforts in Other States

Bicycle programs in other states



Oregon

- Passed 1st Bike Bill in 1971
- First comprehensive Bike/Ped Plan in 1995
- 4100+ miles of state roadways have shoulders or bike lanes
- 60% of state urban roads have sidewalks
- Incorporating bike/ped standards into Roadway Design Manual



Pennsylvania

- 1000 miles of rail-trails
- Statewide Plan completed in 1996
- Bike and Pedestrian Design Manuals
- State provides local planning assistance, training sessions
- Bicycle PA Touring Route Network
- Bike/Ped Checklist for roadway design projects
- 12 District Bike/Ped Coordinators, two staff in central office
- Few bike lane miles



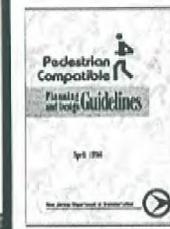
North Carolina

- Bicycle program began in 1974; pedestrian added in 1992
- Initially focused on education and touring routes
- Bicycling and Walking plan adopted in 1996
- Focus on trails and 14-foot outside lanes
- No bike lanes, very few shoulders



New Jersey

- First Bicycle and Pedestrian Plan adopted in 1996
- Governor Whitman—2000 miles of bicycle lanes by 2008
- Bicycle Program has 5 staff, elevated status
- “Rack ‘n’ Roll” (racks on 262 buses)
- New emphasis on project scoping



Florida

- First Plan in 1980, hired bike coordinator
- Bicycle program has 20+ staff members
- 200+ miles of urban bike lanes, 6400 miles of paved shoulders, 2000 miles of sidewalks
- Florida GreenBook has 2 chapters on bike/ped design
- Now establishing multi-modal level-of-service measures



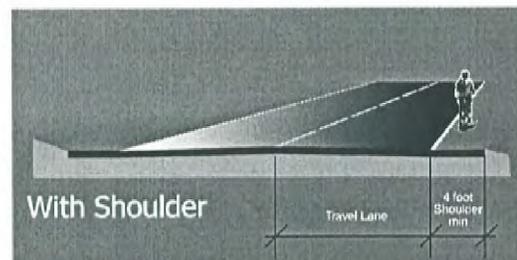
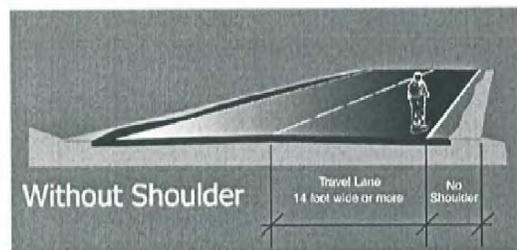
What's involved in planning bikeways?

■ Type of Bike Facilities

- Shared roadways
- Signed shared roadways (bike routes)
- Bike lanes
- Bike paths/mixed-use paths

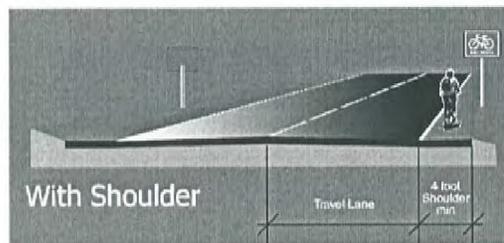
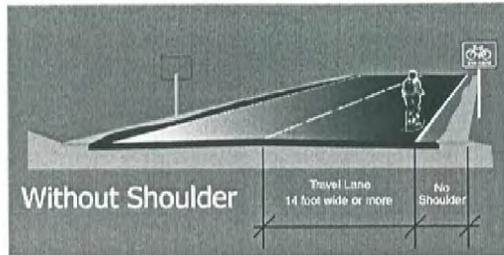
Shared Roadways

- Many existing streets can accommodate bikes "as is"
- Need adequate room for comfortable bike use
- Most common form of bike facility
- Example: minor residential streets
- In high traffic areas, safety enhanced with 4-foot paved shoulder & 6-inch stripe



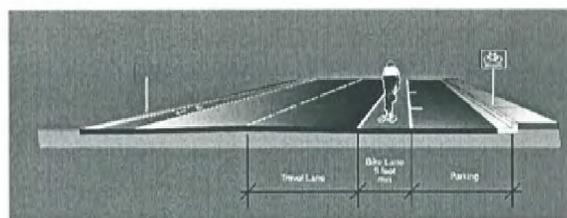
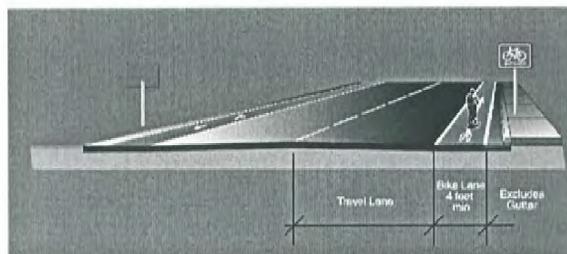
Signed Shared Roadways (Bike Routes)

- Designated by bike route signs
- Provide continuity to other bicycle facilities
- Indicate preferred routes through high travel corridors
- Advise motorists that bicyclists are present



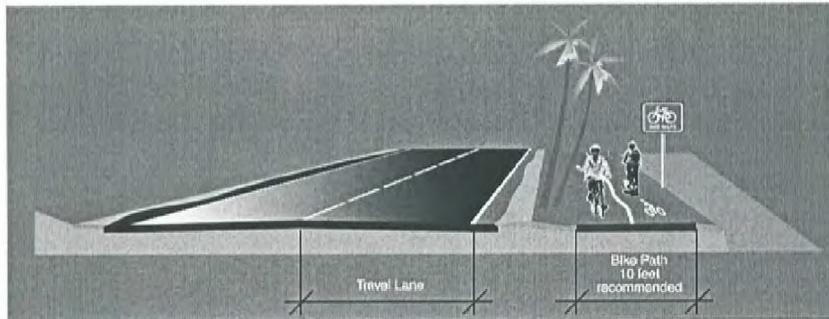
Bike Lanes

- Designated by pavement markings and signs
- Typically 4' wide; 5' with on-street parking
- Lanes in same direction as adjacent vehicular traffic
- Show road areas of preferential use by bikers and motorists
- Increase predictability of movements by each



Shared Use Paths

- Separate from roadway, path functions as independent facility
- Two-way use allowed
- Typically at least 10 feet wide
- Increase width to reduce conflict among different users
- Rely on sidewalks for bikers only in limited situations
- Supplement, not replace, on-road-bicycle facilities



What's involved in planning bikeways?

■ Routing considerations

- Traffic generators
- Directness
- Road conditions
- Speed and volume of traffic
- Skill of bike riders
- Purpose of trips - commuting, recreation, exercise
- Security and personal safety
- Aesthetics
- Cost



What's involved in planning bikeways?

■ Off-road routing considerations for shared use paths

- Stream corridors
- Utility easements
- Former railroad right-of-ways
- Old cane haul roads



Workshop --- Things for you to do

- ### ■ Mapping Exercise
- Validate proposed routes from 1994 Plan
 - Suggest new routes
 - Identify hazardous areas
 - Choose three most important routes
- ### ■ Questionnaire

Let's take a break...



Bike Plan Hawaii



State of Hawaii
Department of Transportation

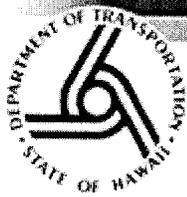


Federal Highway Administration

In cooperation with
City and County of Honolulu
County of Kauai
County of Maui
County of Hawaii



Summary of Workshop 1 Publicity (10/24/01)				
	Big Island	Kauai	Maui	Oahu
Invitation Letter w/ Flyer(s)				
Local contacts (county agencies, district engineers, bike advocates)	12	11	9	
Neighborhood boards/ Community associations			7	16
Military installations				3
Bike shops	11	4	10	11
Business groups	1	4	1	(OMPO list)
Flyers--Mailed				OMPO CAC mailing list (64)
Flyers--Distributed			Happy Valley businesses	Century Bike Ride
Presentations	Council--PW and IG Committee (public access TV)		Council--PW and Transportation Committee (public access TV)	OMPO CAC MACOB
Electronic newsletters	Dep. Mayor Peter Young PATH			HBL--400+ households
Bike month full-page ad (DOT)				
Press release distribution (DOT)				
Print media outlets	4	3	5	11
Radio/TV	3	3	1	18
Press release distribution (KI)	1			1
Webpage				
www.state.hi.us/dot/highways/bike				



Public Affairs

Department of Transportation

Aloha!

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2001 Press Release

NEWS RELEASE

Department of Transportation

Contact: Marilyn Kali, Public Information Officer
Phone: (808) 587-2160
Fax: (808) 587-2313

October 29, 2001

01-242

The state Department of Transportation will hold a series of community workshops on Oahu as part of a planning effort to update the statewide bicycle master plan.

The workshop schedule is as follows:

- Thursday, November 1, Ihilani Marriott, Conference Room, 7 p.m.
- Tuesday, November 13, Kaneohe Community and Senior Center, 6:30 p.m.
- Wednesday, November 14, Aina Haina Elementary School Cafeteria, 6:30 p.m.
- Thursday, November 15, Mililani Mauka Elementary School Cafeteria, 6:30 p.m.

All interested persons are invited to participate. These two-hour workshops will provide the public with information about the scope of the plan, its purpose and goals, and conditions that affect bicyclists. Participants will help to identify potential new bikeways, areas that are hazardous for bike riders and other bicycling issues.

Directions to workshop locations and additional information can be found at: or call Kimura International, Inc. at (808) 944-8848.

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NEWS RELEASE

Department of Transportation

Contact: Marilyn Kali, Public Information Officer
Phone: (808) 587-2160
Fax: (808) 587-2313

October 29, 2001

01-243

The state Department of Transportation will hold a series of community workshops on the island of Hawaii as part of a planning effort to update the statewide bicycle master plan.

The workshop schedule is as follows:

- Saturday, November 3, UH Komohana Agriculture Complex, Conference Room, Hilo, 9 a.m.
- Saturday, November 3, Kalani Honua Rainbow Room, Puna, 2 p.m.
- Monday, November 5, Parker Ranch Town Hall, Waimea, 6 p.m.
- Tuesday, November 6, King Kamehameha Hotel, Conference Room, Kailua-Kona, 6 p.m.

All interested persons are invited to participate. These two-hour workshops will provide the public with information about the scope of the plan, its purpose and goals, and conditions that affect bicyclists. Participants will help to identify potential new bikeways, areas that are hazardous for bike riders and other bicycling issues.

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NEWS RELEASE

Department of Transportation

Contact: Marilyn Kali, Public Information Officer
Phone: (808) 587-2160
Fax: (808) 587-2313

October 29, 2001

01-244

The state Department of Transportation will hold a community workshop as part of a planning effort to update the statewide bicycle master plan on Wednesday, November 7 at War Memorial Convention Hall in Lihue on Kauai at 6:30 p.m.

All interested persons are invited to participate. These two-hour workshops will provide the public with information about the scope of the plan, its purpose and goals, and conditions that affect bicyclists. Participants will help to identify potential new bikeways, areas that are hazardous for bike riders and other bicycling issues.

Directions to workshop locations and additional information can be found at: or call Kimura International, Inc. at (808) 944-8848.

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NEWS RELEASE

Department of Transportation

Contact: Marilyn Kali, Public Information Officer
Phone: (808) 587-2160
Fax: (808) 587-2313

October 29, 2001

01-245

The state Department of Transportation will hold a community workshop as part of a planning effort to update the statewide bicycle master plan on Thursday, November 8 at the Wailuku Community Center on Maui at 6 p.m.

All interested persons are invited to participate. These two-hour workshops will provide the public with information about the scope of the plan, its purpose and goals, and conditions that affect bicyclists. Participants will help to identify potential new bikeways, areas that are hazardous for bike riders and other bicycling issues.

Directions to workshop locations and additional information can be found at: [www.dot.hawaii.gov](#) or call Kimura International, Inc. at (808) 944-8848.

###



Share the Road Safely

Every bicycle on the road means one less car!
Please treat bicyclists with respect and courtesy.

AS A MOTORIST ARE YOU AWARE THAT:

Most accidents involving cars and adult bicyclists are caused by motorist error rather than bicyclist error. Bicyclists may use the full right lane. This may occur when the road is too narrow to fully accommodate both car and bicycle.



Bicyclists are legally considered drivers of vehicles. They must obey traffic signs and signals, as well as be accorded the same respect as other legitimate road users.

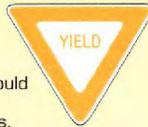
Bike paths are great for recreational bicyclists but for commuters and bicyclists travelling at higher speeds, streets are safer. Respect a bicyclist's right to choose either the path or the road.

Bicyclists are ticketed for traffic violations ...and are subject to fines equal to those for motorists.

Not all bicyclists are alike. As with car drivers, there are good and bad, experienced and inexperienced bicyclists. Your courtesy will inspire the same in others.

It is a traffic violation to open a car door unexpectedly so as to create a hazard to bicyclists. Please check your mirror before opening your door.

The bicyclists you pass may be travelling 25 to 30 miles per hour. When changing lanes or making a turn near a bicyclist, assess the bicyclist's speed and yield as you would to any other vehicle. If you are about to make a right-hand turn after passing a bicyclist, make sure that you have enough space, otherwise wait for the bicyclist to go through the intersection before making your turn.



Look out for bicyclists going around obstructions in their path. While they should look before moving farther into the lane, bicyclists sometimes swerve around potholes, sewer grates and even parked cars without glancing over their shoulder to make sure the coast is clear.

Pass a bicyclist only when it can be done safely while maintaining a "safety zone" of three feet to avoid cutting the bicyclist off. Realize that the air turbulence created by your car at high speeds can cause problems for bicyclists.



SHARE THE ROAD

SAFETY TIPS FOR BICYCLISTS

- 1** Wear a helmet every time you ride. Even if you just ride on bike paths or for a short distance, make sure you put on your helmet before you go. You don't have to be going fast or far to risk serious head injuries.
- 2** Obey traffic laws. Your bike is a vehicle, and just like a car, you must stop for stop signs and stop lights. 
- 3** Always ride with the direction of traffic. Even if you are riding a short distance, it is never safe to ride against traffic. Also, it is unlawful to ride facing traffic in Hawaii, as it is in all 50 states. "The right side is the right side."
- 4** Ride in a straight line. Don't swerve in and out of parked cars, or do anything that would surprise motorists.
- 5** Be visible. Wear light-colored clothes and a bright helmet when you ride. If you ride at night, you must have at least a white front light and a red rear reflector on your bike.

Bike Safety Rodeo!

Saturday, October 27, 9:30 a.m. - 12:30 p.m. at Shriners Hospital for Children
State Farm Insurance's annual Bike Safety Rodeo is free and open to all elementary school-age children. All participants will receive goodie bags and become eligible to win a new bicycle or safety helmet. For more information, call State Farm Insurance at 523-1178.

Bicycle Master Plan Workshops on Oahu

- November 1, 7 p.m., JW Marriott Ihilani Resort and Spa, Conference Room
 - November 13, 6:30 p.m., Kaneohe Community and Senior Center
 - November 14, 6:30 p.m., Aina Haina Elementary School, Cafeteria
 - November 15, 6:30 p.m., Milliani Mauka Elementary School, Cafeteria
- The Hawaii State Department of Transportation will hold a series of two-hour community workshops that will provide the public with information on Hawaii's statewide Bicycle Master Plan. Participants will help identify potential bikeways, hazardous areas for bicyclists and other important issues. For Neighbor Island workshops or more information, visit www.state.hi.us/dot/highways/bike or call Kimura International, Inc. at 944-8848.

Let's share Hawaii's roads safely.
This message is brought to you by:
State of Hawaii Department of Transportation
& State Farm Insurance



Sample Invitation Letter—Workshop 1

Friday, October 12, 2001

ADDRESS BLOCK

Dear Fellow Bicyclists,

Community Workshop for Bike Plan Hawaii

Kimura International, Inc. has been contracted by the State Department of Transportation to update the 1994 statewide bicycle master plan. As part of the planning process, we are holding community workshops across the state to gather initial public input. We cordially invite you to attend the Kauai workshop scheduled for **Wednesday, November 7, 6:30-8:30 pm at the War Memorial Convention Hall.**

The bike plan is particularly important because it will be used to support future requests for federal transportation funds to design and construct bicycle facilities. Participants at the community workshop will help us identify potential new bikeways, areas that are hazardous for bike riders, and other bicycling issues.

We would also appreciate it if you would inform other interested persons of the upcoming planning meetings.

If you have any questions, please call me or Nancy Nishikawa at 944-8848.

Sincerely,
KIMURA INTERNATIONAL, INC.

Glenn T. Kimura
President

cc: Vincent Llorin, State Bicycle and Pedestrian Coordinator,
Department of Transportation

The Hawaii State DOT and the FHWA are updating
the 1994 Bike Plan for the State of Hawaii.

COMMUNITY WORKSHOPS

Bike Plan Hawaii

Learn a bit about planning new bikeways.
Share your ideas for making Hawaii a safer,
better place to bicycle. Children welcome!



KAUAI WORKSHOP

Lihue, Kauai - Nov. 7, Wed., 6:30 pm
War Memorial Convention Hall



For directions and further information, please visit
the State DOT Highways website (look for State Bike Plan)
or call Kimura International, Inc. at 944-8848.

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COMMUNITY WORKSHOPS

Bike Plan Hawaii

Learn a bit about planning new bikeways.
Share your ideas for making Hawaii a safer,
better place to bicycle. Children welcome!



OAHU WORKSHOPS

Leeward Oahu - Nov. 1, Thurs., 7:00 pm

Ihilani Marriott, Conference Room

Windward Oahu - Nov. 13, Tues., 6:30 pm

Kaneohe Community and Senior Center

East Oahu - Nov. 14, Wed., 6:30 pm

Aina Haina Elementary School, Cafetorium

Central Oahu - Nov. 15, Thurs., 6:30 pm

Mililani Mauka Elementary School, Cafetorium

For directions and further information, please visit
the State DOT Highways website (look for State Bike Plan)
or call Kimura International, Inc. at 944-8848.

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COMMUNITY WORKSHOPS

Bike Plan Hawaii

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Share your ideas for making Hawaii a safer,
better place to bicycle. Children welcome!



MAUI WORKSHOP

Wailuku, Maui - Nov. 8, Thurs., 6:00 pm
Wailuku Community Center



For directions and further information, please visit
the State DOT Highways website (look for State Bike Plan)
or call Kimura International, Inc. at 944-8848.

The Hawaii State DOT and the FHWA are updating
the 1994 Bike Plan for the State of Hawaii.

COMMUNITY WORKSHOPS

Bike Plan Hawaii

Learn a bit about planning new bikeways.
Share your ideas for making Hawaii a safer,
better place to bicycle. Children welcome!



MOLOKAI WORKSHOP

Kaunakakai - Feb. 28, Thurs., 6:00 pm
Mitchell Paule Center



For directions and further information, please visit
our website <www.state.hi.us/dot/highways/bike/bikeplan/index.htm>
or call Kimura International, Inc. at 944-8848.

The Hawaii State DOT and the FHWA are updating
the 1994 Bike Plan for the State of Hawaii.

COMMUNITY WORKSHOPS

Bike Plan Hawaii

Learn a bit about planning new bikeways.
Share your ideas for making Hawaii a safer,
better place to bicycle. Children welcome!



BIG ISLAND WORKSHOPS

Hilo, Hawaii - Nov. 3, Sat., 9:00 am

UH Komohana Ag. Complex, Conference Room

Puna, Hawaii - Nov. 3, Sat., 2:00 pm

Kalani Honua Rainbow Room

Waimea, Hawaii - Nov. 5, Mon., 6:00 pm

Parker Ranch Town Hall

Kona, Hawaii - Nov. 6, Tues., 6:00 pm

King Kamehameha Hotel, Conference Room

For directions and further information, please visit
the State DOT Highways website (look for State Bike Plan)
or call Kimura International, Inc. at 944-8848.



**ROUND 2
COMMUNITY
MEETINGS-WORKSHOPS**

Bike Plan
Hawaii

Record of Community Workshop 2

All Venues

The second round of community meetings/workshops were held between April 29 and May 14, 2002. Ten meetings were held on four islands (see schedule). These meetings drew 148 participants, representing a diverse group of residents, bicycling advocates, owners of bicycling-related businesses, students, land developers, State and County legislators, and government officials.

Schedule of Community Workshops

Monday	April 29	East Oahu Hawaii Kai Library 249 Lunalilo Home Road	6:30-8:30 pm
Tuesday	April 30	Windward Oahu Kaneohe Community & Senior Center 45-613 Puohala Street	6:30-8:30 pm
Wednesday	May 1	Wailuku, Maui Wailuku Community Center	6:00-8:00 pm
Thursday,	May 2	Lihue, Kauai War Memorial Convention Hall	6:30-8:30 pm
Monday	May 6	Kailua-Kona, Hawaii King Kamehameha Hotel	6:00-8:00 pm
Tuesday	May 7	Waimea, Hawaii Kahilu Town Hall	6:00-8:00 pm
Wednesday	May 8	Puna, Hawaii Pahoa Neighborhood Center	6:00-8:00 pm
Thursday	May 9	Hilo, Hawaii UH Komohana Agricultural Center Conference Room A	6:00-8:00 pm
Monday	May 13	Leeward Oahu Kapolei Elementary School 91-1119 Kamaaha Loop	6:30-8:30 pm
Tuesday	May 14	Central Oahu Mililani Recreation Center III 95-281 Kaloapau	6:30-8:30 pm

Purpose of the Workshop

The objectives of this meeting were to review input received from the first round of meetings held in November 2001, introduce the key components of the plan, and solicit feedback on those elements that had been drafted to date, including:

- Proposed Goals, Objectives, and Actions
- Methodology to Evaluate Bikeway Proposals
- Statewide Bikeway Network (mapped)
- Preliminary Prioritization of Bikeway Proposals

Agenda and Public Feedback

All of the meetings used the same agenda, beginning with a brief introduction by Vince Llorin, State Bicycle and Pedestrian Coordinator. This was followed by an hour-long [PowerPoint presentation](#) that reviewed the planning process and explained the main components of the plan itself. The final segment of the program called for participants to examine maps showing the proposed bikeway network.

Workshop participants were asked to provide three types of feedback into the planning process:

- Comment on a preliminary version of the plan objectives and actions
- Fill out the evaluation criteria feedback form
- Indicate preferred bikeway projects by placing dots on preliminary master plan maps

Questions and Comments

Note: At some workshop venues, no questions or comments were raised during the time allotted, therefore, the group moved immediately into the interactive segment.

East Honolulu

Question: Are the results of the telephone survey statistically significant?

Response: Yes, the results can be generalized to the population base from which the sample was drawn; i.e., the Big Island, Maui, Kauai, and the suburban and rural areas of Oahu. The surveyed population inhabits an area that is essentially coterminous with geographic scope of the bike plan.

Question: Why does the State's planning effort exclude a dominant part of the population, i.e., the Honolulu Primary Urban Corridor?

Response: The PUC has its own bicycle plan, the Honolulu Bicycle Master Plan, completed in 1999. In developing that plan, the City and County of Honolulu implemented a rigorous public participation process. Because that plan was completed relatively recently, it made sense to focus resources on other parts of the state. Bike Plan Hawaii will fold in the recommendations of the Honolulu Bicycle Master Plan.

Question: If Bike Plan Hawaii is expanded in the future to include pedestrians, does that mean the plan will only cover shared-use facilities?

Response: No, such a plan would include facilities intended exclusively for either bicycles or pedestrians, as well as shared-use facilities. There are three main reasons for a pedestrian facilities master plan. First, federal transportation policies, beginning with the landmark ISTEA legislation in 1991, increasingly recognize and promote walking as part of a balanced transportation system. In terms of programs and funding opportunities, bicycling and walking are often put in the same category. Second, by virtue of their location at the outer edges of roadways, there's a strong interrelationship between two. There are shared design issues, for example, at intersections. Improvements to one will often benefit the other—and vice versa. For example, adding a bike lane also increases the buffer between pedestrians and cars. And both modes share an interest in traffic calming measures. Third, since the State has a coordinator for both bicycle and pedestrian facilities, a combined plan would help to structure and prioritize activities in the two arenas.

Windward Oahu

Comment: In order to reduce conflicts between bicycles and pedestrians on sidewalks, why not stencil a “no bicycling” decal on the pavement?

Question: Why not add a 6th “E” for environment?

Response: The plan acknowledges that bicycling puts less strain on the environment, through the Education and Encouragement objectives. We have included recommendations to better inform the public about the resource conserving aspects of bicycling and to promote bicycling as an environmentally friendly mode of transportation.

Comment: I run an ecotourism website, and get regular inquiries from people who want to bike in Hawaii.

Question: Is there a set standard for the width of bike lanes? What about car door accidents?

Response: The national standard for developing bicycle facilities was published by the American Association of State Highway and Transportation Officials (AASHTO) in 1999. It specifies a minimum width of 4 feet for bike lanes where there is no on-street parking. The recommended minimum is 5 feet with on-street parking. In this case, the typical allowance is a minimum width of 11 feet, including 5 feet for the bike lane and 6 feet for the marked parking stall. The AASHTO guideline further recommends 13 feet where there is substantial parking or where the turnover of cars is high, e.g., in commercial areas.

With an 8-foot wide parking lane, bikes would usually be outside the door zone. When they occur, door accidents can be serious; however, among all types of bike crashes, they tend to be relatively rare. A 1994 study of bicycle/motor vehicle crashes in Portland—a

city with high bicycle ridership—found that bicyclists hitting an open door accounted for less than 5 percent of all crashes.

Question: I've lived in cities with successful bike networks. Why are they successful? Why do they work there?

Response: There are cities on the Mainland where people have bought into bicycles, and others where people are resistant to change. In the successful places, they've been able to bring about a paradigm shift in how people plan for and construct transportation systems. But it takes a lot of time, and a lot of effort by a lot of people. Along with changes in how people view transportation, there's an evolution underway in land-use design with more attention to accessibility and a greater mix of uses.

Question: What if, under the best-case scenario, bicycling really takes off? Might there be negative consequences, such as loss of gas taxes or car registration fees?

Response: If Hawaii gained recognition as a safe place for tourists to bicycle, the inflow of visitor dollars would probably offset the loss of revenues. Many tourists, especially those from overseas, would flood in.

Question: Do people in the design profession talk to each other? Older professionals don't seem to be in tune with the desire for better bicycling facilities.

Response: Again, this is part of a paradigm shift. Historically, building bikeways weren't part of a civil engineer's training. To do so now requires retraining. Earlier this year, Vince Llorin organized a two-day seminar called "Designing Streets for Pedestrians and Bicycles" as part of a continuing education program for engineers. What's promising is that because of strong interest among professionals in the public and private sectors, an extra session was added.

Comment: There are too few bike racks. Bicyclists should be able to ride right out of the airport.

Kona

Question: Is it possible to have single-sided paths (i.e., adjacent to one side of the roadway); even though with bicyclists going both ways, it may look like bicyclists are going against traffic? Can't there be signs instructing bicyclists to watch for vehicles turning at intersections?

Response: Although that design solution typically is not recommended, the plan won't have carte blanche design recommendations, where one size fits all. To some extent, each project needs site specific engineering designs and decisions should be made on a case-by-case basis.

Waimea

Comment: When the Kawaihae Bypass is designed, there should be a path put in alongside the highway, but separate from it. It is uncomfortable riding alongside high-speed traffic, especially trucks. With the Bypass, there would be few cross streets, so intersections are less of a concern. In fact, the master plan should recommend that paths be provided alongside new highways on a routine basis. When Queen Kaahumanu Highway is widened from Henry Street to Makala (Old Airport Access Road), an 8-foot wide path will be put in on the makai side.

Pahoa

Comment: What percentage of tourist dollars stay in community if it's spent by a bicycling tourist versus a motoring tourist? I suspect it's higher for bicycling tourists.

Question: Are there standards for ideal lot sizes to make an area more bicycle- and pedestrian-friendly?

Response: Typical lot sizes vary from island to island. It's about 3,000 SF on Maui, 5,000 SF on Oahu, and 10,000 SF on the Big Island. There's a concept called the "friction of distance" referring to the effort needed to overcome distances. Of course, the friction of distance is greater for pedestrians and bicyclists than for motorists, so anything that contributes to distance reduces walking and bicycling convenience. At the same time, other important factors need to be considered, such as block size—which is a function of frontage or lot configuration—and the roadway network. With larger lots, blocks are typically larger, because it's expensive for local roads to serve only a few lots.

Evaluation Criteria

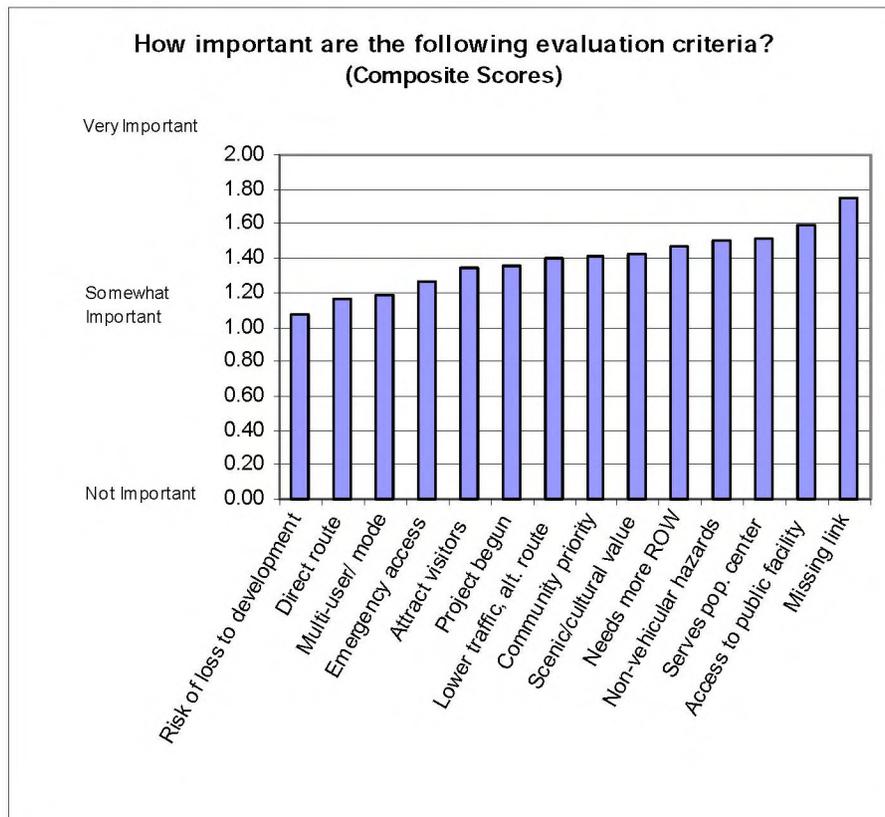
Bike Plan Hawaii guides development of the bikeway network by categorizing proposals for new facilities into three timeframes: near-term, mid-term, and long-term. The evaluation process incorporates fourteen criteria to determine how the proposals are categorized. Workshop 2 participants were asked to give feedback about the importance of each criterion. Points are given (or, in some cases, subtracted) based on whether a proposed bikeway satisfies the following:

- Serves a population center
- Provides access to public facility
- Fills a missing link in the network
- Provides a direct route
- Provides an alternate route along streets with lower speeds and traffic volumes
- Is a multi-user/multi-mode facility
- Is like to attract visitors
- Community has expressed support for the project
- Avoids non-vehicular hazards (steep slopes, rock slides, unprotected drop-offs)

- Allows ready access by emergency vehicles
- Would continue a project that has begun (e.g., initial planning or design)
- Would require additional right-of-way
- Would reserve a corridor that is at risk of loss to urban development
- Would enable public access to resources of scenic or cultural value

Results: The chart below shows a composite score for each criterion based on responses from 103 people throughout the state. The composite scores were derived by assigning 2 points to responses of “very important,” 1 point to responses of “somewhat important,” and 0 point to responses of “not important.” All points were summed and divided by the number of people who responded to that item.

Composite scores ranged from 1.07 for “at risk of loss to development” to 1.75 for “provides a missing link.” Therefore, even at the “low end,” all of the criteria used in the evaluation process were felt to be at least somewhat important. Based on this finding, none of the fourteen criteria were dropped from the evaluation process.



In addition, the feedback form allowed participants to write in any *additional* criteria they felt should be addressed in the evaluation process. All of the write-in suggestions are already subsumed under one of the fourteen criteria, or more appropriately considered within the policy section of the plan.

Several people mentioned “safety” so it is worth emphasizing that planners have safety as a foremost concern. Because the proposed facilities will be constructed to accepted national standards, it is assumed that all facilities will improve safety. Therefore, safety was attributed to all of the bikeway proposals, rather than being a distinguishing characteristic.

Bikeway Preferences

To help gauge community preferences for specific bikeway proposals, all workshop participants were asked to indicate their top choices by placing dot stickers on regional and local bike maps. Dots could be distributed as widely as desired or used to “vote” for a particular proposal. This exercise elicited considerable discussion among the participants as they traded stories of riding along different routes or explained the merits of various proposals.

The following bikeway proposals garnered five or more dots.

Kauai

- Bike path from Nawiliwili Harbor to Lydgate Park
- Bike path from Kuna Bay to Anahola
- Bike lane on Maluhia (Tree Tunnel) Road from Kaumualii Highway to Koloa
- Bike route on Kaumualii Highway from Hanapepe to Maluhia Road
- Kauai Commuter Bikeway from Kaumualii Highway (outside Lihue) to Wailua

Oahu

- Bike route on Kalanianaʻole Highway from Kailua Road to Olomana Golf Links
- Bike route on Kalanianaʻole Highway from Sandy Beach to Kealahou Street
- Bike route on Lilipuna Road in Kaneohe
- Bike path on cane haul road between Waipio Point Access Road and Waipahu Road
- Bike path through Kipapa Gulch connecting Mililani and the Central Oahu Regional Park (Waipio)
- Bike lane striping at H-2 Mililani interchange
- Bike lane along the entire length of Meheula Parkway (in Mililani)
- Bike route on Kamehameha Highway between Mililani and Wahiawa
- Complete unpaved segment of Pearl Harbor Historic Trail from Waipahu Depot Road to West Loch

Maui

- Bike route along future connection between Kihei/Makena and Upcountry (Ulupalakua)
- Coastal path from Kalama Beach Park to Kilohana Drive
- Hookipa Coastal Trail from Hookipa Park to Hamakuapoko Road
- Kihei Greenway extension along North-South connector road

Big Island

- Bike path from Hilo to Pahoa along abandoned railroad right-of-way (also called Railroad Avenue project)
- Various bike paths in and around Waimea Town, (also called Waimea Greenways and Trails)
- Coastal bike path from Lekeleke Bay to Kealakekua Bay
- Bike path on a utility easement road from the Kona Wastewater Treatment Plant to Honokohau Harbor
- Bike path on Old Airport Shore Drive from the Old Kona Airport to the UH (OTEC) Research Lab
- Bike path on old railroad right-of-way, mauka of Kuakini Highway from Old Hualalai Road to Kuakini Highway
- Bike path on old railroad right-of-way, makai of Kuakini Highway
- Extend bike path adjacent and parallel to Queen Kaahumanu Highway from Makala to Keahole Airport
- Bike path along utility corridor at 1500-foot elevation (in Kona region)

Community Workshops (Round 2) April-May 2002				
Attendance Summary				
Date	Location	Attendees	Plan Team	Evaluation Feedback Form
Mon, Apr. 29	East Oahu	10	4	10
Tues, Apr. 30	Windward Oahu	8	4	6
Wed, May 1	Wailuku	20	4	15
Thurs, May 2	Lihue	14	4	7
Mon, May 6	Kailua-Kona	37	4	25
Tues, May 7	Waimea	6	4	4
Wed, May 8	Pahoa	7	4	5
Thurs, May 9	Hilo	7	4	6
Mon, May 13	Leeward Oahu	8	3	6
Tues, May 14	Central Oahu	31	3	19
	Total	148		103

Bike Plan Hawaii

Public Information Meeting and Workshop 2

Attendance Sheet

Monday, April 29, 2002

Hawaii Kai Library

6:30 - 8:30 pm

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
Tom Rush			
Lesley Inouye			
Jim McKinn			
Alice & Jerry Tucker	HBL		
Mark Went	HBL		
Nabele Iron			
J.J. Johnson	HBL		
Emel Cutchon			
Clifford Chang			
Chris Sayers	DTS		

Bike Plan Hawaii

Public Information Meeting and Workshop 2

Attendance Sheet

Tuesday, April 30, 2002

Kaneohe Community & Senior Center

6:30 - 8:30 pm

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
NICK BARNIK			
Tim Kum			
Ronald H. Yasuda			
David Fitzgerald			
Allylie Lulliam			
Rob Knudson			
Shannon Wood	The Kolohe News		

Bike Plan Hawaii

Public Information Meeting and Workshop 2

Attendance Sheet

Wednesday, May 1, 2002

Wailuku Community Center

6:00 - 8:00 pm

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
F. LOA	POZS P		
C. Page			
D. AGE			
Dave DeLeon	Bikeways Main		
Walter Enomoto	maple street Advisory Comm		
Cheney Bryant	resident		
Chris Wirtel	bicyclist		
Fred Swaney			
Milton Arakawa	DPWUM		
Don Weiss	cyclist		
PEDRO FORCINA	POT CHUN-		

Bike Plan Hawaii
Public Information Meeting and Workshop 2

Attendance Sheet

Wednesday, May 1, 2002

Wailuku Community Center

6:00 - 8:00 pm

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
Richard Spork	Maui Mtn Bike Club		
<i>Paul Medeiros</i>	<i>Coast of Maui</i>		
Kevin Dang	Solo Co of Maui		
Zandra General	General Co		
Tom Pierce			
<i>Sandy Sweet</i>			
<i>JOE BERTRAM</i>	<i>Bike Works</i>		
Vera McCabe	Dept. of Ed.		
Ferdinand Cajigal			

Bike Plan Hawaii

Public Information Meeting and Workshop 2

Attendance Sheet

Thursday, May 2, 2002

War Memorial Convention Hall, Lihue

6:30 – 8:30 pm

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
Faye Newkeld	DOT		
DAVE Wolfe			
<i>Margo Eisenman</i>			
WATSON HUNT			
TERRY TAYLOR			
Rocky Kiedel			
Ken Davies			
Robert MacDougal			
Rebecca Miller	Renewable Energy Kaver		
Russell Brier			
Leonard Mahoe			

Bike Plan Hawaii

Public Information Meeting and Workshop 2

Attendance Sheet

Thursday, May 2, 2002

War Memorial Convention Hall, Lihue

6:30 – 8:30 pm

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
STEWART KYRANO	DET-Hwy		
Rob Brewer	Private		
John Tanner	Bicycle Shp		

Bike Plan Hawaii

Public Information Meeting and Workshop 2

Attendance Sheet

Monday, May 6, 2002

King Kamehameha Hotel, Kailua-Kona

6:00-8:00 pm

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
Chama Cascade	Resident		
Jason Root	Resident		
RAChamberlin	Hawaii Cycling Club		
Teri Leicher	Jacks Diving Locker resident		
Bob Schratz			
Karen Browne			
Susan Golden			
Rick Mersdorf			
Connie Schratz			
Stanley Tamura			

Bike Plan Hawaii

Public Information Meeting and Workshop 2

Attendance Sheet

Monday, May 6, 2002

King Kamehameha Hotel, Kailua-Kona

6:00-8:00 pm

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
K. Croswell	resident		
Jerry Fwing	resident		
Alex Alcantara	"		
SHELDON YAMASATO	Akinaka & Assoc.		
J. TODD LEWIS	RESIDENT		
HAROLD MURPHY	SEVP		
Gregory Buch	Bikeabout		
Robert Prall	Kailua reg		
Keola Childs			
Oliver Kiel	Orididale Bicycles		
Crest Milk	HP Bike Works		
Frank Sawyer	Resident		
HARVEY MALCUM-SAYER	"		

Bike Plan Hawaii

Public Information Meeting and Workshop 2

Attendance Sheet

Monday, May 6, 2002

King Kamehameha Hotel, Kailua-Kona

6:00-8:00 pm

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
Deborah L. Chang	Hawaii County		
MATHIAS FUJIKAWA	AKIYAMA ASSOC., LTD		
Nihari Beaufere	KTSU		
Susan Lewis	PATH		
MARY OSBORNÉ	HAWAII CYCLESUBS		
Daniel Hodel			
ERNE FRASCATTI	PATH		
JOHN + PETER KINCHER	Residents		
Ann Peterson	PATH		
Jeff McDewitt	PATH/TRACE		
Julian Waindian	resident		
Bill Graham	RESIDENT		
Julius Kiel			
Rigoberto	Les		

Bike Plan Hawaii

Public Information Meeting and Workshop 2

Attendance Sheet

Tuesday, May 7, 2002

Parker Ranch Town Hall, Waimea, Hawaii

6:00-8:00 pm

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
Victor Jensen			
CLAY LAM			
DANIELSON CAR			
DAVID & ANNE GOMES			
Grant Mitchell			
Stanley Tamura			

Bike Plan Hawaii

Public Information Meeting and Workshop 2

Attendance Sheet

Wednesday, May 8, 2002

Pahoa Neighborhood Center, Puna, Hawaii
6:00-8:00 pm

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
John Luchan	PATH + Mayor's Office		
MARILYN HAYMORE	Puna Traffic Safety		
Bob Jacobson	HACA Hi Acres Comm Assn		
Julie Jacobson	County Council member Hawaiian Acres Res		
TAIRA YOSHIMURA	PATH		
MARILYN HAYMORE	H.DOT		
ANDY LEVINE	MAYOR'S OFFICE		
Don Anderson	Neighborhood Epia Kapaemahu Veterans Co		

Bike Plan Hawaii

Public Information Meeting and Workshop 2

Attendance Sheet

Thursday, May 9, 2002

UH Komohana Agricultural Center, Hilo, Hawaii

6:00-8:00 pm

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
Mary Mavin Porter	Oahu Science Historian		
Christine Seymour	Hilo Bike Hub President Big Island Bike Ass.		
Stanley Tamura			

Bike Plan Hawaii

Public Information Meeting and Workshop 2

Attendance Sheet

Thursday, May 9, 2002

UH Komohana Agricultural Center, Hilo, Hawaii

6:00-8:00 pm

Lanesboro, MA

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
RON REILLY	Mayor, Cncte.		
BOB WILKINS	EERE		
Pam Mizuno	Parks & Recreation		
Anny Bork			

Bike Plan Hawaii

Public Information Meeting and Workshop 2

Attendance Sheet

Monday, May 13, 2002

Kapolei Elementary School, Leeward Oahu

6:30 – 8:30 pm

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
Tom Dell	REP. ESPELO		
Reef Amanu			
Rep Mark Moore			

Bike Plan Hawaii

Public Information Meeting and Workshop 2

Attendance Sheet

Monday, May 13, 2002

Kapolei Elementary School, Leeward Oahu
6:30 - 8:30 pm

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
Myra Dembrowski			
David Leers	PACIFIC WAIIPAHU NEIGH		
Mike Gabbard			
Carol Gabbard			
PAMELA WITZ OF OAKLAND	COUNCILMEMBER		

Bike Plan Hawaii

Public Information Meeting and Workshop 2

Attendance Sheet

Tuesday, May 14, 2002

Mililani Recreation Center, Central Oahu

6:30 - 8:30 pm

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
Gerald EVANS	resident		
Monica Evans	resident		
DAN SUENIRO	"		
Muchelle Kidani	MTA / AIBZS		
MARY WATSON	HBZ / resident		
COURTNEY TOMAS	member / resident		
JENNIFER BONUS	resident		
NICOLE SHIGETA	resident / student		
Brian Prentice	resident		
Mitchell Carvente	resident		
Peter Lucas	resident		
Ofelia Wong	resident		
Lance Bocobo	resident		
Sandra Takeda	resident		

Bike Plan Hawaii
Public Information Meeting and Workshop 2

Attendance Sheet
 Tuesday, May 14, 2002
 Mililani Recreation Center, Central Oahu
 6:30 – 8:30 pm

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
CHARLES BROWN			
Jim Halverson	State Dept of Hawaii Resources Dept Oahu Resource Conservation & Adapt SB. OAHU BASE SPT BN		
Kevin King	student		
Ray Perez	student		
jaimie kim	student		
kristina goya	student		
Stephen Albano	student		
Scott Kobayashi	Student		
Mark Miki	Student		
James Burke	RESIDENT		
Steven Yoshida	Resident		
ASHLEY WONG	student		
David Bremer	Hawaii Bicycle League		
MICHELLE KURISU	OMPO		

Bike Plan Hawaii

Public Information Meeting and Workshop 2

Attendance Sheet

Tuesday, May 14, 2002

Miililani Recreation Center, Central Oahu

6:30 – 8:30 pm

To be used for our official mailing list only

Name	Affiliation	Mailing Address	E-mail Address
DEAN SENSU			
LoriAnn Pocoboo	Resident		
Chris Sayers			

Bike Plan Hawaii
State of Hawaii Department of Transportation
Federal Highway Administration

Public Information Meeting and Workshop

Wednesday, May 8, 2002
Pahoa Neighborhood Center, Puna, Hawaii
6:00 pm

Agenda

- | | | |
|----|--|--------------|
| 1. | Introduction
Vince Llorin, State DOT, Project Manager | 6:00-6:05 pm |
| 2. | Project Description and Background
Glenn Kimura and Nancy Nishikawa, Kimura International, Inc.

<ul style="list-style-type: none">• <i>What we learned in Workshop 1</i>• <i>What we learned from other surveys</i> | 6:05-6:20 pm |
| 3. | Bike Plan Goals, Objectives, and Strategies

<ul style="list-style-type: none">• <i>How they relate to the 5 "E"s</i> | 6:20-6:40 pm |
| 4. | Design Guidelines
Bruce Landis, Sprinkle Consulting, Inc. | 6:40-7:00 pm |
| 5. | Bikeway Proposals

<ul style="list-style-type: none">• <i>Evaluation criteria—please fill out the feedback form</i>• <i>Phasing of bikeway proposals</i> | 7:00-7:20 pm |
| 6. | Community Feedback

<ul style="list-style-type: none">• <i>Examine bikeway proposals—suggest changes and revisions</i>• <i>Vote your personal priorities</i> | 7:20-7:40 pm |
| 7. | Closing Remarks
Vince Llorin | 7:40-7:45 pm |



Bike Plan Hawaii

Evaluation Criteria for Bikeway Proposals

Bike Plan Hawaii categorizes bikeway proposals into three timeframes: near-term, mid-term, and long-term. These categories guide implementation, but are subject to available resources and environmental conditions. The following criteria have been used to help determine how the proposals are categorized.

Do you think these criteria are important?

Criteria	Very Important	Somewhat Important	Not Important	No Opinion
Mobility and Access				
• Does the bikeway serve a population center?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Does it provide access to a public facility (school, park, library) or commercial area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Is it a missing link in the bicycle network?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Does it provide a direct route (major street)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Does it provide an alternate route (street with lower traffic)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Users				
• Is it a multi-user/multi-mode facility (bikes, pedestrians, wheelchairs, rollerblades, etc.)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Would it attract visitors (and promote economic development)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Has the community expressed a preference for the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Safety				
• Are there non-vehicular hazards (steep slopes, drop-offs, blind curves, prone to rockslides)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Is it accessible by emergency vehicles?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Implementation and Cost				
• Has the project begun (e.g., initial planning)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Is there a need to acquire more right-of-way?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
• Is there a risk of loss to development?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Aesthetics				
• Does it have scenic or cultural value?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other Important Criteria (please write in)				
• _____				
• _____				
• _____				

Bike Plan Hawaii

PRELIMINARY-- FOR
DISCUSSION PURPOSE
ONLY

Overall Goal

To establish bicycling as a safe and convenient mode of transportation for residents and visitors throughout the state.

Engineering and Planning Element

- ▣ **Objective:** Plan and design new and improved transportation facilities to accommodate and encourage use by bicyclists of different skill levels.

- ▣ **Recommended Actions:**
 - Design roadway projects with adequate space for bicyclists.
 - Expand bikeway networks for utilitarian and recreational travel.
 - Adopt nationally recognized design guidelines and standards.
 - Develop flexible and innovative design solutions when environmental conditions warrant.
 - Maintain bikeways in a smooth, clean, and safe condition.

Engineering and Planning Element (continued)

- Inspect roadways after repairs are completed.
- Encourage counties to adopt Bike Plan Hawaii that, together with other local bike plans, will establish a legal foundation to enforce related land development regulations.
- Encourage counties to adopt land use plans and regulations that promote bicycling through compact development and suitable bike accommodations.
- Continue integrating bicycles with other modes of transportation.
- Coordinate with other implementing agencies.
- Expand future *Bike Plan Hawaii* to include pedestrians.

Education Element

▣ **Objective:** Expand the range of education activities to reduce bicycle crashes and increase ridership.

▣ **Recommended Actions:**

- Support statewide bike educational programs for school children.
- Curricula should include use of bicycle safety equipment, on-road biking skills and judgment, and observance of traffic laws.
- Incorporate bicycle awareness into the driver education program, Hawaii drivers' manual, and drivers' license written exam.
- Monitor and analyze bicycle crash data to improve bicycle safety.
- Evaluate the crash reporting system and recommend changes to improve usefulness.

Education Element (continued)

- Support continuing education programs on state-of-the-art bicycle facility planning and design for transportation professionals.
- Create an on-line resource center. Website should allow feedback from bicyclists.
- Increase awareness about the health and fitness benefits of bicycling.
- Support establishment of a Safe Routes to Schools program.

Enforcement Element

▣ **Objective:** Strengthen enforcement efforts to prevent illegal and reckless behavior by motorists and bicyclists and safeguard those using the bicycle network.

▣ **Recommended Actions:**

- Work with law enforcement to reduce traffic violations by bicyclists that might cause serious vehicular or pedestrian crashes.
- Work with law enforcement to reduce motorist errors and aggressive behaviors.
- Review and update, as needed, bicycle-related traffic laws.
- Modernize the bicycle registration system.
- Work with law enforcement agencies to reduce crime on bicycle corridors.

Economics Element

▣ **Objective:** Increase awareness about the economic benefits of increased bicycle use.

▣ **Actions:**

- Identify opportunities to enjoy the islands' diverse scenic beauty via bicycle.
- Consider visitors when designing bicycle facilities, such as signs or markers that facilitate way-finding.
- Work with the Hawaii Tourism Authority and other appropriate entities to develop promotional material.
- Disseminate information material about the individual and societal cost-savings of replacing car trips with bike trips.

Encouragement Element

▣ **Objective:** Increase bicycle trips by promoting the personal and community benefits of this travel mode.

▣ **Recommended Actions:**

- Sponsor promotions to increase awareness of bicycling opportunities.
- Distribute maps and guides about bicycle facilities and programs.
- Support bicycle advisory committees in all counties.
- Coordinate and encourage the involvement of bicycle advocates, citizens, and local officials in implementing projects and achieving the objectives of this plan.
- Develop bicycle commuter incentive programs.
- Support conferences to promote exchange of bicycling ideas.

Bike Plan Hawaii

2nd
Round
Workshops



State of Hawaii
Department of Transportation



Federal Highway Administration

In cooperation with
City and County of Honolulu
County of Kauai
County of Maui
County of Hawaii



Bike Plan Hawaii



Consultants:



Kimura International Inc.



Sprinkle Consulting Inc.

Bike Plan Hawaii Purpose of this Workshop

- Review planning process
- Bicycle use and preferences
- Bike Plan goals, objectives, and recommended actions
- Bikeway design possibilities
- Evaluation process
- Outcome of Workshop 1
- Your input

Bike Plan Hawaii PLAN UPDATE

- A statewide bike master plan was completed in 1994
- Our workshop tonight continues the updating process



*Bike Plan
Hawaii* 
*A State of Hawaii Master Plan
(Summary)*

April 1994
Highways Division
Department of Transportation
State of Hawaii



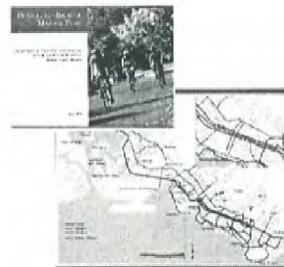
What is... Bike Plan Hawaii?

- A blueprint for improving the bicycling environment across the state
 - Pictures (maps) and statements (policies) of desired outcomes
 - Strategic program for achieving goals and objectives



What does the Bike Plan cover?

- State and county facilities on six islands
- On Oahu, Bike Plan Hawaii will fold in recommendations from the Honolulu Bicycle Master Plan (1999)
- Development proposals over the next 20 years
- Bicycle facilities of all types, but not mountain bike trails



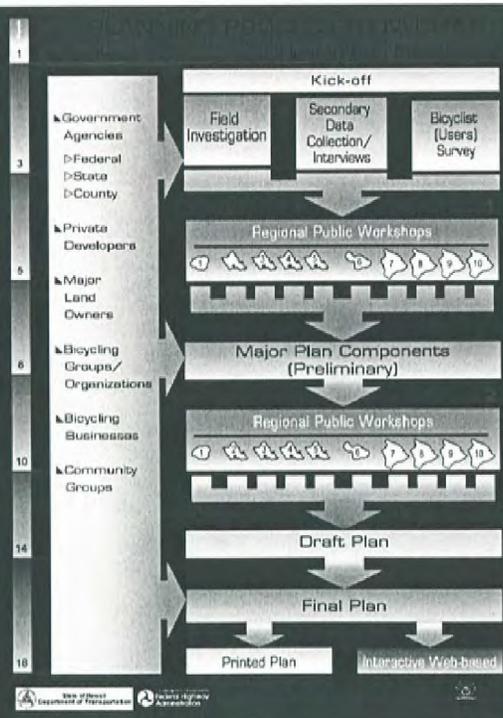
Why is it important?

- Part of the State's transportation plan
- Necessary to obtain federal transportation funds
- Consistent with County plans
- Integrate land use development and transportation systems



Bike Plan Hawaii

THE PLANNING PROCESS



What we learned about bicycle use and rider preferences

- Survey of workshop participants
- Random telephone survey
- School survey

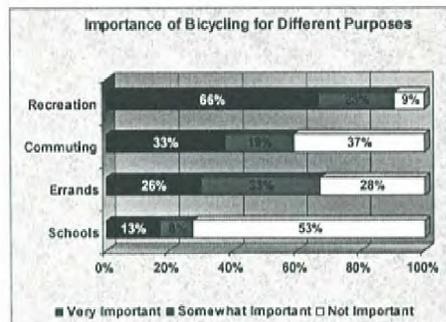
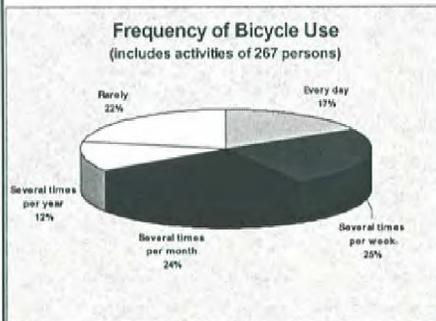


Workshop Survey Results



- How often do people ride bikes and for what purposes:

- Two-thirds of respondents ride at least a few times every month



- Recreation is the most common reason for riding, by far
- But more than half use bikes to run errands or commute to work

Workshop Survey Results

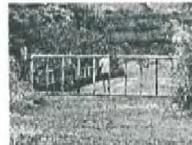
■ What do people like about bicycling?

- Alternative form of transportation
- Exercise
- Being outdoors, enjoying scenery



■ What problems do people face?

- Lack of road space
- High traffic volume/speed
- No off-road facilities ("paths")



Telephone Survey Results

- Conducted scientific survey - can generalize about entire population from the sample
- 402 respondents selected randomly
- Interviewed by phone in February 2002
- Representation of population on four major islands

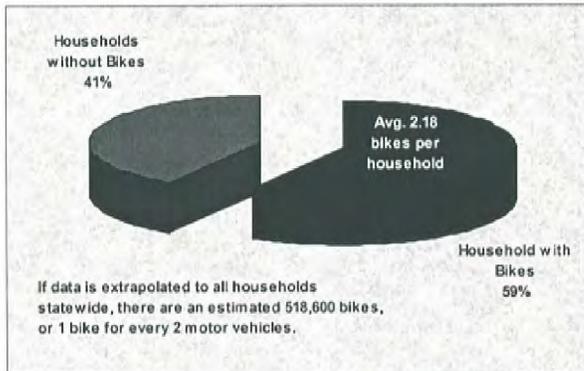


- Demographics indicate sample contains a mix of gender, age, ethnicity, and income similar to state profile
- Margin of error: +/-5%



Telephone Survey Results

■ Statewide Bike Ownership

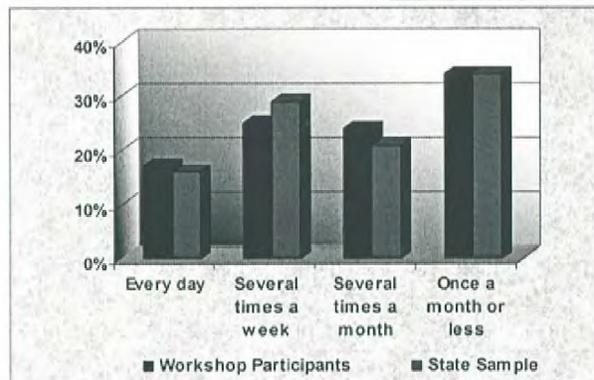


Telephone Survey Results

■ Frequency of bike use



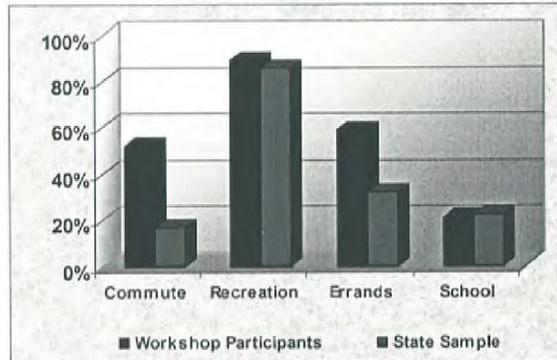
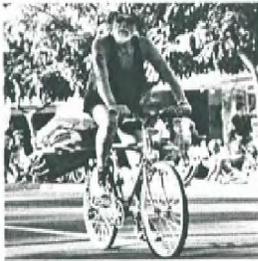
Workshop participants similar to rest of the state in frequency of bike use



Telephone Survey Results

■ Why do people bike?

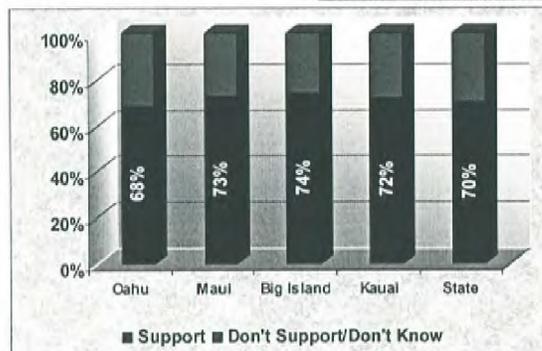
Purpose varies, general population of bike riders less likely to commute or do errands by bike



Telephone Survey Results

■ Support for Changes to Make Hawaii more Bike Friendly

A strong majority of residents support efforts to improve the bicycling environment. Attitudes are consistent across the state.

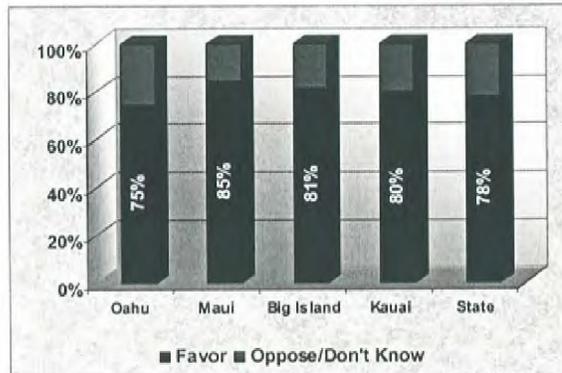


Telephone Survey Results

■ Use of Government funds to Address Biking Issues



An even larger percentage support government funding for bicycling improvements



Telephone Survey Results

■ Specific ideas to improve the bicycling environment

- Bike lanes
- Wide shoulders
- Bike paths
- Maintenance
- Bike education
- Signage

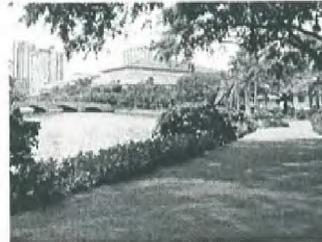


- Enforcement of traffic laws
- Bike Parking
- Orientation rides
- Bike questions on driver's exam

Telephone Survey Results

■ Top 5 ideas with strongest statewide support

- 1 Maintenance
- 2 Bike paths
- 3 Bike education (tie)
- 3 Bike Parking (tie)
- 4 Signage



*Single most favored idea:
bike paths*



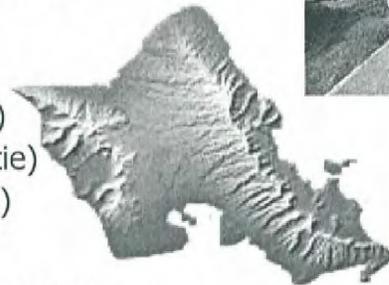
Telephone Survey Results

■ Top 5 ideas with strongest support on Oahu

- 1 Maintenance
- 2 Bike paths (tie)
- 2 Bike Parking (tie)
- 4 Bike education (tie)
- 4 Enforcement (tie)

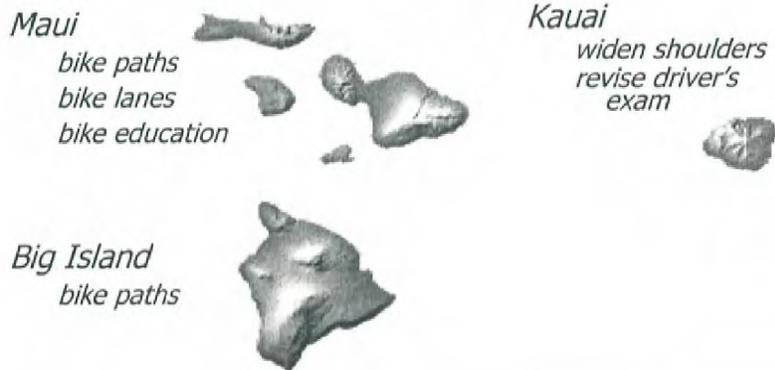


*Single most favored idea:
maintenance*



Telephone Survey Results

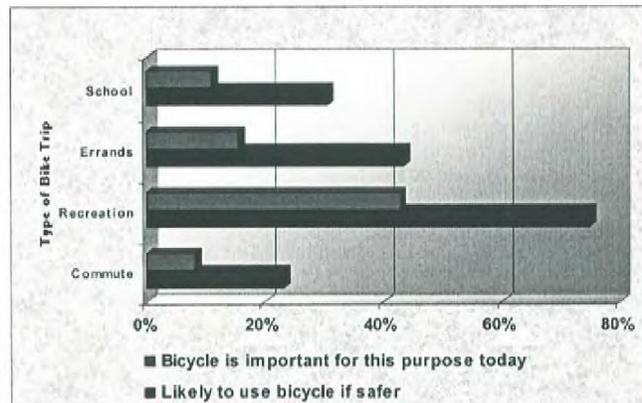
- Most favored ideas on other islands



Dividends of Bicycle Improvements

- Improving bicycling safety and convenience could have a dramatic impact on bicycle ridership

Almost twice as many people would ride if improvements made

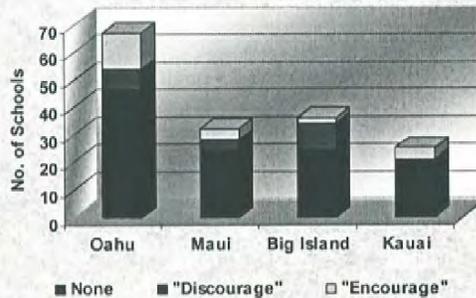


School Survey Results

- School Policy on commuting to school by bicycle



Few schools actively encourage bicycling to school

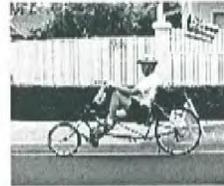


Main Components of Bike Plan Hawaii

- Proposed Goals, objectives and recommended actions
 - What are the aims of the plan?
 - What should the bicycling environment be like in 2025?
 - 5 "E"s: Engineering, Enforcement, Education, Economics, Encouragement
- Future Bikeway Network
- Implementation Program
 - Funding sources
 - Phasing
 - Grassroots activities

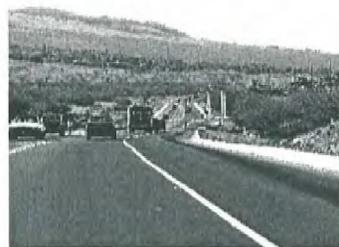
Proposed Goals, Objectives and Policies Bike Plan Hawaii

- Overall Goal of Bike Plan Hawaii
 - To establish bicycling as a safe and convenient mode of transportation for residents and visitors throughout the state



Proposed Goals, Objectives and Policies Bike Plan Hawaii

- Engineering and Planning
 - Objective: Plan and design new and improved transportation facilities to accommodate and encourage use by bicyclists of different skill levels.
 - Recommended Actions:
 - Design roadway projects with adequate space for bicyclists
 - Expand bikeway networks for utilitarian and recreational travel
 - Adopt accepted design guidelines and standards
 - Develop innovative design solutions when environmental conditions warrant



Proposed Goals, Objectives and Policies Bike Plan Hawaii

■ Engineering and Planning

- Recommended Actions (continued)
 - Maintain bikeways in a smooth, clean and safe condition
 - Inspect roadways after being repaired
 - Encourage counties to adopt Bike Plan Hawaii and any local bike plan as a legal foundation to enforce land development regulations
 - Encourage counties to adopt land use plans and regulations that promote bicycling through compact development with suitable bike accommodations
 - Continue integrating bicycles with other modes of transportation
 - Expand future Bike Plan Hawaii to include pedestrians



Proposed Goals, Objectives and Policies Bike Plan Hawaii

■ Education

- Objective: Expand the range of education activities to reduce bicycle crashes and increase ridership.
- Recommended Actions:
 - Support statewide bicycle education programs for children in schools
 - Curricula should include use of bicycle safety equipment, on-road bicycling skills and judgment, and observance of laws
 - Incorporate bicycle awareness into the driver education program, Hawaii drivers' manual, and drivers' license written exam.
 - Monitor and analyze bicycle crash data to improve bicycle safety



Know the Law.

- Any of a child's feet or legs, whether any vehicle traffic law or otherwise the same penalties as adults.
- Always ride in the direction of traffic, never in a back or front wheel.
- When crossing a street, the speed of traffic, when it is in the right-hand lane or path.
- Do not drink or use any other substance that impairs your ability to ride.
- Follow lane markings.
- When riding a night, use front and rear lights and the reflectors.
- Do not use a phone while riding a bicycle or carrying a cell phone.
- It is illegal to ride a bicycle on a sidewalk, but it is not illegal if it is not in use and it is not in the right of way of any sidewalk.
- When riding a bicycle, wear a seat belt while in other vehicles or in a car or truck.



BICYCLE Regulations and Illustrated Safety Tips



Prepared by the Department of Transportation Services
City and County of Honolulu

BICYCLE SAFETY

Proposed Goals, Objectives and Policies Bike Plan Hawaii

■ Education

- Recommended Actions: (continued)
 - Evaluate crash reporting system and recommend changes to improve usefulness
 - Support continuing education programs on state-of-the-art bicycle facility planning and design for transportation professionals.
 - Create an on-line resource center. Website should allow feedback from bicyclists.
 - Increase awareness about the health and fitness benefits of bicycling.
 - Support the establishment of a Safe Routes to Schools Program



Proposed Goals, Objectives and Policies Bike Plan Hawaii

■ Enforcement

- Objective: Strengthen enforcement efforts to prevent illegal and reckless behavior by motorists and bicyclists and safeguard those using the bicycle network
- Recommended Actions:
 - Work with law enforcement to reduce traffic violations by bicyclists that might result in serious crashes with motor vehicles or pedestrians
 - Work with law enforcement to reduce motorist errors and aggressive behaviors



Proposed Goals, Objectives and Policies Bike Plan Hawaii

■ Enforcement

- Recommended Actions:(continued)
 - Review and update, as needed, bicycle-related traffic laws
 - Review, modernize, and streamline the bicycle registration system.
 - Work with law enforcement agencies to reduce crime on bicycle corridors



Proposed Goals, Objectives and Policies Bike Plan Hawaii

■ Economics

- Objective: Increase awareness about the economic benefits of increased bicycle use
- Recommended Actions:
 - Identify opportunities to enjoy the islands' diverse scenic beauty via bicycle
 - Consider visitors when designing bicycle facilities, such as signs or markers that facilitate way-finding



Proposed Goals, Objectives and Policies Bike Plan Hawaii

■ Economics

- Recommended Actions: (continued)
 - Work with the Hawaii Tourism Authority and other appropriate entities to develop promotional material
 - Disseminate informational material about the individual and societal cost-savings of replacing car trips with bike trips



Proposed Goals, Objectives and Policies Bike Plan Hawaii

■ Encouragement

- Objective: Increase bicycle trips by promoting the personal and community benefits of this mode of travel
- Recommended Actions:
 - Sponsor statewide promotions and events to increase awareness of bicycling opportunities
 - Distribute maps and guides about bicycle facilities and programs
 - Support bicycle advisory committees in all counties



Proposed Goals, Objectives and Policies Bike Plan Hawaii

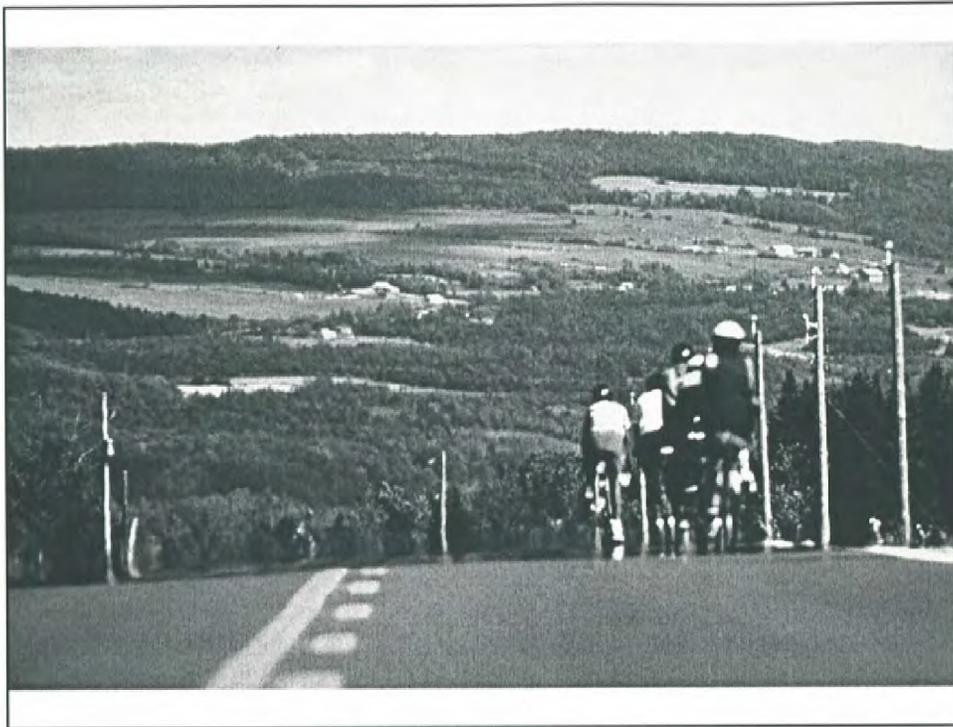
■ Encouragement

- Recommended Actions: (continued)
 - Coordinate and encourage the involvement of bicycle advocates, citizens and local officials in implementing projects and achieving the objectives of this plan
 - Develop, implement, and promote bicycle commuter incentive programs
 - Encourage employers to support more bicycle commuting
 - Support transportation conferences to promote and exchange ideas and information on bicycling in Hawaii and elsewhere



Design Problems and Solutions Bike Plan Hawaii

- SCI presentation



Bicycling Brings Tourism \$

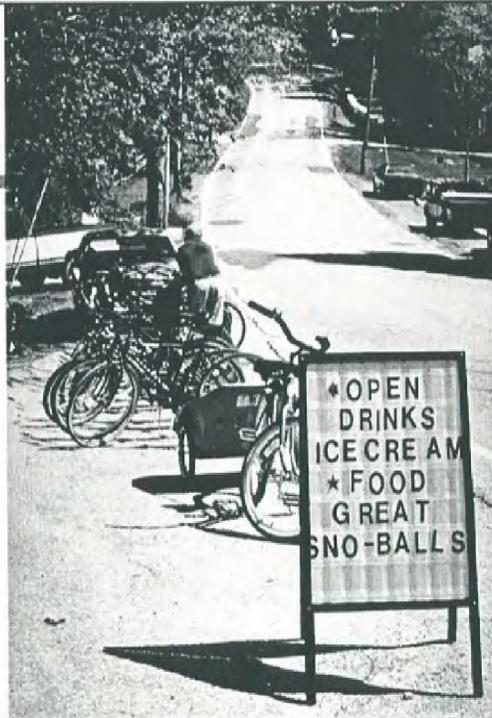
- Bike tourists tend to be young and affluent - with annual incomes of \$75,000+
- 1997 survey found that bike tourists in Delaware spend between \$35-\$85 per day
- Bike tourism in Vermont contributes more to the economy than the maple syrup industry

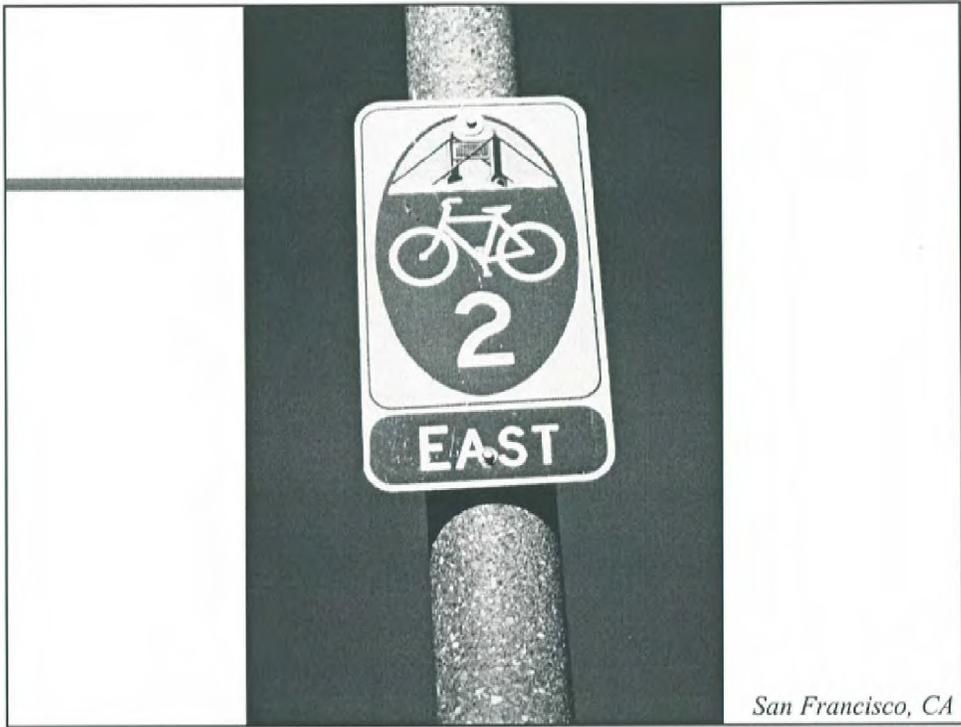
Sources: Adventure Travel Report, Delaware DOT

Bicycle Tourism

- Outdoor recreation is the second most popular activity for leisure travelers, behind shopping
- 1/3 of all leisure trips include some form of outdoor recreation
- 27 million travelers took bicycling vacations in past 5 yrs (ranks in the top three most popular outdoor vacation activities)

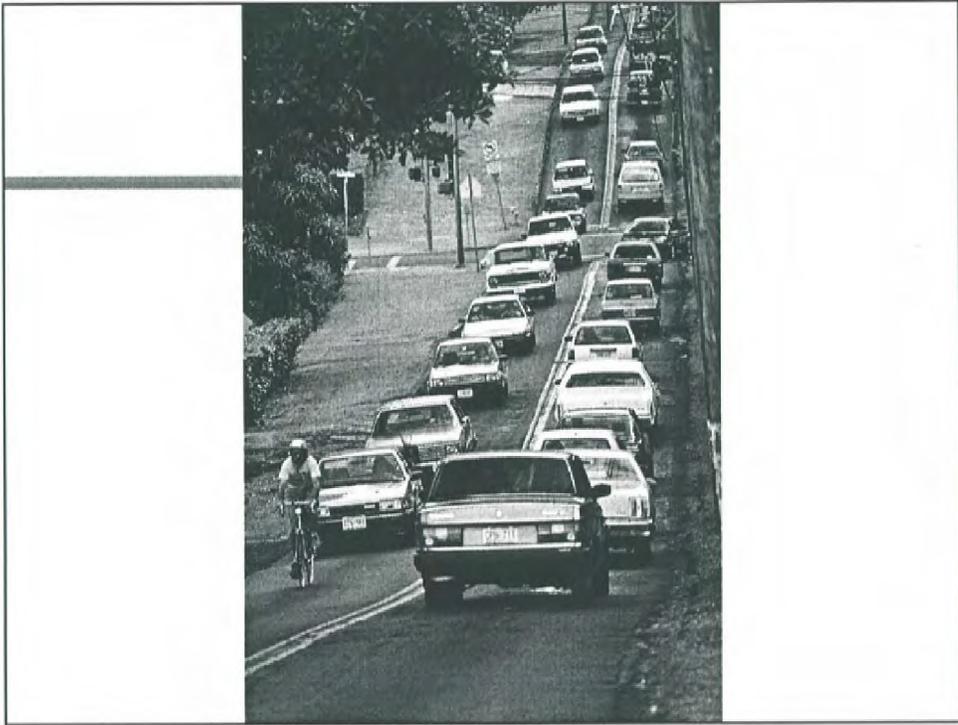
Source: Travel Industry Association (TIA)





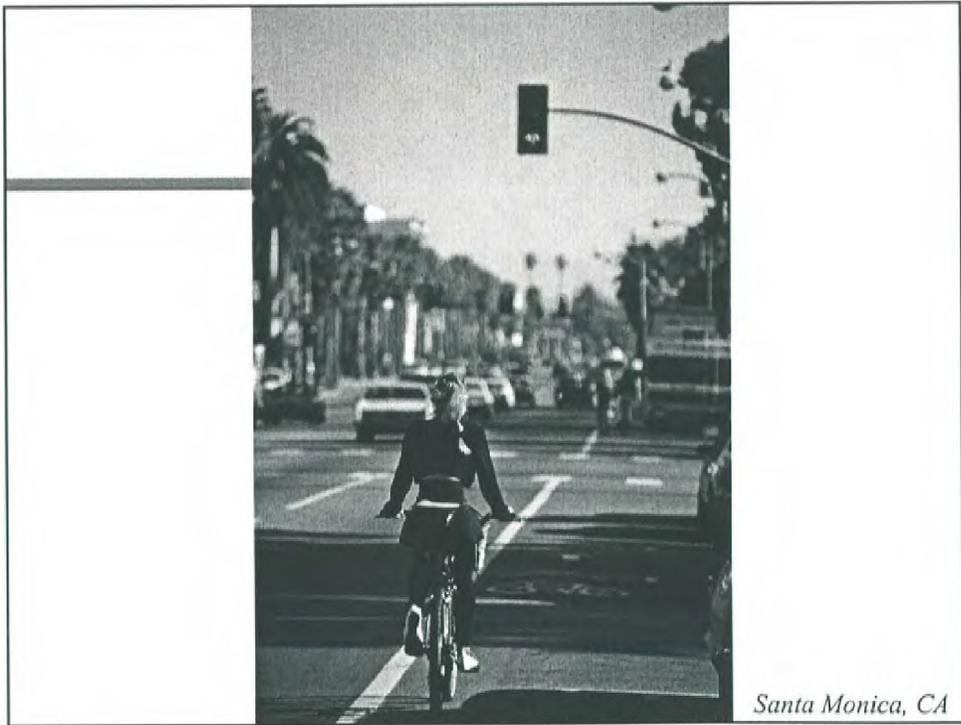
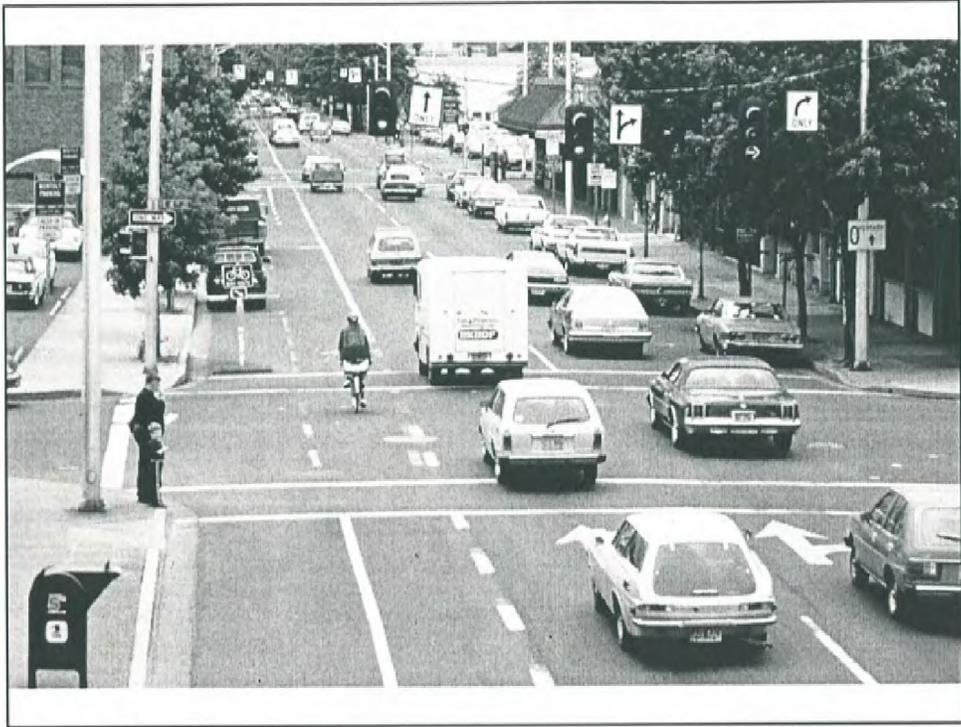
Bicycle LOS A





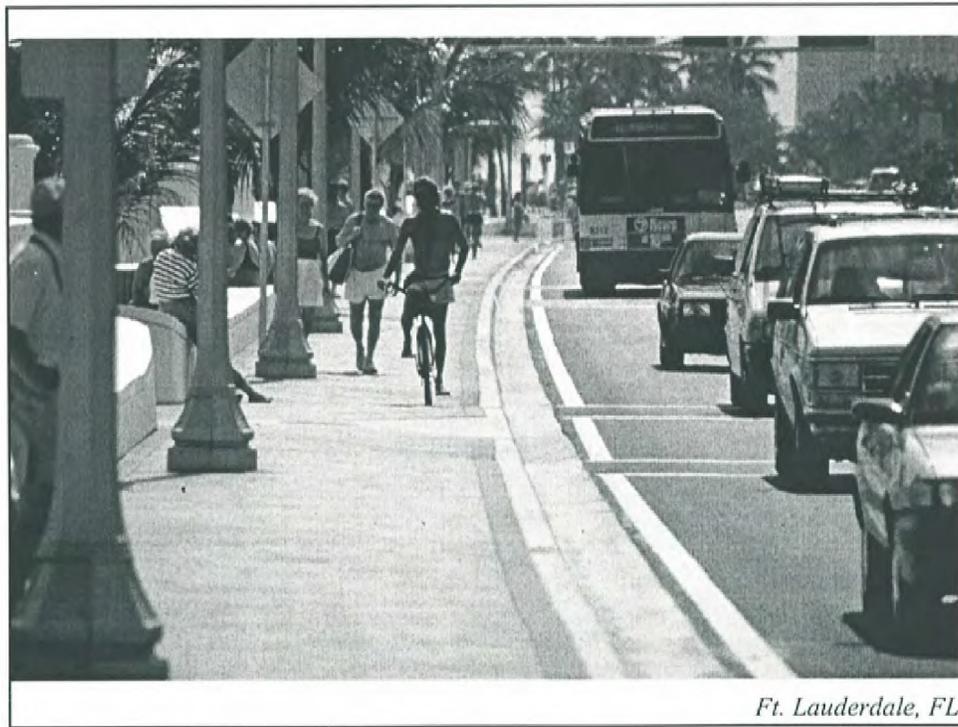
Bike Lanes







Sarasota, FL



Ft. Lauderdale, FL

Wachtel Study Conclusions

1. Bicyclists traveling on sidewalk:
1.8 times greater risk than riding in a travel lane

ITE Journal, 1994



Wachtel Study Conclusions

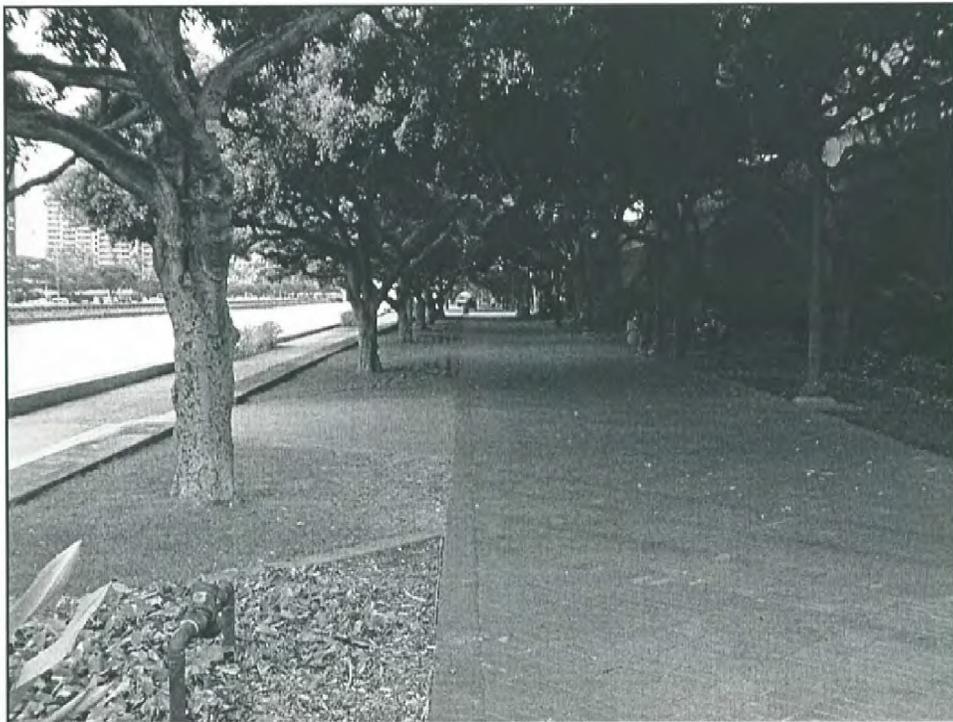
2. Bicyclists traveling *against* traffic flow:
3.6 times greater risk than riding with traffic

ITE Journal, 1994



Paths

- Bike Paths or Shared use paths are desired by many users.
- When appropriate, paths provide comfortable facilities for bicyclists.
- However, in urban areas, paths usually must cross city streets.
- These intersections of roads and paths must be handled carefully.
- Paths adjacent to roads can be especially difficult to make user-friendly.





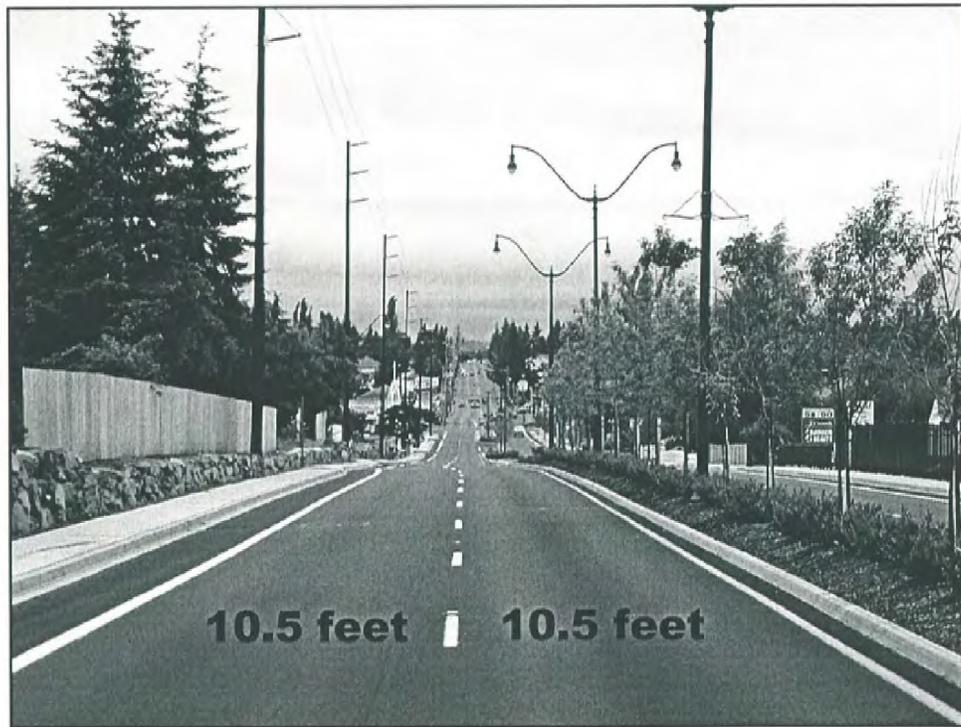


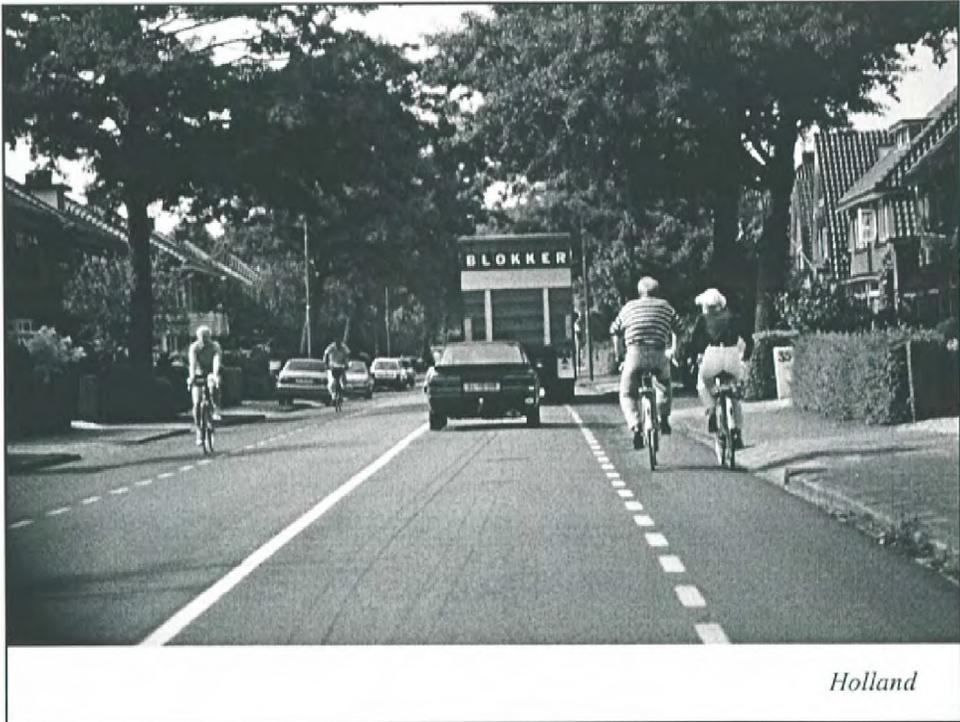
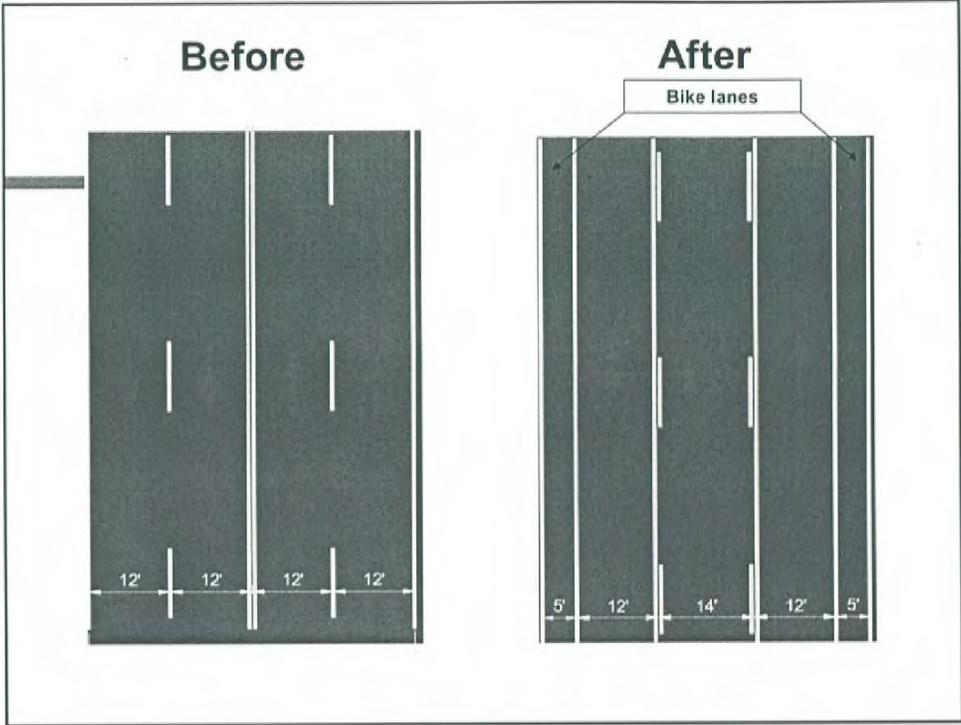
Where Paths Are Best

- Along rivers, oceans, or old railroad grades.
- Short paths to connect cul-de-sacs
- To bridge obstacles such as freeways or rivers.
- Where grade separation from major roadways can be achieved.

Road Restriping







Holland

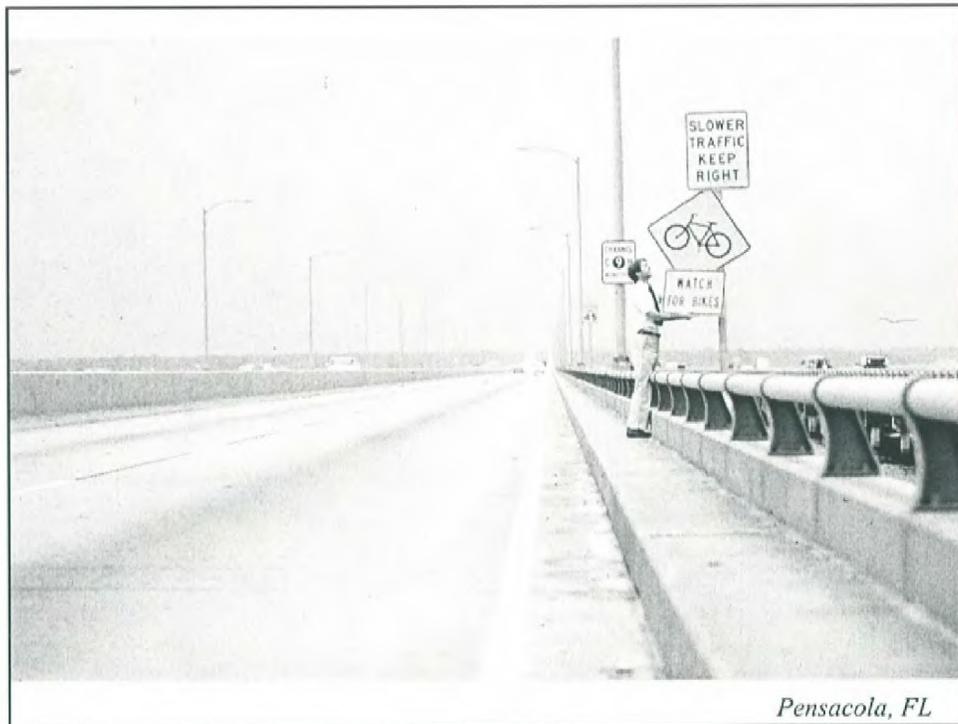


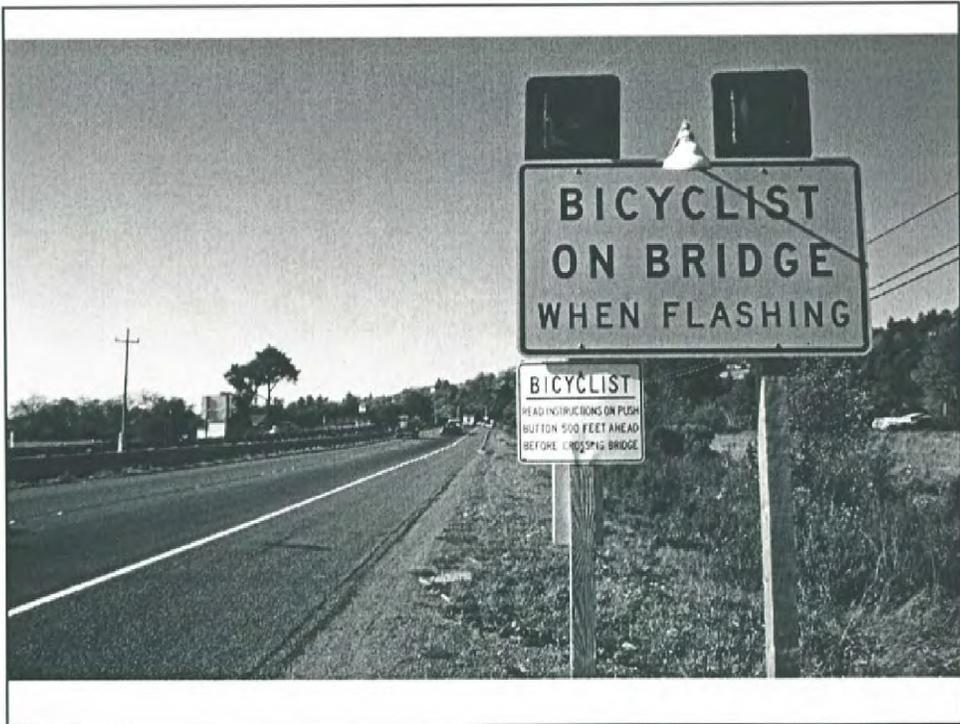
Honolulu, HI

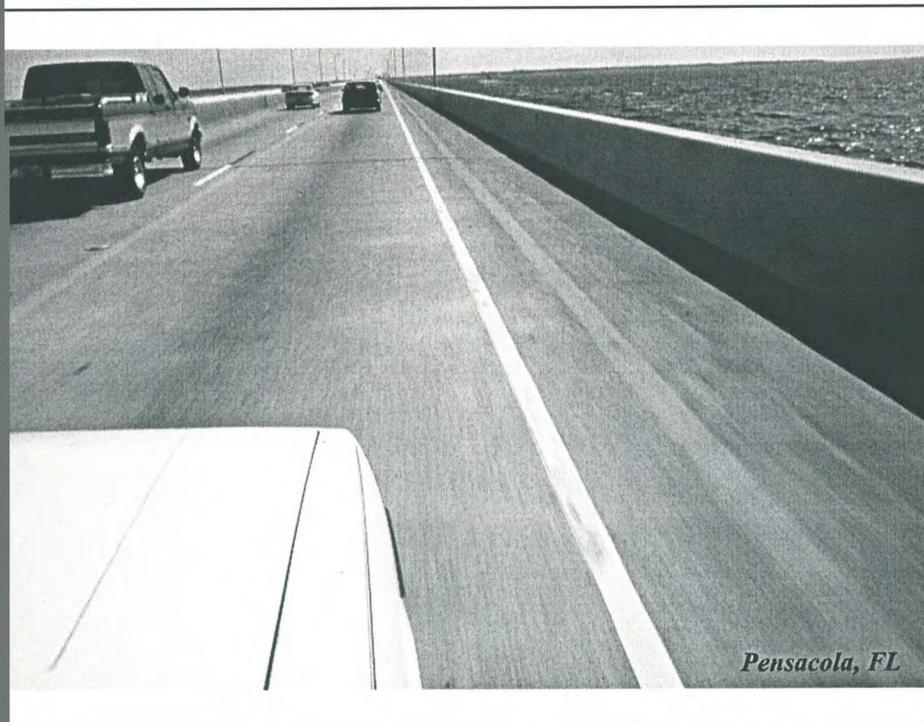


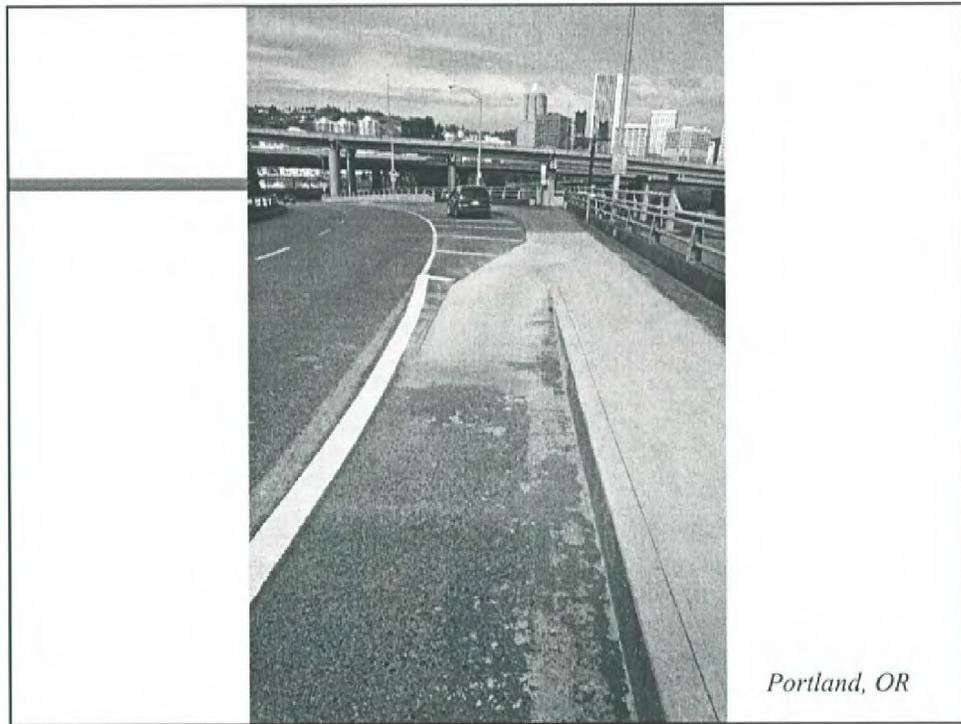
Santa Barbara, CA











Bikeway Evaluation Criteria

- *All projects assumed to improve bicyclist safety*
- Evaluation Criteria
 - Mobility and Access
 - Does the bikeway serve a population center?
 - Does it provide access to a public facility (school, park, library) or commercial area?
 - Is it a missing link in the bicycle network?
 - Does it provide a direct route (major street)?
 - Does it provide an alternate route (street with lower traffic)?
 - Users
 - Is it a multi-user/multi-mode facility (also accommodates pedestrians, wheelchairs, rollerskates, etc)?
 - Would it attract visitors (and promote economic development)?
 - Has the community expressed a preference for the project?

Bikeway Evaluation Criteria

- Evaluation Criteria (continued)
 - Safety
 - Are there non-vehicular hazards (steep slopes, drop-offs, blind curves, prone to rockslides)?
 - Is it accessible by emergency vehicles?
 - Implementation and Cost
 - Has the project begun (e.g., initial planning)?
 - Need to acquire additional right-of-way?
 - Is there a risk of loss to development?
 - Aesthetics
 - Does the bikeway have scenic or cultural value?
 - *Your input*
 - *Do you think these criteria are important?*
 - *What other factors should be evaluated?*

Bike Plan Hawaii

- We want to hear from you...
 - Fill out Evaluation Criteria Form
 - Review bikeway maps
 - Suggest additions, deletions, changes
 - Use dots to vote your top three proposals
 - Comment on preliminary Goals, Objectives and Recommended Actions



Bike Plan Hawaii



State of Hawaii
Department of Transportation



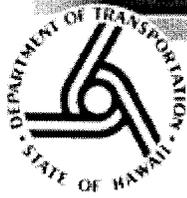
Federal Highway Administration

In cooperation with
City and County of Honolulu
County of Kauai
County of Maui
County of Hawaii

2nd
Round
Workshops



Summary of Workshop 2 Publicity (5/15/02)				
	Big Island	Kauai	Maui	Oahu
Invitation Letter w/ Flyer(s)				
Local contacts (county agencies, district engineers, bike advocates)	16	7	12	2
Attendees from Workshop 1	51	6	10	30
County Mayor and Councilmembers	10	8	10	7
Neighborhood boards/ Community associations		1	7	16
Military installations				3
Bike shops & businesses	12	5	12	11
Business groups	3	3	1	
Flyers--Mailed				
				OMPO CAC mailing list (entire)
Telephone survey respondents	16	7	7	27
Flyers--Distributed				
				Haleiwa Metric Century Ride 4-21-02 (flyer in registrant packet)
State Legislators (House and Senate)	9	5	8	27
E-mail Invitations				
Workshop 1 attendees	4	7	2	3
Telephone survey respondents	3	1	6	18
Presentations				
				MACOB/HBL
Electronic newsletters				
	Dep. Mayor Peter Young PATH			HBL--400+ households
Press release distribution (DOT)				
Print media outlets	4	3	5	11
Radio/TV	3	3	1	18
Press release distribution (KI)	1			2
Other				
Feature article by Diana Leone, Star Bulletin, April 29, 2002				
Feature story by Brooks Baer, KGMB TV, 10 O'Clock News, April 30, 2002				
Webpage				
http://www.state.hi.us/dot/highways/bike/bikeplan/index.htm				



Public Affairs

Department of Transportation

Aloha!

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2002 Press Release

NEWS RELEASE

Department of Transportation

Contact: Marilyn Kali, Public Information Officer
Phone: (808) 587-2160
Fax: (808) 587-2313

April 15, 2002

02-68

The state Department of Transportation hold a second round of community workshops as part of a planning effort to update the statewide bicycle master plan.

The workshop schedule is as follows:

Oahu

- Monday, April 29, Hawaii Kai Library, 6:30 p.m.
- Tuesday, April 30, Kaneohe Community and Senior Center, 6:30 p.m.
- Monday, May 13, Kapolei Elementary School, Cafetorium, 6:30 p.m.
- Tuesday, May 14, Mililani Recreation Center III, 6:30 p.m.

Maui

- Wednesday, May 1, Wailuku Community Center, 6 p.m.

Kauai

- Thursday, May 2, War Memorial Convention Hall, Lihue, 6:30 p.m.

Hawaii

- Monday, May 6, King Kamehameha Hotel, Meeting Room, Kailua-Kona, 6 p.m.
- Tuesday, May 7, Parker Ranch Town Hall, Waimea, 6 p.m.
- Wednesday, May 8, Pahoehoe Neighborhood Center, Puna, 6 p.m.
- Thursday, May 9, Komohana Agricultural Center, Conference Room A, Hilo, 6 p.m.

All interested persons are invited to participate. The workshops will review ideas and suggestions generated by the previous workshop, the screening process used to evaluate bikeway proposals, results of the evaluation, and draft goals, objectives, and policies. Participants will have an opportunity to comment on various components of the plan.

Directions to workshop locations and additional information can be found at:
www.state.hi.us/dot/highways/bike/bikeplan/index.htm or call Vincent Llorin, State Bicycle and Pedestrian Coordinator at (808) 692-7675.

###

[Hawaii State Home](#) | [DOT Home](#) | [Public Affairs](#) | [Airports](#) | [Harbors](#) | [Highways](#)

Sample Invitation Letter—Workshop 2

Thursday, March 28, 2002

ADDRESS BLOCK

Dear Fellow Bicyclists,

Community Workshop for Bike Plan Hawaii

On behalf of the State Department of Transportation, we cordially invite you to attend a workshop for *Bike Plan Hawaii* scheduled for **Thursday, May 2, 6:30-8:30 pm at the War Memorial Convention Hall.**

Bike Plan Hawaii is the statewide bicycle master plan. It contains goals, objectives, and policies to achieve the type of bicycling environment desired by the citizens of Hawaii. The plan addresses bicycle facilities (such as routes, lanes, paths, and parking), as well as issues of maintenance, education, enforcement of traffic laws, economic development, and promotion. Another important component of the plan is a map showing a network of bikeways as it might look in the future, along with priorities for how to get there.

The meeting on May 2 is a follow-up to one held in November during which we heard the Kauai community's ideas for making bicycling safer and more enjoyable. We will review those ideas and discuss how the plan is shaping up. Your suggestions and input continue to be very important.

We hope to see you at the workshop, and would appreciate it if you would inform others of the upcoming event.

If you have any questions, please call me or Nancy Nishikawa at (888) 898-8886.

Aloha,
KIMURA INTERNATIONAL, INC.

Glenn T. Kimura

cc: Vincent Llorin, State Bicycle and Pedestrian Coordinator, Dept of Transportation

The Hawaii State DOT and the FHWA are updating
the 1994 Bike Plan for the State of Hawaii.

COMMUNITY WORKSHOPS

Bike Plan Hawaii

Learn about new bikeway proposals. Share
your ideas for making Hawaii a safer, better
place to bicycle. Children welcome!



KAUAI WORKSHOP

Lihue, Kauai - May 2, Thursday, 6:30 pm
War Memorial Convention Hall



For directions and further information, please visit
our website <www.state.hi.us/dot/highways/bike/bikeplan/index.htm>
or call Kimura International, Inc., toll free at (888) 898-8886.

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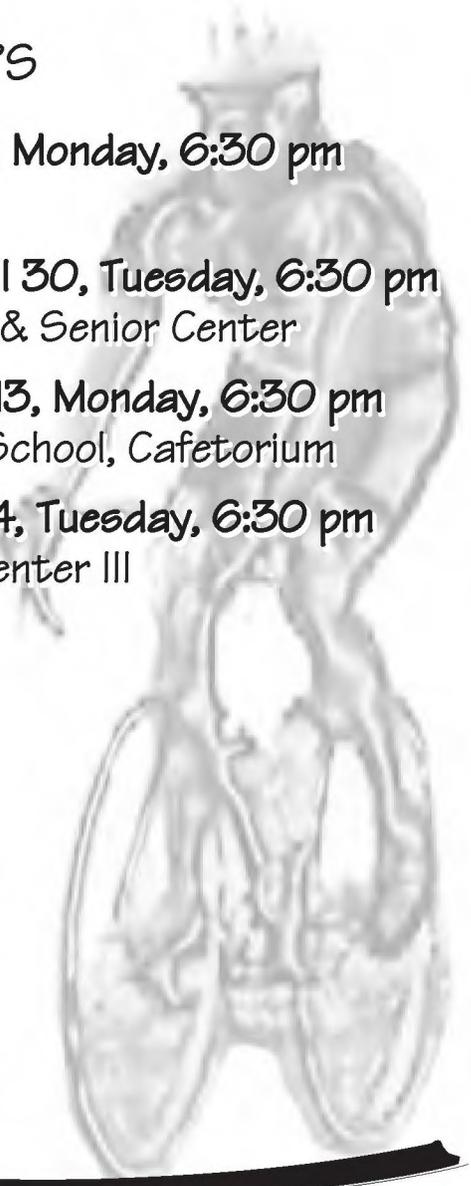
OAHU WORKSHOPS

East Oahu - April 29, Monday, 6:30 pm
Hawaii Kai Library

Windward Oahu - April 30, Tuesday, 6:30 pm
Kaneohe Community & Senior Center

Leeward Oahu - May 13, Monday, 6:30 pm
Kapolei Elementary School, Cafetorium

Central Oahu - May 14, Tuesday, 6:30 pm
Mililani Recreation Center III



For directions and further information, please visit
our website <www.state.hi.us/dot/highways/bike/bikeplan/index.htm>
or call Kimura International, Inc., at 944-8848.

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MAUI WORKSHOP

Wailuku, Maui - May 1, Wednesday, 6:00 pm
Wailuku Community Center



For directions and further information, please visit
our website <www.state.hi.us/dot/highways/bike/bikeplan/index.htm>
or call Kimura International, Inc., toll free at (888) 898-8886.

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COMMUNITY WORKSHOPS

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BIG ISLAND WORKSHOPS

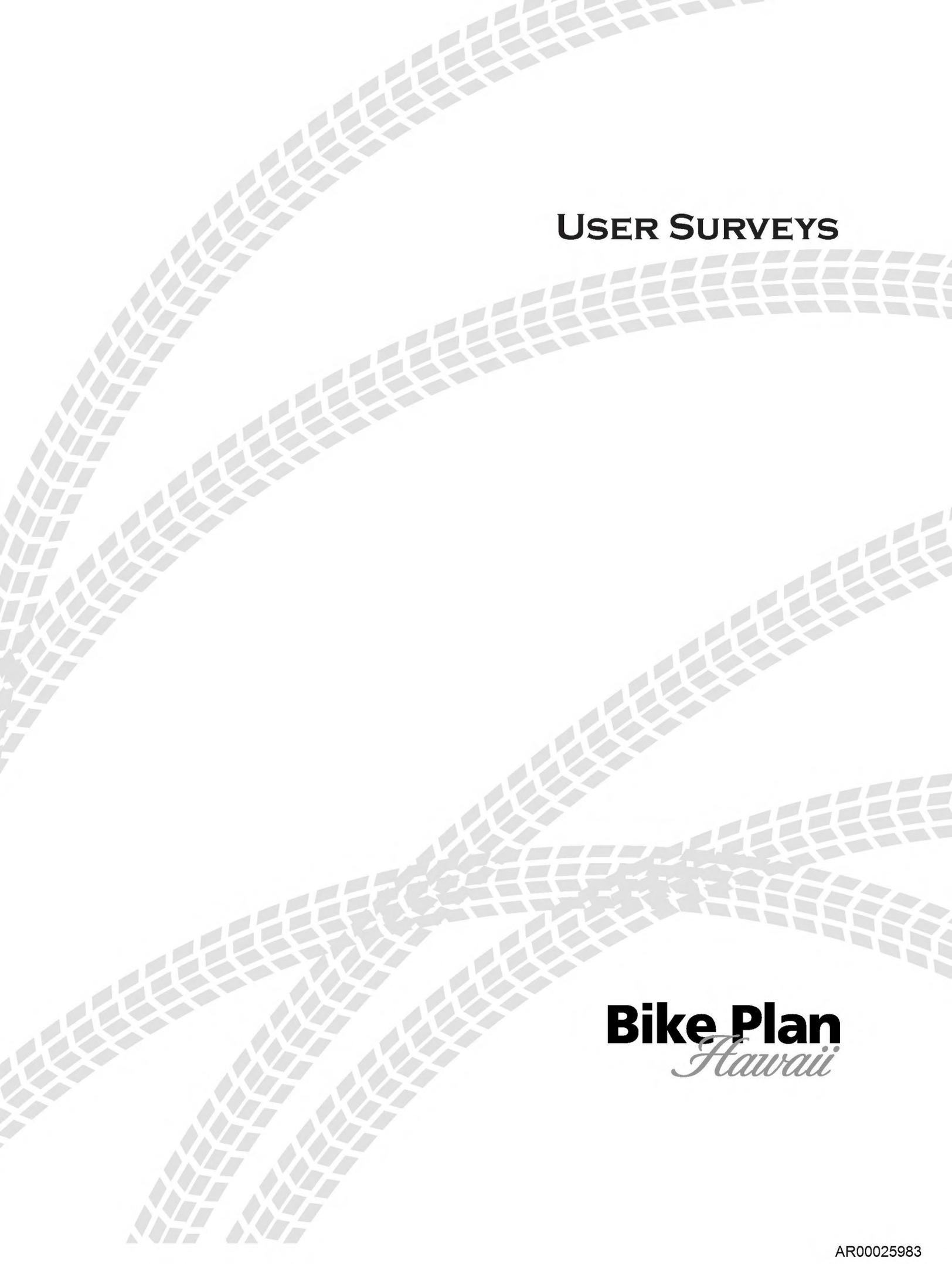
Kona, Hawaii - May 6, Monday, 6:00 pm
King Kamehameha Hotel, Conference Room

Waimea, Hawaii - May 7, Tuesday, 6:00 pm
Parker Ranch Town Hall

Puna, Hawaii - May 8, Wednesday, 6:00 pm
Pahoa Neighborhood Center

Hilo, Hawaii - May 9, Thursday, 6:00 pm
UH Komohana Ag. Complex, Conference Room A

For directions and further information, please visit
our website <www.state.hi.us/dot/highways/bike/bikeplan/index.htm>
or call Kimura International, Inc., toll free at (888) 898-8886.



USER SURVEYS

Bike Plan
Hawaii

Results of the Telephone Survey

To broaden the population base from which bicycle user data was obtained, a telephone survey was conducted in February 2002. The telephone survey reached a cross-section of 402 residents on the islands of Oahu, Kauai, Maui and the Big Island. On Oahu, the survey was limited to households in the Leeward, Central, Windward, and East Honolulu regions—and excluded Urban Honolulu. The survey’s geographic coverage corresponded to the scope for updating *Bike Plan Hawaii*.

The final results can be generalized *only* to the surveyed areas as a whole. For the total sample of 402, the maximum sampling error is +/- 4.9% at a 95% confidence level.

Sampling was proportionate to each area’s representation in the identified population, as follows:

	% Target Population	Final Number of Interviews
Kauai	6%	25
Oahu (selected areas)	59%	237
Maui	15%	59
Hawaii (Big Island)	20%	81

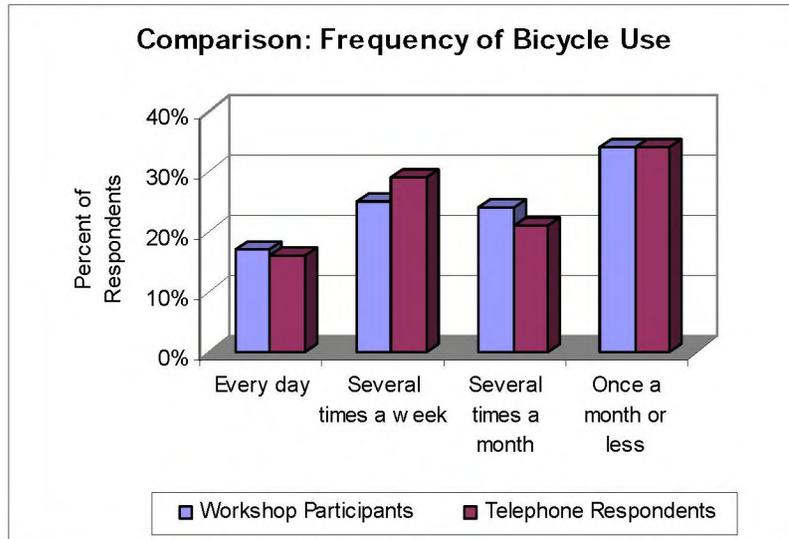
Field dates for the telephone survey were February 10 to 13, 2002. Interviews were based on a questionnaire with interviews averaging 10 minutes. (The questionnaire is reproduced in Appendix A.) The sampling frame was generated at random by the survey research firm using a random digit dialing program. This random-digit dialing method includes unlisted, as well as listed telephone numbers, helping to promote an unbiased sample. All interviewing was conducted from the Ward Research Calling Center. Interviews were conducted between the hours of 5:00 p.m. and 9:00 p.m. on week nights and 9:00 a.m. to 9:00 p.m. on weekends.

The questionnaire used in the telephone survey contained several questions that were identical to the survey administered to workshop participants. This enables a comparison between workshop participants (presumably those with a higher intrinsic interest in bicycling) to a broader sample of the state’s population. Thus several charts below show responses from the two surveys side by side.

Frequency of Bicycle Use

There is a high degree of similarity in the frequency of bicycle use between workshop participants and telephone survey respondents (Figure 1). In both groups, the same percentage of people (66%) reported that they ride their bicycles regularly—at least several times a month. Telephone respondents were slightly less likely to ride every day; however, they were slightly more likely to ride several times a week.

Figure 1

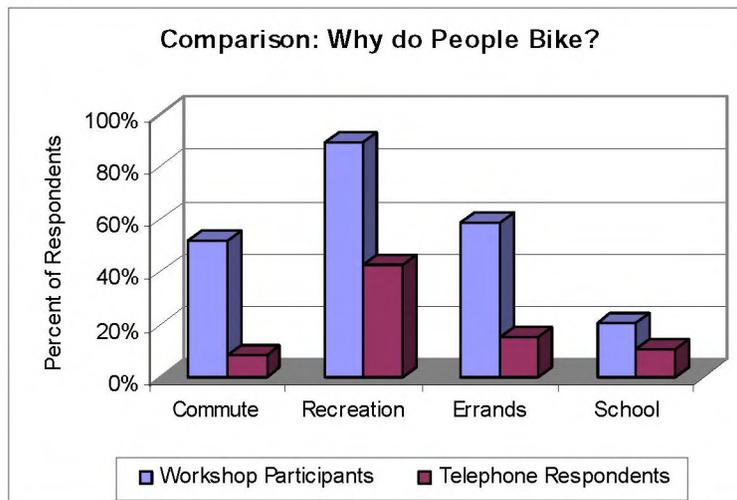


Source: Kimura International, Inc., 2002

Purpose of Bicycle Use

The survey asked respondents to indicate the importance of bicycling for four different purposes: commuting to work, recreation, running errands, and commuting to school. Telephone respondents were most likely to say that bicycling is *important* or *somewhat important* for recreational purposes, and least likely to say that bicycling is *important* or *somewhat important* for commuting to work, as seen in Figure 2. Across all four categories, bicycling is less important for telephone respondents than for workshop participants. For example, in the recreation category, approximately 43% of telephone respondents said that bicycling is *very important* or *somewhat important*, compared to 89% of workshop participants.

Figure 2

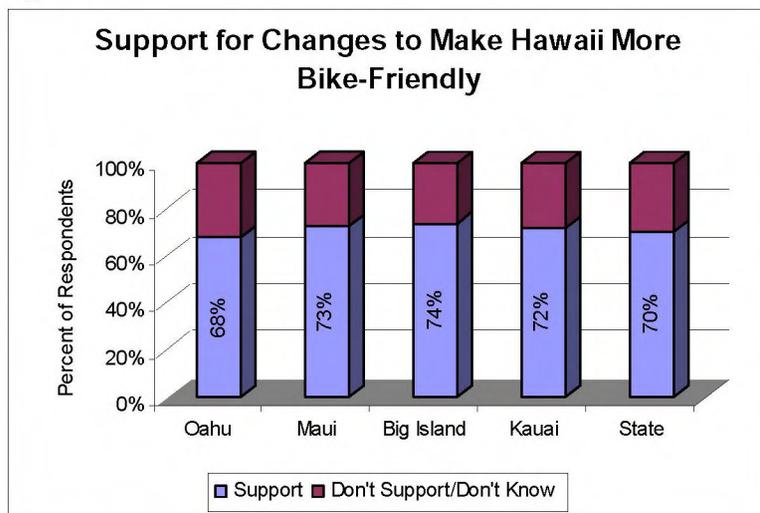


Source: Kimura International, Inc., 2002

Support for Improvements to the Bicycling Environment

Telephone respondents were asked whether they would support changes to make Hawaii more “bicycle friendly.” Seventy percent of all respondents replied affirmatively. In Figure 3, only the bar farthest to the right (representing the total sample) is statistically significant—in other words, there is a 95% probability that the result is non-random and the finding can be generalized to the study area as a whole. The same claim cannot be made for the island-specific results, nevertheless it is interesting to note that the island-by-island breakdown shows a consistently high degree of support for bicycle improvements among the survey respondents. A follow-up question asked if the respondent would support the *use of government funds* to improve the bicycling environment. Overall, 73% of respondents supported public funding.

Figure 3



Source: Kimura International, Inc., 2002

When asked what type of changes are desired, and presented with a list of 10 possible ideas, the top 5 ideas that generated the strong support among telephone respondents were:

- Maintenance
- Bike education
- Bike paths
- Bike parking
- Enforcement

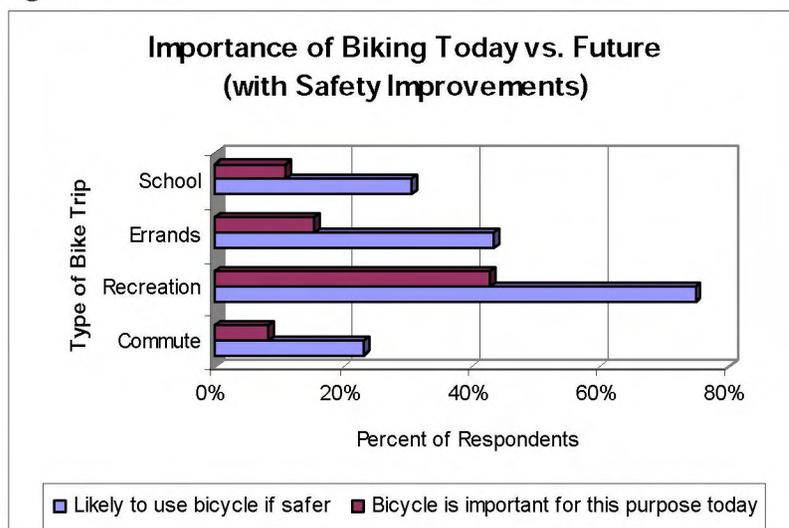
The island-specific tallies are not statistically significant and, therefore, the results only represent the views of the respondents. Nevertheless, they show interesting patterns with maintenance, bike paths, and bike parking mentioned regularly. On the other hand, there were differences in the priorities expressed. Kauai respondents tended to favor stronger enforcement of traffic laws and improved signage, while Maui and Big Island respondents tended to rank bicycle education more highly.

Kauai	Oahu	Maui	Hawaii
• Maintenance	• Maintenance	• Maintenance	• Maintenance
• Enforcement	• Bike Paths	• Bike Education	• Bike Education
• Bike Paths/Signage	• Bike Parking	• Bike Paths/Parking	• Bike Paths/Parking

Potential Effects of Bicycling Improvements

Would improvements to the bicycling environment make any difference? Respondents were asked: If bicycling were a safer mode of transportation, how likely would you be to use a bicycle more frequently? In Figure 4, the responses to this question (an indicator of possible, future behavior) were juxtaposed against the responses shown previously in Figure 2 (an indicator of current behavior). With improved conditions for bicyclists, the likelihood of future bicycle use in each of the four categories is significantly higher than current use. Twice as many respondents expressed an inclination toward bicycling for commuting and running errands in the future, than they do today. In the area of recreational trips, 75% stated that they are *very likely* or *somewhat likely* to use the bicycle in the future compared to 43% today.

Figure 4



Source: Kimura International, Inc., 2002

Demographic Analysis of Telephone Survey Respondents

A major component of the public outreach effort to comply with Title VI/Environmental Justice was a random telephone survey in the project area. A demographic analysis of respondents in the sample group indicates that lower income households and ethnic minority groups were well represented.

Methodology

The survey plan called for consultant Ward Research to complete telephone interviews with 402 respondents, contacted through a random digit dialing protocol. The sample size was determined to be sufficient to obtain a maximum sampling error of $\leq 5\%$ at a 95% confidence level. The random digit dialing program includes unlisted as well as listed telephone numbers, thereby helping to promote an unbiased sample.

To focus available resources on the geographic areas covered by the current planning study, namely suburban and rural Oahu, Kauai, Maui, and the Big Island, the sample pool included all households with telephone prefixes corresponding to those general areas. Telephone prefixes for urban Honolulu, as well as Molokai and Lanai were excluded from the sample pool. Therefore, the results can be generalized only to the areas surveyed, and not to the State of Hawaii as a whole.

Sampling was proportionate to the population size of each of the selected areas. Table 1 shows the number of completed interview by area.

Table 1: Geographic Breakdown of Interviews

Region	Final Number of Interviews	Percent of Target Population
Kauai	25	6%
Oahu	237	59%
Central Oahu	94	
East Oahu	85	
Leeward Oahu	31	
Windward Oahu	27	
Maui	59	15%
Big Island	81	20%
Total	402	100%

Ethnic Breakdown

Figure 1 shows the distribution of respondents by ethnicity.

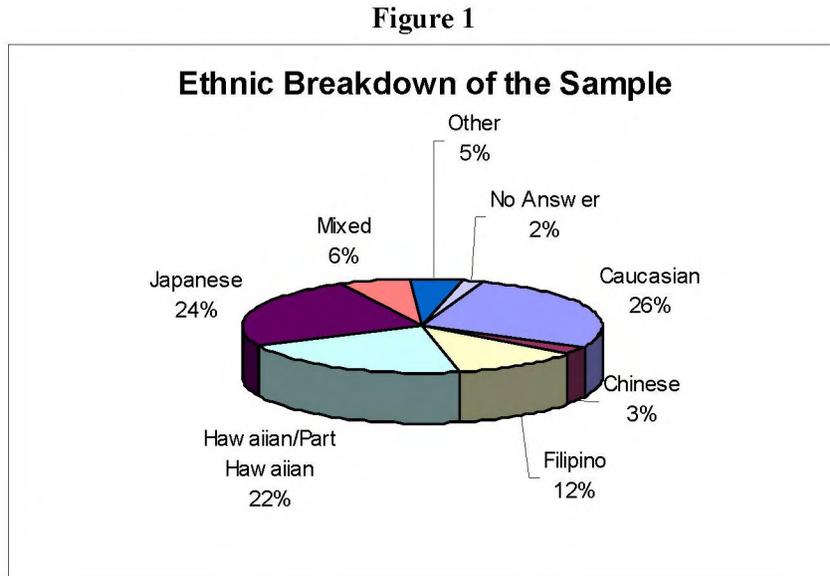


Table 2 compares the ethnicities of survey respondents compared to the statewide population as reported in the 2000 Census.

Table 2: Ethnic Breakdown of Sample vs. Census Population

Ethnicity	Survey Respondents	Statewide Population (2000 Census)
Caucasian	26%	24%
Chinese	3%	5%
Filipino	12%	14%
Hawaiian (Part Hawaiian)	22% Hawaiian/Part Hawaiian	7% Native Hawaiian only
Japanese	24%	17%
Mixed (or More than One Race)	6%	21% Including Persons who may be Part Hawaiian
Other	5%	12%
No Answer	2%	N.A.
Total	100%	100%

One of the most significant disparities between the two is the disproportionately large percentage of Japanese in the survey (24%) compared to the general population (17%). Another disparity is the disproportionately small percentage of survey respondents who identified themselves as “Other” compared to the size of this group in the general population.

Because the Hawaiian/Part Hawaiian category used in the survey is different from the Census’s method of accounting for single race and multi-racial persons, it is not possible to determine the extent to which the sample may not be proportional to the general population. On the other hand, with as much as 22% of the sample composed of Hawaiian and Part Hawaiian persons, it appears that the survey has successfully captured the views of individuals from groups that traditionally have not participated in mainstream planning processes.

Income Breakdown

Respondents were asked to indicate which income range they fell into based on total household income in 2001 before taxes.

Table 3: Household Income of Survey Respondents in 2001

Income Range	All Respondents	Kauai	Oahu	Maui	Big Island
Under \$25,000	<i>13%</i>	<i>20%</i>	<i>10%</i>	<i>15%</i>	<i>19%</i>
\$25,000- but under \$35,000	<i>15%</i>	<i>36%</i>	<i>11%</i>	<i>20%</i>	<i>20%</i>
\$35,000- but under \$50,000	<i>16%</i>	4%	<i>14%</i>	<i>25%</i>	21%
\$50,000- but under \$75,000	16%	16%	19%	15%	11%
\$75,000 and above	24%	12%	32%	14%	10%
No Answer	15%	12%	15%	10%	20%

Percentages shown in bold, italicized font were summed to determine proportion of the sample with household incomes below the respective area’s median.

Table 4 shows median household income as reported by the 2000 Census (based on income in 1999). The median is a statistic demarcating a mid-point with 50% of the units higher than or above the point and 50% of the units lower than or below the point.

Because the Census-reported median is two years older than the survey data, we can assume that the actual median in 2001 would have been somewhat higher than the amounts shown below, due to inflation and wage adjustments.

Table 4: Median Household Income for the State of Hawaii and Counties

Geographic Area	Median Household Income (1999)
Kauai County	\$45,020
Honolulu County (Oahu)	\$51,914
Maui County	\$49,489
Hawaii County	\$39,805
State of Hawaii	\$49,820

Source: 2000 Census

Excluding respondents who did not answer, 44% of all respondents belong to households with incomes below the state's median. Therefore, the overall sample appears to be skewed slightly toward respondents with higher than average incomes. Relative to island-specific median income levels, the samples on Kauai and Maui over-represent households with incomes below their county's median; while Oahu and the Big Island samples over-represent households with incomes higher than their county's median.

WARD RESEARCH, INC.

BIKE SURVEY WR2861

Record Number _____ (v01)

Interviewer Name _____ Time Ended _____

Date _____ I.D.# _____ (v02) Time Started _____

Respondent Name _____ Total Minutes _____ (v03)

Respondent Phone Number - (v04)

O'ahu Only (area of island):

Area 1	Oahu..... 01	
Area 2	Maui..... 02	
Area 3	Big Isle..... 03	
	Kauai 04	(v05)

Hello, my name is ____ from Ward Research, a professional market research firm here in Honolulu. We are conducting a short survey today to help the State of Hawaii plan for bicycle transportation in local communities. I would like to ask you a few questions if I may. This survey will take no more than 10 minutes and let me assure you that all your answers will remain completely confidential.

First, let me begin by asking you ...

Q1a. How many automobiles are there at your home address? automobiles

Q1b. Does anyone in your household ride The Bus on a regular basis?

yes 01
no 02

Q1c. And how many bicycles are there at your home address? bicycles

(INTERVIEWER: IF ONE OR MORE IN Q1C, CONTINUE. ELSE SKIP TO TO Q5.)

Q2. And in order to get a better understanding of bicycle riders, please tell me the age and gender of each person in your household who rides a bicycle.

Q2.	AGE	GENDER
Bicycle Rider #1		M F
Bicycle Rider #2		M F
Bicycle Rider #3		M F
Bicycle Rider #4		M F
Bicycle Rider #5		M F
Bicycle Rider #6		M F
Bicycle Rider #7		M F
Bicycle Rider #8		M F
Bicycle Rider #9		M F
Bicycle Rider #10		M F

Q3. **(ASK FOR EACH BIKE RIDER IN Q2)** How often does the **(READ AGE & GENDER OF EACH PERSON GIVEN IN Q2)** in your household ride his/her bicycle? Would you say almost everyday, a few days a week, a few days a month, or once a month or less?

	<u>Almost Everyday</u>	<u>A few days a week</u>	<u>A few days a month</u>	<u>Once a month or less</u>	<u>Don't know</u>
Bicycle Rider #1	1	2	3	4	9
Bicycle Rider #2	1	2	3	4	9
Bicycle Rider #3	1	2	3	4	9
Bicycle Rider #4	1	2	3	4	9
Bicycle Rider #5	1	2	3	4	9
Bicycle Rider #6	1	2	3	4	9
Bicycle Rider #7	1	2	3	4	9
Bicycle Rider #8	1	2	3	4	9
Bicycle Rider #9	1	2	3	4	9
Bicycle Rider #10	1	2	3	4	9

For the next series of questions, I would like for you to answer thinking from the perspective of the “bikers in your household”.

Q4. Please tell me how important is bicycling for the following types of trips? For each type of trip I read, please tell me if it is very important, somewhat important, not very important, or not important at all to your household as a whole. First **(READ LIST. ROTATE)**...

	<u>Very important</u>	<u>Somewhat Important</u>	<u>Not Very Important</u>	<u>Not Important At All</u>	<u>Don't know</u>
Commuting (to work)	4	3	2	1	9
Recreation/exercise	4	3	2	1	9
Errands in your neighborhood	4	3	2	1	9
School	4	3	2	1	9

(ASK EVERYONE)

Q5. And in general, how strongly do you support changes in bicycle facilities and policies to enable Hawaii to become more bicycle-friendly? Would you say... **(READ LIST)**:

Very strongly	4
Somewhat strongly	3
Not very Strongly	2
Or, Not Strongly At All.....	1
Don't know (DO NOT READ)	9

Q6. I would now like to read you a list of ideas for improving bicycle transportation in the state of Hawaii. Please tell me how strongly you support each idea, very strongly, somewhat strongly, not very strongly, or not strongly at all. First... **(READ LIST. ROTATE.)**

		<u>Very Strongly</u>	<u>S/W Strongly</u>	<u>Not Very Strongly.</u>	<u>Not Strongly At All</u>	<u>Don't know</u>
1	Create separate, on-road bicycle lanes with striping on the pavement	4	3	2	1	9
2	Add paved shoulders or widen narrow roads, but don't provide separate bike lanes	4	3	2	1	9
3	Build more off-road bicycle paths that are totally separate from the street.	4	3	2	1	9
4	Clear debris and other obstructions from shoulders	4	3	2	1	9
5	Conduct safe bicycle riding classes in the public schools	4	3	2	1	9
6	Improve bicycle-oriented signage ("Share the Road" signs, bike route markers)	4	3	2	1	9
7	Enforce motor vehicle laws regarding bicycles	4	3	2	1	9
8	Provide secure places to park or store bicycles	4	3	2	1	9
9	Support orientation rides (weekend rides with experienced bike leaders)	4	3	2	1	9
10	Add bicycling items to the state driving exam (such as how to interact with bicyclists on the road)	4	3	2	1	9

Q6a: **(IF MORE THAN ONE IDEA GIVEN A "4" RATING IN Q6, ASK:)** You said that you strongly support **(READ IDEAS GIVEN A 4 RATING)** Of these, which one SINGLE idea would you say you support the most? **(INTERVIEWER: PROBE FOR ONE RESPONSE ONLY)**

Q7. If bicycling were a safer mode of transportation, how likely would you personally be to use a bicycle more frequently for **(READ LIST)**. Would you say very likely, somewhat likely, not very likely, or not likely at all?

	<u>Very Likely</u>	<u>S/W Likely</u>	<u>Not Very Likely</u>	<u>Not Likely At All</u>	<u>Don't know</u>
Recreation or exercise	4	3	2	1	9
Shopping trips or errands around your neighborhood	4	3	2	1	9
Commuting to work	4	3	2	1	9
Going to and from school by children in your household	4	3	2	1	9

Q8. And how willing would you be to support the use of government funding, namely the allocation of funds from the State Department of Transportation's budget, to address biking issues? Would you be strongly in favor, somewhat in favor, somewhat opposed, or strongly opposed to the use of government funding to address biking issues?

Strongly in favor.....	4
Somewhat in favor.....	3
Somewhat opposed.....	2
Or, Strongly opposed.....	1
Don't know (DO NOT READ)	9

And thinking about biking conditions in your neighborhood community...

Q9. A good bicycle plan considers the condition of the routes where people ride frequently or would like to ride more frequently. Where, specifically, would you like to see improved bicycle facilities? **(INTERVIEWER: PROBE FOR SPECIFIC CURRENT LOCATION)**

Q10. What else, if anything, would you like to say about bike transportation in your area?

These final few questions are for classification purposes only...

Q11. Are you a registered voter in the State of Hawaii?

- Yes.....1
- No2

Q12. How many years have you lived in Hawaii?

- less than 2 years.....1
- 2 - less than 5 years2
- 5 - less than 10 years3
- 10 or more years.....4
- born and raised in Hawaii5
- don't know/refused (**DO NOT READ**).....9

Q13. And how many people are there, in total, in your household? people in household

Q14. How many of these are under 18 years? people in household

Q15. What is your ethnic identification? (**IF MIXED, ASK**) Would that include Hawaiian?

- Caucasian1
- Chinese.....2
- Filipino.....3
- Hawaiian/part-Hawaiian.....4
- Japanese5
- mixed6
- other (specify)8
- refused (**DO NOT READ**)9

(v)

Q16. What was your age on your last birthday? (99 = refused) years

Q17. And what was your household's total income for 2001 before taxes? Please stop me when I get to the correct category.

- under \$25,000..... 1
- \$25,000 - but under \$35,000 2
- \$35,000 - but under \$50,000 3
- \$50,000 - but under \$75,000 4
- \$75,000 - but under \$100,000 5
- \$100,000 or more 6
- refused (**DO NOT READ**) 9

That was my final question. Let me assure you once again that your responses will remain completely confidential. If you would like to be notified of the results of this survey, as well as upcoming events such as community workshops on the Bike Plan, we can email or mail updates to you if you would like. IF YES, GET EMAIL OR MAILING ADDRESS.

Email Address: _____

OR Mailing Address: _____
Street Address

City

Zip

Thank you very much for participating in this survey.

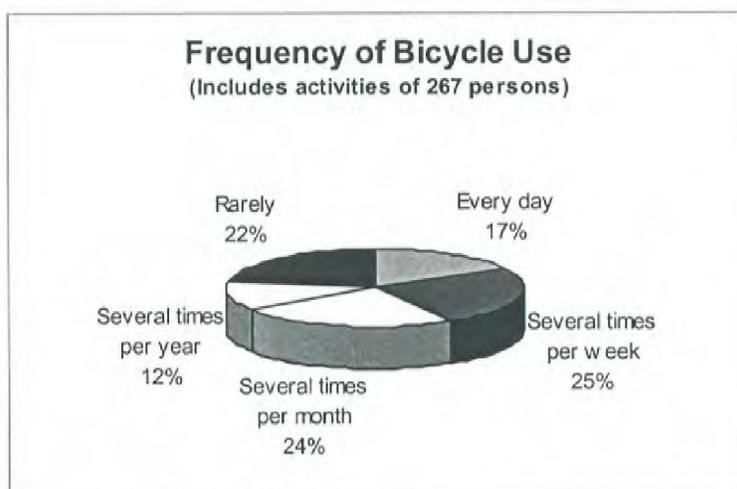
Results of the Community Workshop Survey

During the first round of community workshops, held in November 2001, participants were asked to complete a one-page questionnaire. 118 completed questionnaires were collected after nine of the workshops and two more were mailed back to consultants Kimura International, Inc. for a total of 120 usable questionnaires and a response rate of 82%*. The findings of this survey represent the views and opinions of those who filled out the questionnaire and cannot be generalized to the larger community. Nevertheless, the results help us to better understand the concerns and preferences of one segment of the bicycle-riding public.

The 120 respondents who completed questionnaires reported ownership of 368 bicycles. The pool of respondents included 6 households with zero bicycles. The remaining 114 households average 3.2 bicycles per household.

Frequency of Bicycle Use

Respondents were asked to describe how frequently members of their household ride their bicycles—including themselves and three other members. Using this querying technique, we were able to expand the survey's reach and obtain information on 267 household members. Of these, 107 persons or 40% ride their bicycles several times a week, if not every day. Another 62 persons (24%) use their bicycles several times a month. Overall, then, more than 3 out of 5 household members are out bicycling at least once a month. At the same time, 1 out of 5 rarely rides a bike.



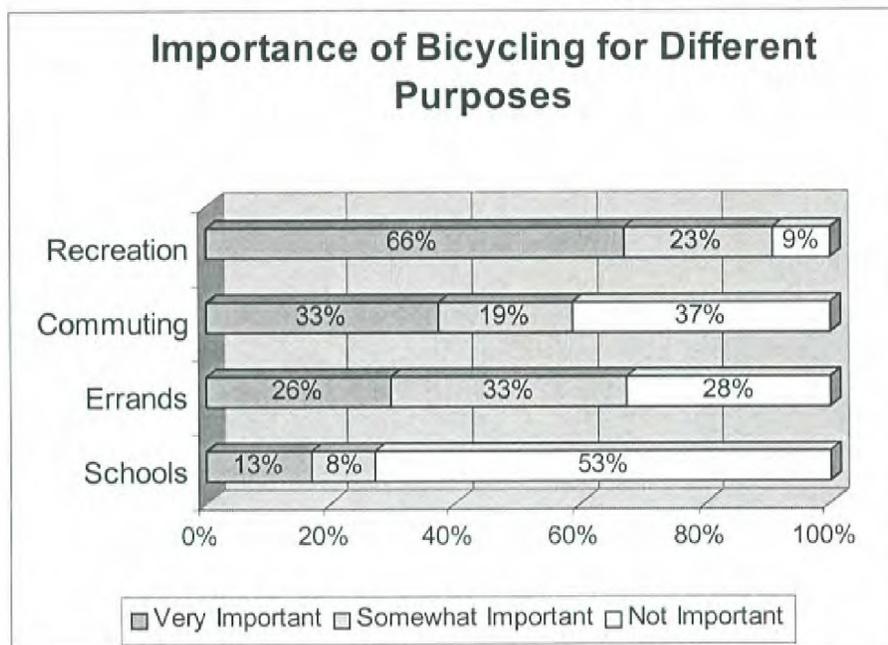
* Participants were asked to complete one questionnaire per household. To the extent that more than one household member was present at the workshop, the response rate will inevitably be less than 100%. Because the Puna workshop was cancelled, no questionnaires are available from this venue. Also excluded from the analysis are four sets of responses collected at the Molokai workshop, held in February 2002. These responses are not expected to have a significant effect on the findings or conclusions of this report.

Purpose of Bike Use

Why are people on their bikes? By far, recreation is cited as the reason why people use their bicycles. Fully 90% of respondents said that bicycling is an important recreational activity within their household. A third of all respondents reported that bicycling is *very important* for purposes of commuting to work. Another 19% of respondents said that bicycling is *somewhat important* for commuting purposes. Adding these two categories, more than half of the respondents indicated that household members use bicycles for commuting to some extent.

Although only one-quarter of the respondents reported that bicycling is *very important* for shopping and other errands, when we add respondents who said that bicycling is *somewhat important* for this purpose, almost 60% of the represented households use bicycles for errands at least occasionally.

The lowest category of bicycle use is for commuting to school. 21% of respondents indicated that bicycling is either *very important* or *somewhat important* in traveling to schools. In part, the low percentages of use in this category may reflect the fact that, for the most part, adults completed the questionnaire. Alternatively, the low percentages may reflect the low density of development in many workshop regions (including the neighbor islands and suburban Oahu). On the other hand, we would expect low-density development to have an equally dampening effect on commuting and errands, and since this is not the case, it suggests that children are not bicycling to the extent that adults are, or face different constraints than adults.



Inter-island Differences

Are there different patterns of bicycling use across the four major islands? There are slight variations, as seen in Table 1 below. Bicycling on Oahu is slightly less important across the board. Respondents on Kauai and Maui, on the other hand, expressed relatively strong bike usage—notably for running errands on Kauai and for going to school on Maui. For recreational purpose, the island breakdown shows consistently high reporting levels of bicycling’s importance.

Table 1: Percentage of Respondents who feel that Bicycling is "Very Important" or "Somewhat Important" for Various Purposes

	Hawaii	Kauai	Maui	Oahu
Schools	19%	17%	31%	18%
Errands	58%	75%	69%	48%
Commuting	51%	67%	69%	42%
Recreation	90%	92%	100%	82%
n	59	12	16	33

What do People Like about Bicycling in their Community?

Respondents were asked to write in responses to this open-ended question. We post-coded the responses, grouping similar comments, then ranked them by order of frequency as shown in Table 2. The largest number of respondents—25 or 21%—stated that bicycling is beneficial as an alternative form of transportation, with the subsidiary points that bicycles are cheaper to operate than cars, better for the environment, and sometimes a faster means of getting to desired destinations. Exercise and fitness were identified by 20 respondents (17%). Also prominent, were responses related to Hawaii’s favorable environment, including the opportunity to be outdoors, the scenic beauty found in many communities, and good weather. Several people mentioned that their neighborhoods are particularly conducive to bicycling because there is little conflict with cars and they enjoy plenty of road space.

Table 2: What Respondents Like about Bicycling (n=120)

	Number	Percent
Alternative transportation	25	21%
Exercise	20	17%
Being outdoors	14	12%
Scenic areas	14	12%
Low conflict with cars	11	9%
Plenty of road space	9	8%
Good weather	8	7%

What Problems do Bicyclists Face in their Community?

Another open-ended question asked respondents to identify problems or barriers for bicyclists. In general, this question elicited a greater number of comments than the previous question, and a higher rate of repeats among the comments. Topping the list of problems (Table 3) is the lack of road space, including narrow roads and inadequate shoulders, mentioned by 45 persons (38%). Heavy traffic volumes and high speeds, leading to perceived danger and even “fear of death,” were expressed by 23 persons (19%). A related issue was lack of off-road facilities or bike paths, that respondents felt would provide a safer bicycling environment. 15 persons reported poor road maintenance as a hazard for bicyclists, and 12 persons each mentioned hostile or aggressive drivers and obstructions in the bikeway, such as signs and parked cars.

Table 3: What Problems Respondents Face when Bicycling (n=120)

	Number	Percent
Lack of road space	45	38%
High traffic volume/speed	23	19%
No off-road facilities ("paths")	19	16%
Poor road maintenance	15	13%
Hostile drivers	12	10%
Obstructions	12	10%

Other Concerns

Finally, respondents were asked to write down concerns that might be related to any of the 5 “E”s—engineering, education, enforcement, economics, and encouragement. The comments in this section tended to be more prescriptive in nature. Accordingly, the categories in Table 4 are written in the form of recommended changes. 25 people want better education of motorists and bicyclists about the rules of the road. 16 people would like to see design guidelines that provide adequate bike facilities (of sufficient width) and would like these guidelines attached to new urban development. 13 people raised the need for increased political commitment and funding to implement bike proposals. Ten people focused specifically on the desirability of more bike paths.

Table 4: Other Concerns (n=120)

	Number	Percent
Educate motorists and bicyclists about traffic laws	25	9%
Develop design guidelines for bike facilities	16	6%
Other	14	6%
Increase political commitment for bike improvements	13	5%
Build more bike paths	10	4%
Enforce traffic laws	4	1%
Raise standards for road maintenance	2	1%

Bike Plan Hawaii

Workshop Participant Survey

1. How many bicycles are at your home address? _____
2. Where is your residence located (name of town or subdivision) _____
3. How often do you and other members of your household ride bikes?

	Almost everyday	Several days a week	Several days a month	Several days a year	Rarely
Self	<input type="checkbox"/>				
Household member #2	<input type="checkbox"/>				
Household member #3	<input type="checkbox"/>				
Household member #4	<input type="checkbox"/>				

4. For your household as a whole, how important is bicycling for the following types of trips?

	Very Important	Somewhat Important	Not Important
Commuting (to work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recreation/fitness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Errands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
School	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. What do you like about bicycling in your community?

6. What problems do bicyclists face in your community?

7. Where would you like to see improved bicycle facilities?
 From _____ To _____

8. Other concerns regarding engineering, education, enforcement, economy and/or encouragement

9. How did you hear about this workshop? _____

Thank you for completing this questionnaire
 Kimura International, Inc., 1600 Kapiolani Boulevard, Suite 1610, Honolulu, HI 96814

Results of the Online Survey

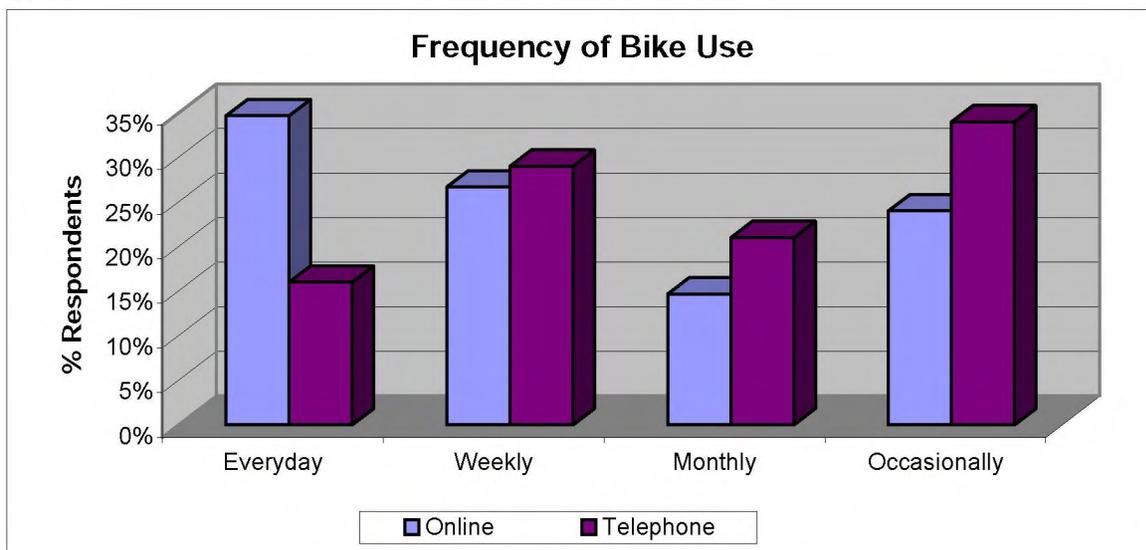
Introduction

Mahalo to everyone who completed the online survey! The questionnaire was posted on this website between February 12 and May 31, 2002. We received 36 electronic responses, one mailed via U.S Postal Service, and another faxed in for a total of 38 survey responses.

Our analysis also compares online responses against those obtained from a telephone survey of 402 randomly selected adults conducted during the first two weeks of February 2002. The results of the telephone survey are statistically significant, wherein the results can be generalized to the population base from which the sample was drawn: i.e., the Big Island, Maui, Kauai, and the suburban and rural areas of Oahu. The surveyed population inhabits an area that is essentially coterminous with geographic scope of the bike plan. In contrast, the results of the online survey represent the views of those who completed the questionnaire. In most cases, the results of both the online and telephone surveys are shown side by side.

Frequency of Bike Use

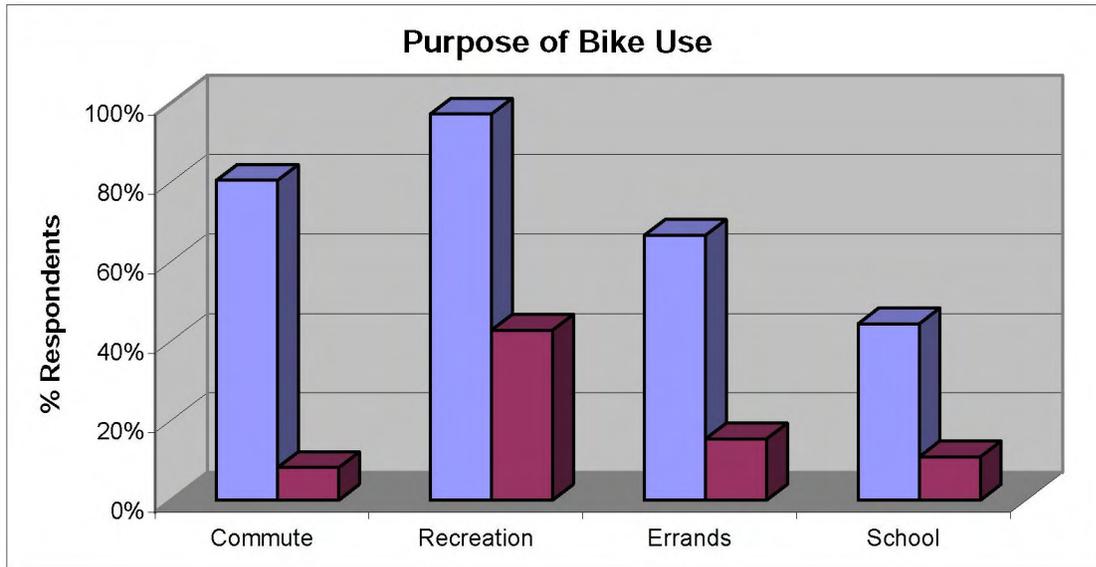
Figure 1



A substantial proportion (35%) of our online respondents are avid bike riders who ride everyday. Another 27% indicated that they ride a few times a week while 15% ride a few times a month. In total, 76% stated that they ride at least several times a month – a benchmark we used to identify “regular riders”. In contrast, only 66% of the telephone survey respondents can be categorized as regular riders.

Why Do People Bicycle?

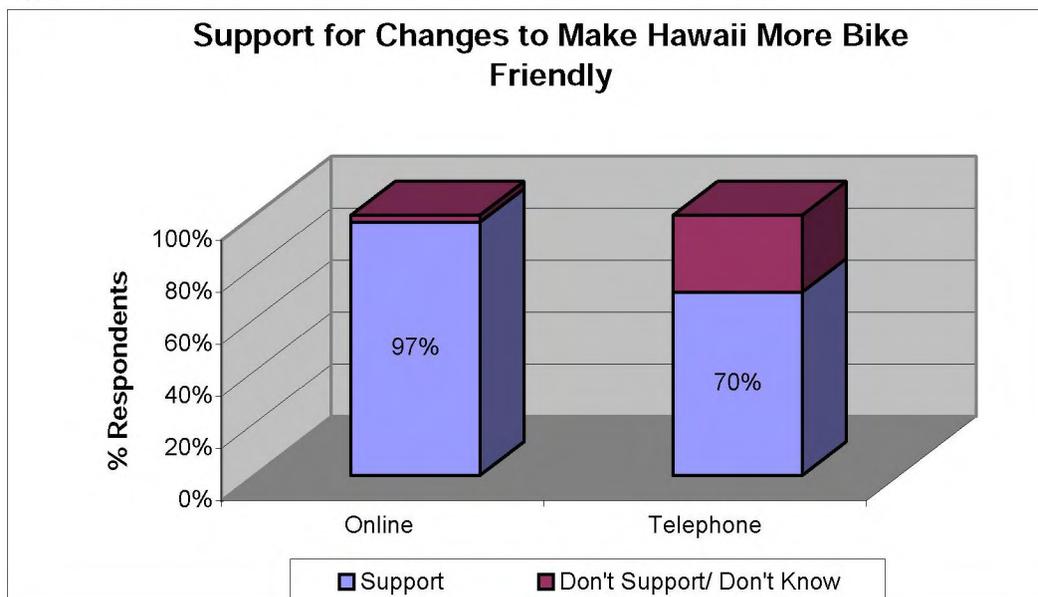
Figure 2



The most common use of a bicycle was recreation among both the online (97%) and telephone (43%) respondents. Noticeably, 81% of the online survey population also indicated commuting as an important purpose, partly explaining their frequent bike usage. Conversely, telephone survey participants reported that they rarely commute by bicycle.

Support for Changes to Make Hawaii More Bike Friendly

Figure 3



An overwhelming majority, 97% of the online respondents, support changes to make Hawaii more bike friendly. The telephone respondents also generated a fairly high level of support at 70%, though less enthusiastic than those online.

Preferred Type of Bicycle Improvements

Respondents were asked to indicate their level of support for ten specific types of bicycle improvements. For each, participants were asked to classify their opinion in one of five categories: very strongly support, somewhat strongly support, not very strongly support, not strongly at all, or do not know. The list of choices is as follows:

- 1) Create separate, on-road bicycle lanes with striping on the pavement
- 2) Add paved shoulders or widen narrow roads, but don't provide separate bike lanes
- 3) Build more off-road bicycle paths that are totally separate from the street
- 4) Clear debris and other obstructions from shoulders
- 5) Conduct safe bicycle riding classes in public schools
- 6) Improve bicycle-orientated signage ("Share the Road" signs, bike route markers)
- 7) Enforce motor vehicle laws regarding bicycles
- 8) Provide secure places to park or store bicycles
- 9) Support orientation rides (weekend rides with experienced bike leaders)
- 10) Add bicycling items to the state driving exam (such as how to interact with bicyclists on the road).

From the online survey, the five ideas with the strongest support are:

- Maintenance of existing bikeways
- Creation of new bike lanes
- Improvements on bike education
- Provision of bike storage
- Changing the state driving exam.

Respondents were strongly in favor of these ideas, with the last three resulting in a tie for support votes. When the respondents were asked to advocate only one idea, there was a tie between more bike lanes and improved bike shoulders, revealing an overall preference for road cycling.

The telephone survey results were similar with the five most supported ideas being:

- Maintenance
- Creation of bike paths
- Improvements on bike education
- Provision of bike storage
- Improved signage.

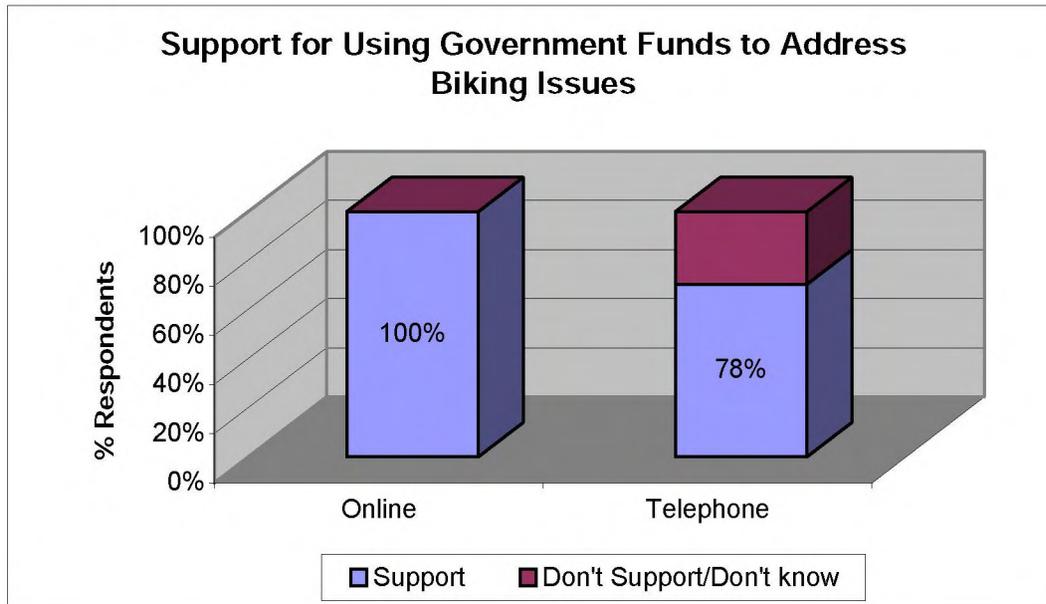
The single most favored idea was the creation of new bike paths, indicating a preference for bikeways that are separated from vehicular traffic.

To explain these results, the type of rider becomes very important. As online respondents are typically more skilled riders who use their bicycles more frequently—often for commuting—the the most advantageous bikeways would be along major roads that provide the most direct connection to their destination. On the other hand, telephone respondents use bicycles mainly for

recreation and are likely to be less practiced, thus revealing an understandable preference for bike paths, separate from roadways.

Support for Government Fund for Bicycle Improvements

Figure 4



When asked about the use of government funds for biking issues, a resounding 100% of the online respondents indicated their support. Even among the larger public, support for government funding is relatively high at 78%.

Possible Impacts of Bicycling Improvements

Improvements are not likely to have a significant impact on future ridership levels among online respondents (Figure 5a). Most of these respondents are probably experienced, confident riders who are not deterred from using the streets as is. Nevertheless, improvements are likely to increase the quality and enjoyment of the bicycling experience.

In contrast, if the streets were perceived to be safer, ridership is expected to increase significantly among less experienced and novice riders (Figure 5b).

Figure 5a – Online Respondents

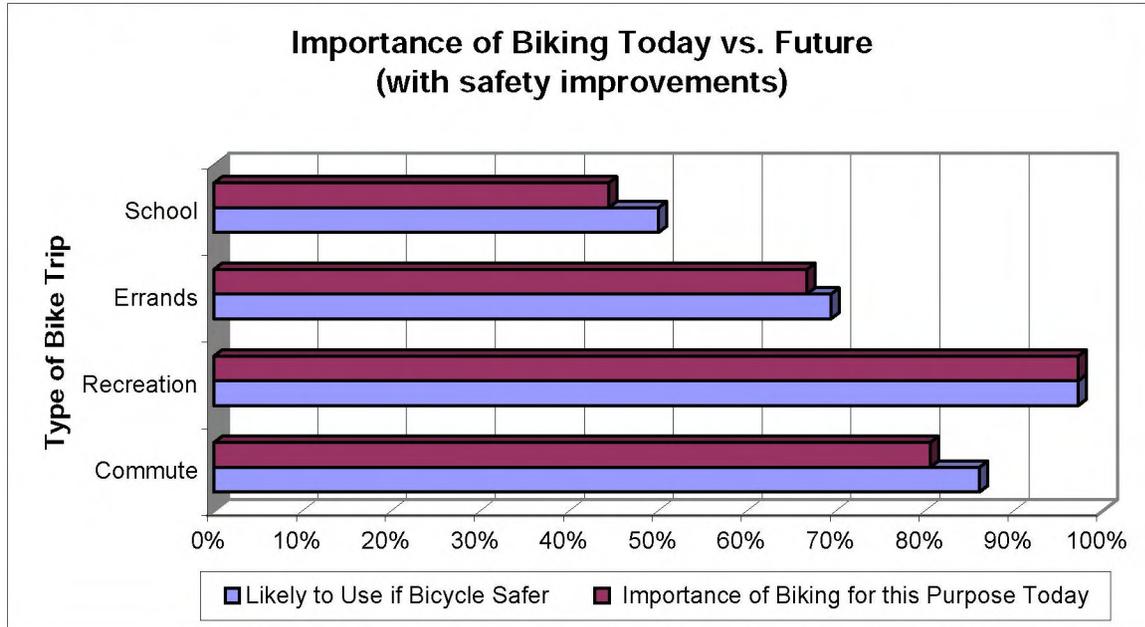
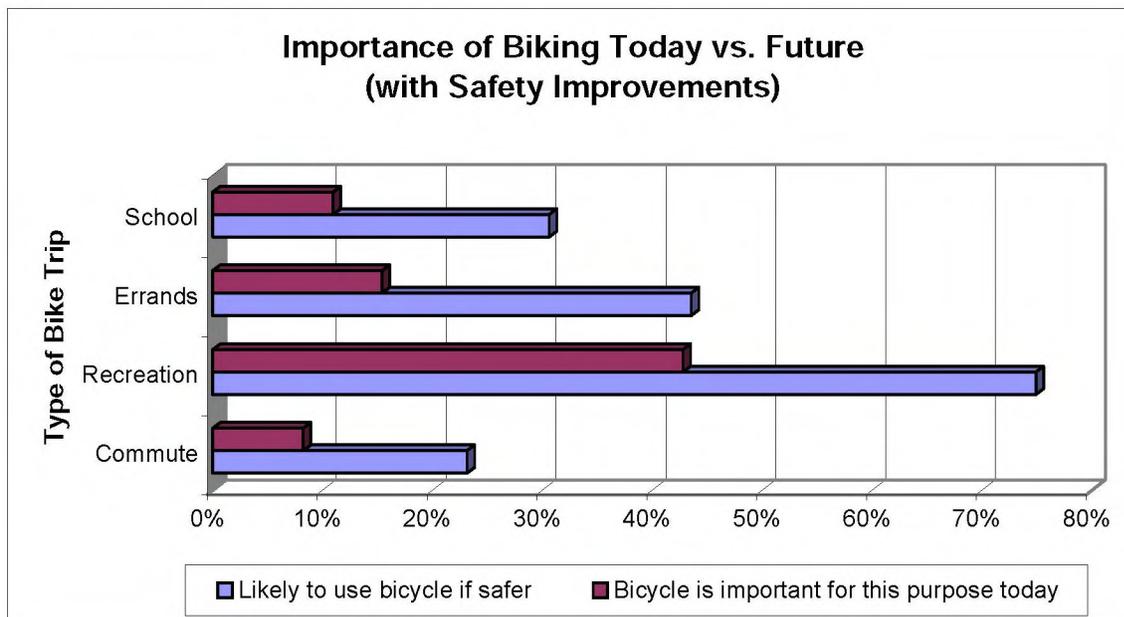


Figure 5b – Telephone Respondents



Who Responded to the Online Survey?

Access to the online survey was unrestricted. Based on the demographic questions asked, the average age of riders responding was 34, with a male to female ratio of 3:2.

Bike Plan Survey

Please take a few minutes to give us your opinions on the following bicycle facilities subjects.



[Please click in a field to enter data or reveal a pop-up menu of choices.]

Q1a. How many automobiles are there at your home address?

 automobiles

Q1b. Does any one in your house hold ride *TheBus* on a regular basis?

Q1c. And how many bicycles are there at your home address?

 bicycles

Q2. And in order to get a better understanding of bicycle riders, please fill in the age and gender of each person in your household who rides a bicycle.

Rider	AGE	GENDER
Bicycle Rider #1	<input type="text"/>	<input type="text"/>
Bicycle Rider #2	<input type="text"/>	<input type="text"/>
Bicycle Rider #3	<input type="text"/>	<input type="text"/>
Bicycle Rider #4	<input type="text"/>	<input type="text"/>
Bicycle Rider #5	<input type="text"/>	<input type="text"/>
Bicycle Rider #6	<input type="text"/>	<input type="text"/>
Bicycle Rider #7	<input type="text"/>	<input type="text"/>
Bicycle Rider #8	<input type="text"/>	<input type="text"/>
Bicycle Rider #9	<input type="text"/>	<input type="text"/>
Bicycle Rider #10	<input type="text"/>	<input type="text"/>

Q3. How often does the rider in your household ride his/her bicycle? Would you say almost everyday, a few days a week, a few days a month, or once a month or less?

Rider	Frequency of Bicycling
Bicycle Rider #1	--
Bicycle Rider #2	--
Bicycle Rider #3	--
Bicycle Rider #4	--
Bicycle Rider #5	--
Bicycle Rider #6	--
Bicycle Rider #7	--
Bicycle Rider #8	--
Bicycle Rider #9	--
Bicycle Rider #10	--

For the next series of questions, please answer thinking from the perspective of the "bikers in your household".

Q4. Please indicated how important bicycling is for the following types of trips? For each type of trip, please tell if it is very important, somewhat important, not very important, or not important at all to your household as a whole.

Commuting	--
Recreation/exercise	--
Errands in your neighborhood	--
School	--

Q5. And in general, how strongly do you support changes in bicycle facilities and policies to enable Hawaii to become more bicycle-friendly? Please indicated how strongly you support each idea: very strongly, somewhat strongly, not very strongly, or not strongly at all. Would you say:

Q6. Below is a list of ideas for improving bicycle transportation in the state of Hawaii. Please indicated how strongly you support each idea: very strongly, somewhat strongly, not very strongly, or not strongly at all.

1 Create separate, on-road bicycle lanes with striping on the pavement
.....

2 Add paved shoulders or widen narrow roads, but don't provide separate bike lanes.....

3 Build more off-road bicycle paths that are totally separate from the street
.....

4 Clear debris and other obstructions from shoulders
.....

5 Conduct safe bicycle riding classes in the public schools
.....

6 Improve bicycle-oriented signage ("Share the Road" signs, bike route markers).....

7 Enforce motor vehicle laws regarding bicycles
.....

8 Provide secure places to park or store bicycles
.....

9 Support orientation rides (weekend rides with experienced bike leaders)
.....

10 Add bicycling items to the state driving exam (such as how to interact with bicyclists on the road).....

Q6a: If you answered that you strongly support more than one of the above ideas, which one *single* idea would you say you support the most?

Q7. If bicycling were a safer mode of transportation, how likely would you personally be to use a bicycle more frequently for * Recreation or exercise, * Shopping trips or errands around your neighborhood, * Commuting to work, * Going to and from school by children in your household? Would you say very likely, somewhat likely, not very likely, or not likely at all?

Recreation or Exercise

Shopping trips or Errands in your neighborhood

Commuting to Work

Going to and from School by children in your household

Q8. And how willing would you be to support the use of government funding, namely the allocation of funds from the State Department of Transportation's budget, to address biking issues? Would you be * strongly in favor, * somewhat in favor, * somewhat opposed, or * strongly opposed to the use of government funding to address biking issues?

And thinking about biking conditions in your neighborhood community...

Q9. A good bicycle plan considers the condition of the routes where people ride frequently or would like to ride more frequently. Where, specifically, would you like to see improved bicycle facilities?

Q10. What else, if anything, would you like to state about bike transportation in your area?

* *

Info. - If you would like to receive announcements of further planning or events related to *Bike Plan Hawaii*, please fill in your email address here:

* * * * *

Please save this document with a new name on your hard drive and mail it to:
<projects@kimurainternational.com>

Check back in April for results of the Surveys.



Results of the School Survey

Introduction

Mahalo to all the school administrators who completed the school survey! In February 2002, the questionnaire was mailed to public and private schools throughout the state to gather information on bicycle usage, bike-related policies and programs, and ways to promote safe bicycling for school-aged children.

Who Responded to the School Survey?

153 schools from Oahu, Kauai, Maui, Lanai, and Molokai participated to generate a total response rate of 57%. On Oahu, the survey was limited to the suburban and rural areas—corresponding to the geographic scope of the Bike Plan Hawaii update.

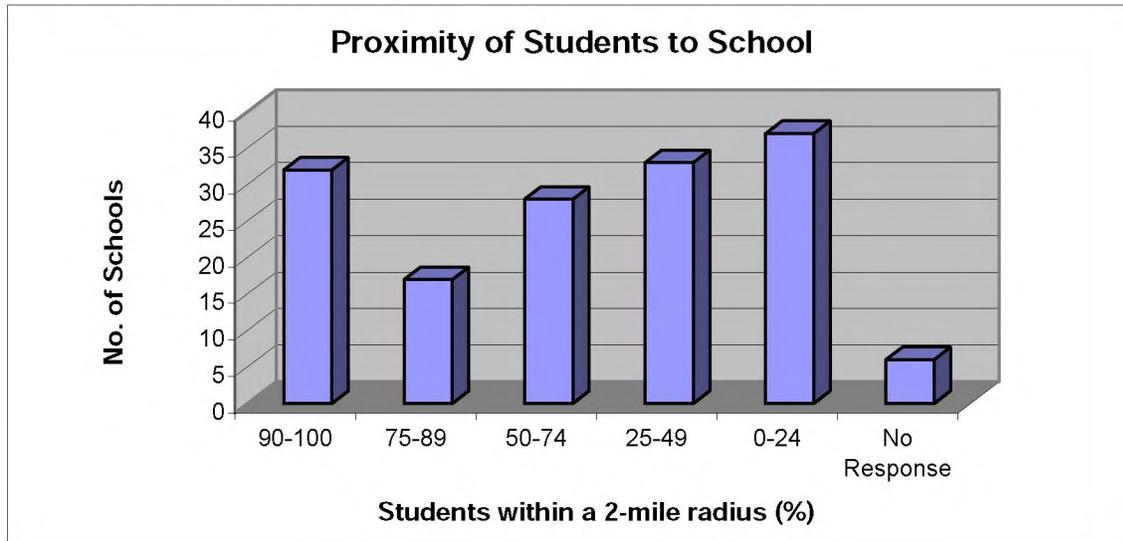
The age ranges of the schools that responded were distributed as follows:

- 72 -- elementary school grade levels
- 37 -- middle and/or high school grade levels
- 38 -- elementary, middle, and/or high school grade levels
- 6 -- not specified

Proximity of Students to School

Distance is one of many determining factors for bicycle riding. To assess the feasibility of bicycle commuting for each school, we asked administrators to estimate the percentage of students living within a 2-mile radius of the. A commute of 2 miles would generally be the upper limit of bicycling for younger bicyclists. In the case of 32 schools, an estimated 90-100% of the student body lives within a 2-mile radius (see Figure 1). Another 17 schools estimated that 75-89% of the student body lives within a 2-mile radius, and 28 schools estimated the percentage to be 50-74%. These findings indicate that significant clustering of students around a campus occurs in only about half the schools responding. For these schools, there's a potential critical mass of student bicyclists. For the other schools, the student body is distributed over a larger geographic area.

Figure 1 – Within a 2-mile Radius



Estimates of Actual Student/Faculty Bicycle Commuting

92 schools (60%) reported students who bicycle to and from school (see Figure 2a), but the numbers are very small. Only a handful of schools identified 25 or more student bicyclists. Faculty bicyclists are even more scarce with only 36 schools (24%) indicate that faculty members commute by bicycle (see Figure 2b).

Figure 2a – Student Commuters

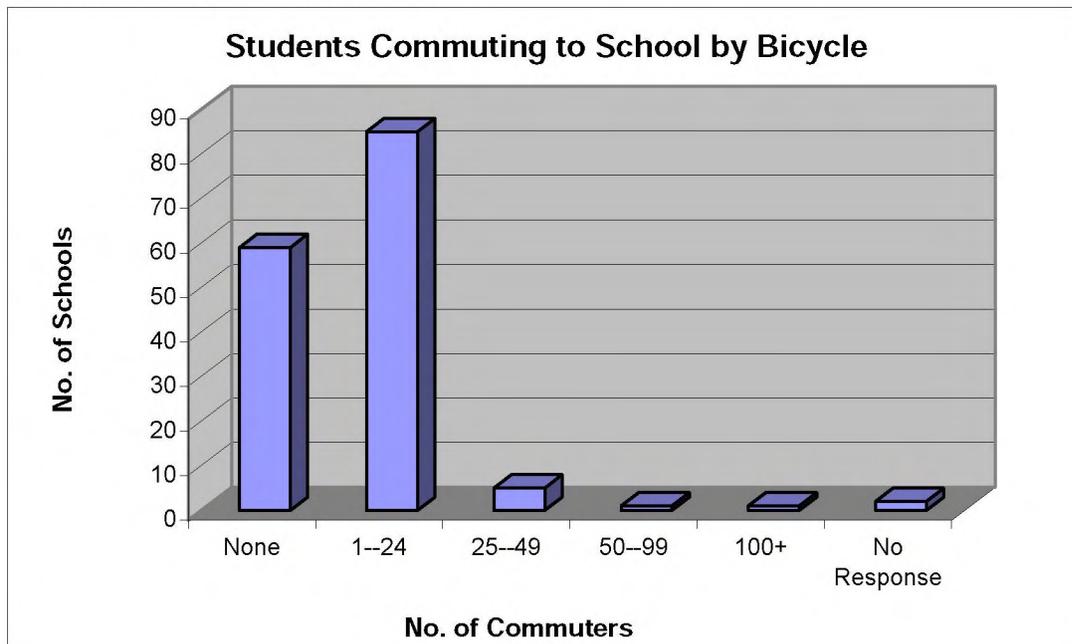
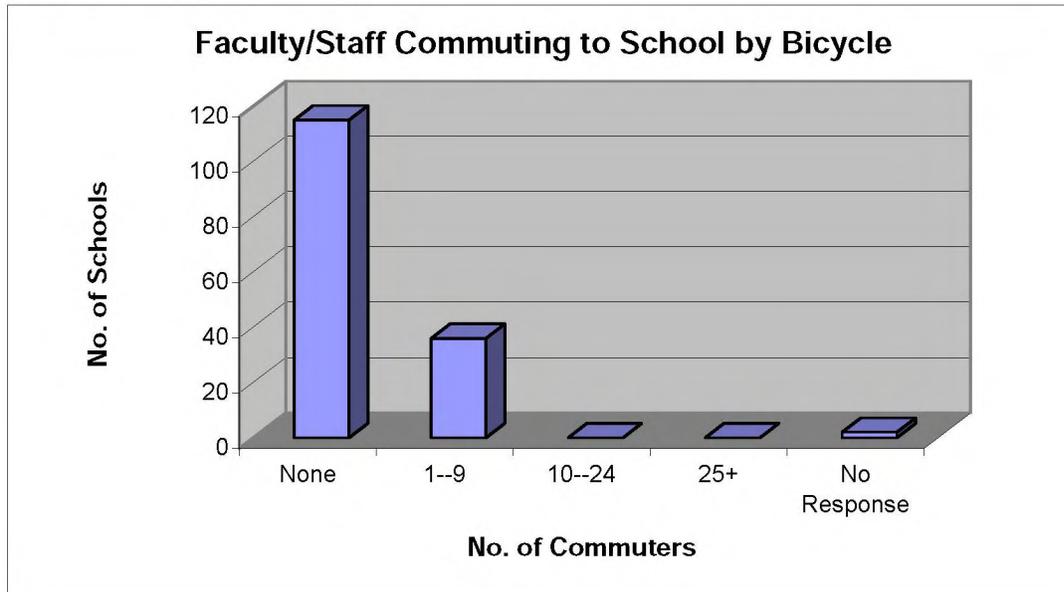


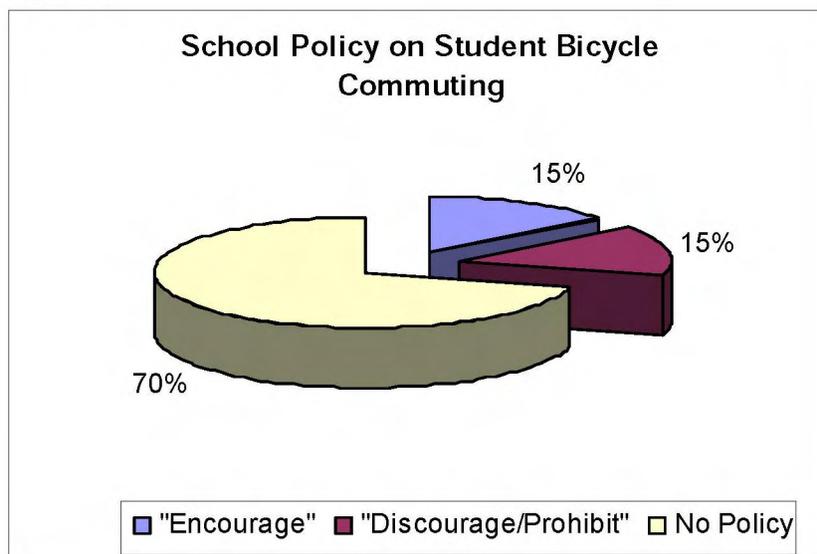
Figure 2b – Faculty Commuters



School Policy on Commuting by Bicycle

When asked about school policy on bicycling, 105 schools or 70%, stated that they have no policy (see Figure 3). The remaining 30% are evenly split between those that formally or informally encourage bicycling, and those that formally or informally discourage bicycling. Three schools in the latter group prohibit students from riding their bicycle to school.

Figure 3



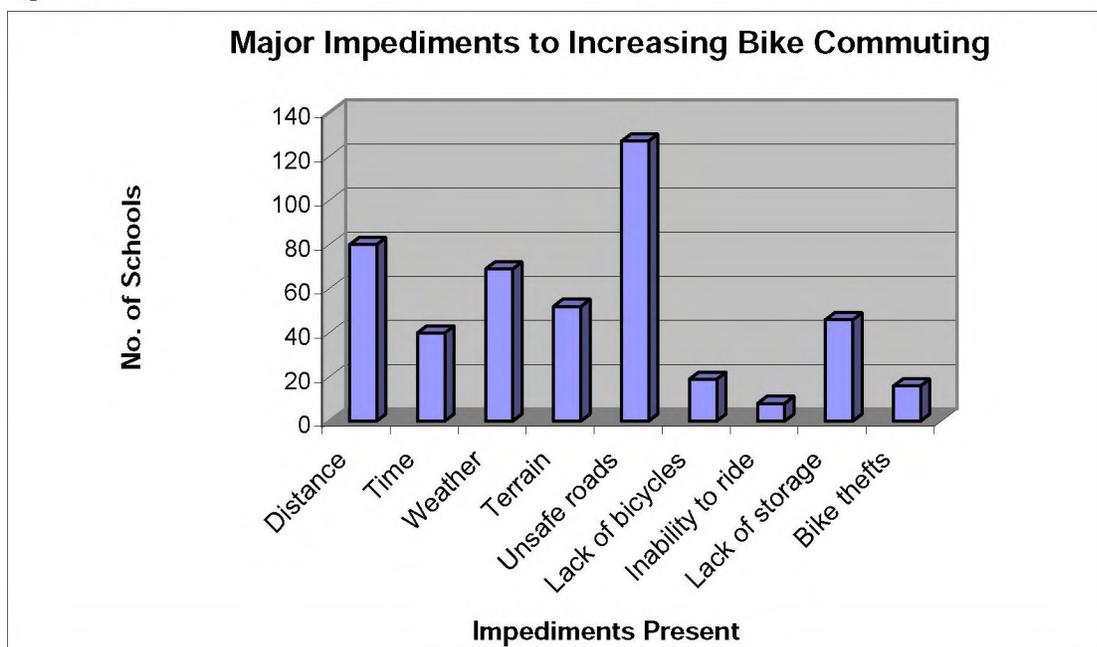
Structured Bicycle Education Program

55 schools (more than a third) reported that they participate in the bicycle education program known as BikeEd. This program is aimed at 4th graders and taught during school hours in five 45-minute sessions. A key feature of the program is the time spent on secondary roads near the campus to better instruct children on basic bicycling maneuvers and proper road behavior. Among the schools participating in BikeEd, all but one felt that it was successful. Many of the schools commented on their desire to expand the program to include all grade levels and even involve parents. Of the schools without an established bike program, 45 schools (58%) indicated their interest in having one.

Major Impediments to Increasing Bike Commuting

85% of the respondents cited the perception of unsafe roadways and high traffic levels as the most significant impediment to increased bicycle commuting (see Figure 4). Distance, weather, lack of storage space, and terrain were also mentioned frequently.

Figure 4



Suggestions to Increase Bicycle Commuting

Several off-campus improvements (Figure 5a) were suggested to increase bicycle commuting:

- Create bike paths
- Create bike lanes
- Reduce traffic and speed of cars
- Improve road shoulders
- Increase driver awareness of bicyclist's rights.

Suggestions for possible on-campus improvements (Figure 5b), included:

- Promote safe biking (bike programs for students and parents)
- Add bicycle racks
- Provide bicycle riding training
- Provide equipment (helmet, knee pads)
- Promote bicycling as exercise

Figure 5a – Off-campus Improvements

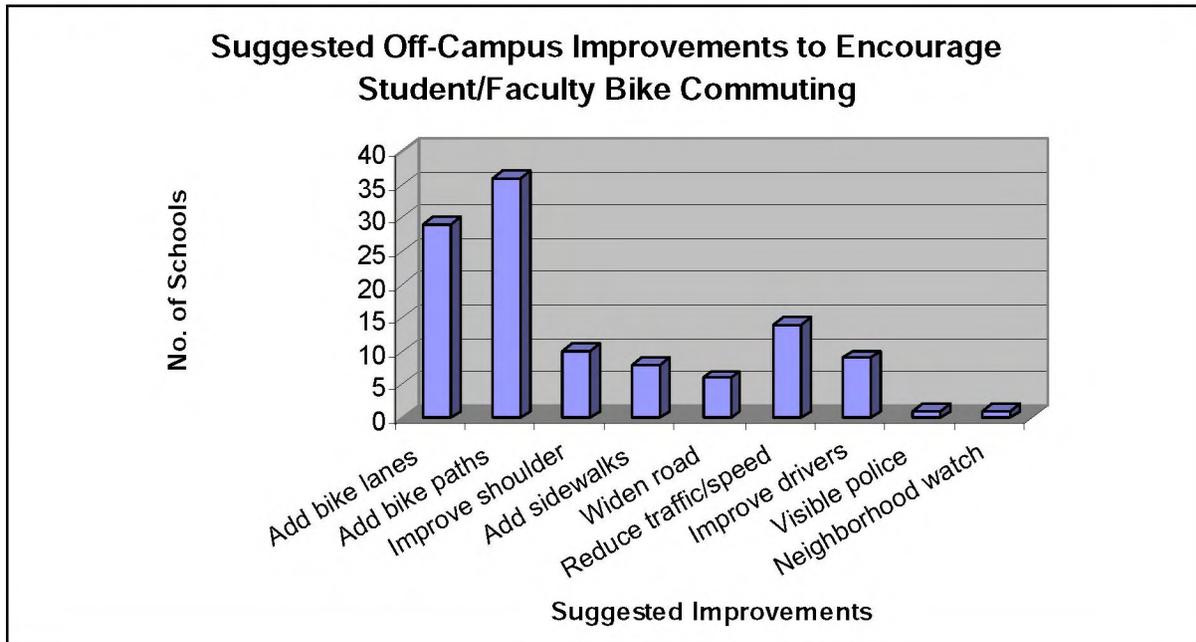
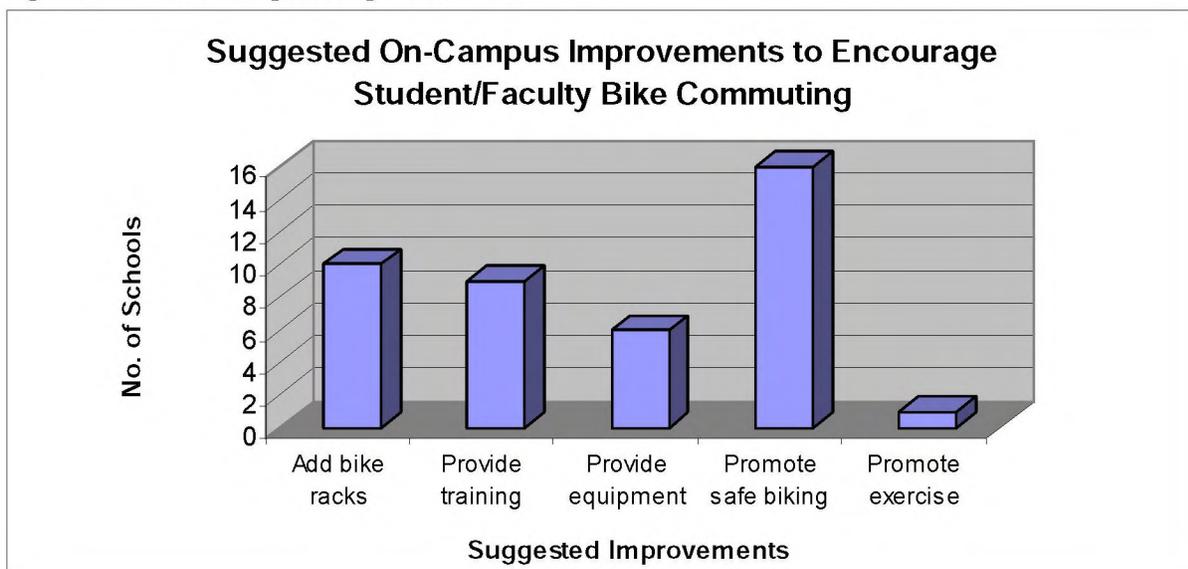


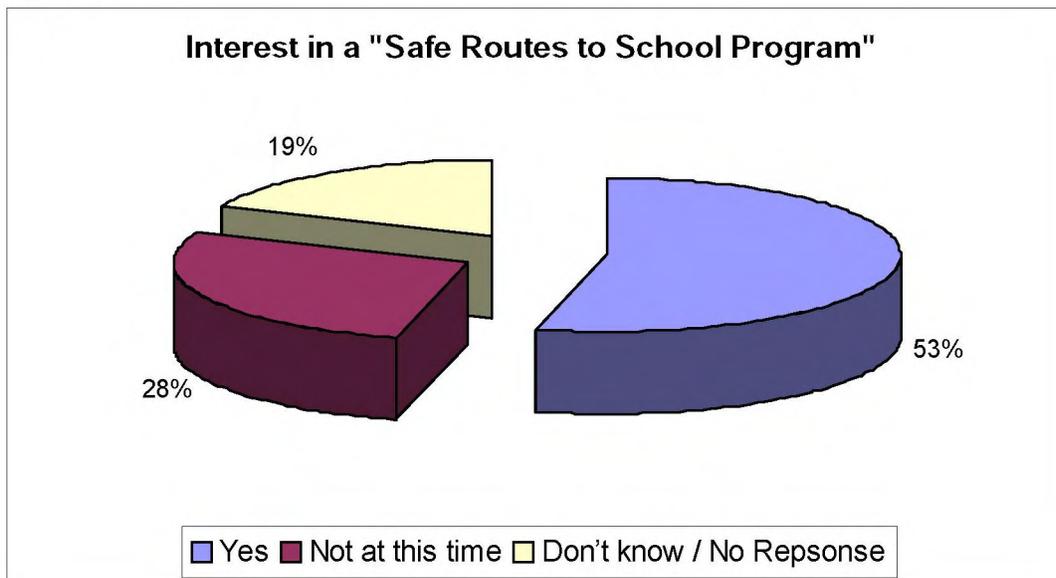
Figure 5b – On-campus Improvements



Safe Routes to School Program

When the schools were surveyed on their interest in establishing a “Safe Routes to School” program, 90 schools (53%) indicated their interest (see Figure 6). Safe Routes to School is a term used for community-based efforts to map routes to school, identify safety issues, and create an improvement plan. The program typically involves students, parents, school administrators, teachers, local law enforcement and public works departments, and possibly business and community groups.

Figure 6





STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:

HWY-TO
2.5671

February 8, 2002

Dear Principal:

Subject: State of Hawaii Bike Master Plan Update—School Survey

We are revising and updating *Bike Plan Hawaii*, the 1994 master plan for State bikeways. As part of our data gathering, we are contacting public and private schools throughout the state to gather information on bicycle usage, bike-related policies and programs, and ways to promote safe bicycling for school-aged children.

Our planning efforts are focusing on suburban and rural Oahu—areas within urban Honolulu were recently addressed in the City and County of Honolulu's 1999 Bicycle Master Plan. The planning area also covers all of Kauai, Maui, Lanai, Molokai, and the Big Island.

The primary goal of the bicycle master plan is to integrate bicycle facilities into the State's transportation system by proposing a network of bikeways and auxiliary bicycling facilities. We seek to promote bicycling as a viable, alternate means of transportation. Through our community workshops, we have also heard from many residents who want to enhance biking safety through educational programs and enforcement of traffic regulations.

We would appreciate your assistance by filling out the enclosed questionnaire and returning it in the enclosed envelope by **March 4, 2002**. This survey is being administered by our consultants, Kimura International, Inc. If you have any questions, please call Vincent Llorin, State Bicycle and Pedestrian Coordinator, at 692-7675.

Your comments and input are a valuable part of this project. Thank you for your time and cooperation.

Very truly yours,

A handwritten signature in cursive script that reads "Glenn M. Yasui".

GLENN M. YASUI
Administrator
Highways Division

Bike Plan Hawaii
School Survey
State Department of Transportation

School Name: _____

Address: _____

Contact Person: _____

Phone: _____

Grade levels : _____ Estimated student enrollment: _____

1. Estimated percentage of students living in a two-mile radius:

- 90-100%
- 75-89%
- 50-74%
- 25-49%
- Less than 25%

2. Estimated percentage of students living in a five-mile radius:

- 90-100%
- 75-89%
- 50-74%
- 25-49%
- Less than 25%

3. What is the school's position on students commuting to school by bicycle?
(Please note that this question refers to bicycling to and from school, and not bicycling on the campus itself.)

- Formal (written) policy prohibiting students from riding bicycles to school
- Informal policy discouraging students from riding bicycles to school
- Informal policy encouraging students to ride bicycles to school
- Formal (written) policy encouraging students to ride bicycles to school
- None

4. How many students commute to school by bicycle on an average day?

- None
- 1-24
- 25-49
- 50-99
- 100 or more

5. How many faculty or staff members commute to school by bicycle on an average day?

- None
- 1-9
- 10-24
- 25 or more

6. Does your school participate in a structured bike education program (such as BikeEd, sponsored by the Hawaii Bicycling League or PATH—People’s Advocacy for Trails Hawaii)?

- Yes
- No

6a. If you answered “Yes” above, how would you rate the program?

- Very successful
- Moderately successful
- Not successful

What are the pluses and minuses of the program?

6b. If you answered “No” above, would your school be interested in a bike education program?

- Yes
- No

7. In your opinion, what are the major impediments to increased bike commuting by students and faculty? (please check all that apply)

- Commuting distances
- Commuting time
- Weather conditions
- Hilly terrain
- Unsafe roads/heavy traffic
- Lack of bicycles
- Inability to ride bicycle
- Lack of storage facility on campus (bike racks)
- Bike thefts
- Other: _____

8. What improvements (on- and off-campus) would encourage more students and faculty to commute to school by bicycle? *Please name specific streets and/or intersections that require safety improvements.*

9. Other comments or suggestions on how to promote safe biking to and from school?

10. If there were a “Safe Routes to Schools” program to identify, improve, and/or create safe travel corridors for students, would your school be interested?

- Yes, the administration would be interested—please send more information when available
- Yes, the PTSA is likely to be interested
- Not at this time
- Don't know

Thank you for your cooperation. Please return this questionnaire in the stamped envelope.

Kimura International, Inc.
1600 Kapiolani Boulevard, Suite 1610
Honolulu, HI 96814
Ph. (808) 944-8848

Survey of Neighborhood Boards and Community Associations

In October 2001, letters were sent to 16 Neighborhood Boards in the suburban and rural areas of Oahu and 7 Community Associations on Maui. The letters invited the members of these organizations to attend a public meeting/workshop for Bike Plan Hawaii schedule for various dates in November 2001, and included a one-page questionnaire requesting information and suggestions related to bicycle use in the respective communities. One questionnaire was returned (from the Kaneohe Neighborhood Board); however, the responses were not provided in a format suitable for analysis.

Bike Plan Hawaii

Neighborhood Board Survey

Neighborhood Board: _____

Contact Person: _____ Phone: _____

1. Please identify bikeway projects that are currently being planned, designed, or constructed in your neighborhood.

Project Location	Status
_____	_____
_____	_____
_____	_____

2. In general, how important is bicycling for the following types of trips?

	Very Important	Somewhat Important	Not Important
Commuting (to work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recreation/fitness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Errands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
School	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Please identify locations that are hazardous or potentially hazardous for bicyclists. Locations may be road segments or intersections.

4. Please identify places that need better bikeway connections or improvements.

From	To
_____	_____
_____	_____
_____	_____

5. Suggestions for promoting bicycle use in your community:

* * * * *

Additional sheets may be added, as needed. Thank you for completing this questionnaire. Please return it in the enclosed, stamped envelope to Kimura International, Inc., 1600 Kapiolani Boulevard, Suite 1610, Honolulu, HI 96814. For questions, please call Glenn Kimura or Nancy Nishikawa at (808) 944-8848.

Bike Plan Hawaii

Community Association Survey

Community Association: _____

Contact Person: _____ Phone: _____

1. Please identify bikeway projects that are currently being planned, designed, or constructed in your neighborhood.

Project Location	Status
_____	_____
_____	_____
_____	_____

2. In general, how important is bicycling for the following types of trips?

	Very Important	Somewhat Important	Not Important
Commuting (to work)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Recreation/fitness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Errands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
School	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

3. Please identify locations that are hazardous or potentially hazardous for bicyclists. Locations may be road segments or intersections.

4. Please identify places that need better bikeway connections or improvements.

From	To
_____	_____
_____	_____
_____	_____

5. Suggestions for promoting bicycle use in your community:

* * * * *

Additional sheets may be added, as needed. Thank you for completing this questionnaire. Please return it in the enclosed, stamped envelope to Kimura International, Inc., 1600 Kapiolani Boulevard, Suite 1610, Honolulu, HI 96814. For questions, please call Glenn Kimura or Nancy Nishikawa at (808) 944-8848.



**WRITTEN COMMENTS
SUBMITTED AT OR
SUBSEQUENT TO
COMMUNITY MEETINGS**

Bike Plan
Hawaii

PROPOSED REVISIONS AND ADDITIONS TO BIKE PLAN HAWAII

Submitted by:
Walter S. Enomoto
293 So. Mokapu St.
Kahului, HI 96732
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November 8, 2001

I ask that the following items be incorporated into the next BIKE PLAN HAWAII;

ROADWAY AND GREEN WAY IMPROVEMENTS

- 1) Retain facilities or provide new facilities along Piilani Highway for non-motorized transportation (i.e: bicycling, walking, running, rollerblading, etc) Insure that whatever changes take place, comparable facilities and access along Piilani Highway for these activities are maintained.
- 2) When Haleakala Highway is up-graded to a divided four lane highway, add a separate bike/pedestrian path alongside the highway (much like what is planned for Mokulele Highway) or maintain 10-12 foot shoulders appropriate for non-motorized transportation uses.
- 3) Before design and construction of the long overdue Lahaina Bypass Road is done, designate that the old roadway be maintained as an open space green way corridor from Lahaina to Launiupoko. The state, along with the community, should help conceptualize and design this open space area to provide for beach and non-motorized access while maintaining this coastal area.
- 4) Include a bike/pedestrian path separate from the roadway possibly utilizing the old Pali Highway and/or the Lahaina Pali Trail when improvements along Pali section of Honoapi'ilani Highway are designed.
- 5) If any roadway improvements to North Kihei Road are planned, expansion of the roadway shoulders from the Kealia area to the junction at Honoapi'ilani Highway are strongly recommended due to the high winds in this area. If North Kihei Road is ever re-routed north of its present location in the future, the State should strongly consider using the "old" No. Kihei Road as an open space green way corridor. This would work well with the Kealia Pond Reserve Area. This green way corridor routing should connect with the Maalaea area to create a continuous non-motorized travel corridor and should also connect up with the Kihei Green way.

- 6) Develop a bike/pedestrian path from Happy Valley to Waihe'e in former macadamia nut farm lands.
- 7) Support development through completion of a Upcountry Greenway System.
- 8) Support development through completion of the Kihei Greenway (along No.-So. Collector road).

BICYCLE PLANNING

- 1) Create a State of Hawaii Greenway Master Plan.
- 2) Create a County of Maui Greenway Master Plan.
- 3) With any planned State and County roadway improvements, at least one representative from the bicycling community be part of any Citizen Advisory Committee.
- 4) Continue to support and expand role of State Bicycle/Pedestrian Coordinator to work with counties regarding bicycle related projects and improvements on a regularly scheduled basis.
- 5) Mandate that new housing developments incorporate "Smart Growth" features which increase bicycle and pedestrian travel.
- 6) Add "Smart Growth" features which increase bicycle and pedestrian travel when re-developing older communities.
- 7) Incorporate bicycle use into any future mass transit plans statewide. Create ways in which to integrate bicycle, pedestrian and mass transit travel.

BICYCLE FACILITIES AND MAINTENANCE

- 1) Perform regular sweeping of shoulders and bike paths and routes on all State and County roadways.
- 2) Enforce regulations regarding the clean-up of motor vehicle collision debris. If no regulation exists or is incomplete, create or revise regulations to include clean up and removal of all debris at an accident site. Much of the smaller debris now is swept onto the shoulders and bike paths where it causes flat tires.

- 3) Mandate that all new and existing State and County facilities have provisions for bicycle parking.
- 4) Create and support legislation (or other means) of requiring developers to provide for bicycle parking facilities in their plans for public use buildings and structures where appropriate.

BICYCLE EDUCATION

- 1) Support the BIKE-ED HAWAII Program statewide.
- 2) Create and support development of a statewide bicycle education program aimed at educating bicyclists cited and/or fined for improper riding.
- 3) Create knowledge and skills standards and certification for bicycle tour operators to help insure the safety of tour participants.

OFF-ROAD BICYCLE RELATED ISSUES.

- 1) Continue support and funding of the DLNR Na Ala Hele Program. This program has included off-road bicyclists in their trail creation and maintenance activities. This partnership between this program and off-road bicyclists have helped to create and maintain miles of trails on Maui as well as around the State.
- 2) Work with the legislature to pass legislation to help indemnify and/or limit liability to landowners who wish to open up use of their property for recreational activities (off-road bicycling, hiking, eco-tours.) or for green way easements through their properties.

MISCELLANEOUS BICYCLING ISSUES.

- 1) Investigate DOE policy of not allowing students to ride bicycles to schools. Work to find a solution that would allow for students to use bicycles for transportation (provided adequate facilities exist).
- 2) Create and support legislation through completion of a bicycle helmet law that would encompass all riders, not just children.
- 3) Develop ways to increase bicycle touring throughout the state. This would help to create an industry segment that is does not rely solely on motorized vehicles (which adds to congestion on the roads). Creating bicycle friendly facilities would go a long way to help stimulate this market.

- 4) Along the same lines as above, develop ways to increase the sport tourism market especially bicycling, tri-athlon, and running events which have helped support the visitor industry (like the Honolulu Marathon, Ironman Tri-athlon, and the Xterra Off-Road Mountain Bike Championships).

Group Report
Bike Plan for the Island of Hawaii, west side.

November 26, 2001

Submitted to: Glenn T, Kimura, President, Kimura International

Compiled by: Mary Osborne, President, Hawaii Cycling Club

Submitted by: See attached list of community members supporting this report.

CC: Vincent M. Llorin, P.E., Bicycle and Pedestrian Coordinator, State of Hawaii

Ann Peterson, PATH

Charles Denney, Sprinkle Consulting, Inc.

Sharon Ackles, Ironman Triathlon

Contents: Overview

Statement of Goals.

Statement of Priorities.

Detail of Priorities 1, 2, 3, 4. with Maps

Listing of other roadways/"bike route" regularly used by cyclists with maps and information.

Statement of proposal for maintenance of shoulders.

Statement of proposal for law enforcement.

Listing of report contributors and supporters.

OVERVIEW

The undersigned are active cyclists and pedestrians on the west side of the Big Island. Cycling is growing and will continue to grow on the Big Island. Our great weather and Aloha spirit provide a wonderful opportunity to enjoy cycling and all its benefits. The lack of a comprehensive bike plan and road improvements for cycling on this Island results in worsening safety issues, no commitment to alleviating traffic congestion through alternative transportation methods, loss of tourism geared to outdoor activities, economic stagnation, and increases in tragic loss of life in cycling accidents.

The size of our Island and the land ownership issues will preclude us from ever having huge freeways systems with overpasses, underpasses, on-ramping, etc., which would necessitate extensive separate bicycle routes. The most viable, economically feasible and common sense plan, in our opinion is to adopt a plan similar to the Oregon State Bicycle Plan. This in conjunction with setting slower motor vehicle speeds and making existing and new roadways cycling accessible to both cyclists and pedestrians in the safest manner possible.

The ability to ride safely and to share the road is paramount for all roadways on the Big Islands. Bicycling can and should co-exist on nearly all roadways if these roadways are signed, marked and shoulders widened and maintained. We look to the County, State and Federal government to work together to set this process in motion through considerations in the engineering of new roads and the maintenance and repaving of existing roads. Equal emphasis should be placed on what can be accomplished during the maintenance process of existing roads, as well as new road construction. It is imperative that the County become committed to a bike plan. It is not enough to have one or two small sections of State Highway improved for cycling and have the County roads with no improvements.

Education of the public, the children and the cyclists on safe cycling, bike handling skills, and rules of the road should be coordinated on a local level involving the schools, police, cycling clubs and other members of the community. This should include promotion and acceptance of cycling as a viable alternative to motorized transportation.

Off road cycling, separate pathways connecting communities and subdivisions should also be considered and efforts to designate utility, railroad, and other types of easements as passageways for these trails and pathways need to be worked out as land owners and developers obtain permits for projects. The need for areas for families with children to be able to recreation cycle or walk on separate pathways is seriously lacking on the west side of this island.

STATEMENT OF GOALS

1. For cycling to be accepted and encouraged as a viable method of transportation on the majority, if not all, of the roadways on the Big Island. For cyclists to be provided with signage, lane markings, shoulder widening, shoulder maintenance and law enforcement needed in order to ride safely.
2. For the County, State and Federal government to recognize that our lives and our economy stand to benefit substantially by providing a safe, accessible road system for cyclists and pedestrians. For these government entities to work together to forge and adopt a comprehensive bike plan, which will incorporate engineering standards that are used in all roadways maintenance, repair and construction actions. (e.g., Oregon roadway engineering standards).
3. For the children of the Big Island to have bicycle education and access to separate bike paths to learn and gain skill in cycling and for the schools to establish safer bicycle routes for children to be able to ride to and from school.

STATEMENT OF PRIORITIES:

1. Queen K Highway signage, paint markings of bicycle emblems and bike lane striping through intersections (and leading into and out of intersections) on all the Queen K Highway from Kailua to Hawi.
2. Alii Drive-Coast line section (for the whole of Alii Drive). Signage, paint markings, bike lane striping through intersections, and a plan to accommodate the heavy usage more efficiently and safely. Includes connectors to Queen K via Makala and Kam III Road.
3. Separate paved bike pathways. Continue Waiua Road Bike Trail, from Lako street to Kailua Village and construct a new pathway from Old Airport to Honokahou Harbor. Obtaining rights to use the existing easements and obtaining consideration in the permitting process of landowners and developers plans. Pathways are for the primary recreational use of families and as an alternative commuter routes.
4. New By Pass road above Alii Drive. Obtain wide bike lanes with signage and markings, and protective bike lanes mainly for children to ride to nearby Kahakai School.

DETAILS OF PRIORITIES

Priority 1: See map #1A, route highlighted in pink.

- A. The Queen K. Highway route from Kailua-Kona (Intersection of Henry Street and Queen). This route exists and a “Shared Roadway with Shoulder”. More bike signage, bike paint markings along shoulders. Attention to markings of bike lanes through intersections, with “intersection merge-in/out” markings and sign instructions to motorists and cyclists. Engineering standards should be followed as per the Oregon Bike Plan. This is what is needed to make this a safe and great bike and commuter route.
- B. See attached Map #1B, route highlighted in pink. Intersections are highlighted in yellow. It would be out of the report contributors area of expertise to attempt to determine signage, paint marking etc., Site distances, lights, traffic patterns, shape of roads have to be considered. However, we can state that only one of the two areas with bike intersection markings on the Queen K is adequate for that area. The one at Hina Lani St. is not adequate. Standards for these things are already in existence in the Oregon Bike Plan. We have highlighted in yellow the busiest intersections and areas with cross traffic.

Priority 2: See map 2A, route highlighted in pink

- A. Alii Drive and connector “loop” as indicated. This route exists and combination of a “Shared Roadway with Shoulder” and areas of no shoulders and no shoulder markings. From the intersection of Queen K Highway and Makala and Queen K Highway and Kam III Road. The Alii Drive section on the coastline is heavy used by both pedestrians, cyclists and tourists in motorized vehicles. This loop needs more signage, paint markings, attention to markings of bike lanes through intersections, and shoulder maintenance. It also needs a plan to better accommodate the flow of the different types of traffic on the coastline section.

Priority 3: See map 3A, route highlighted in pink.

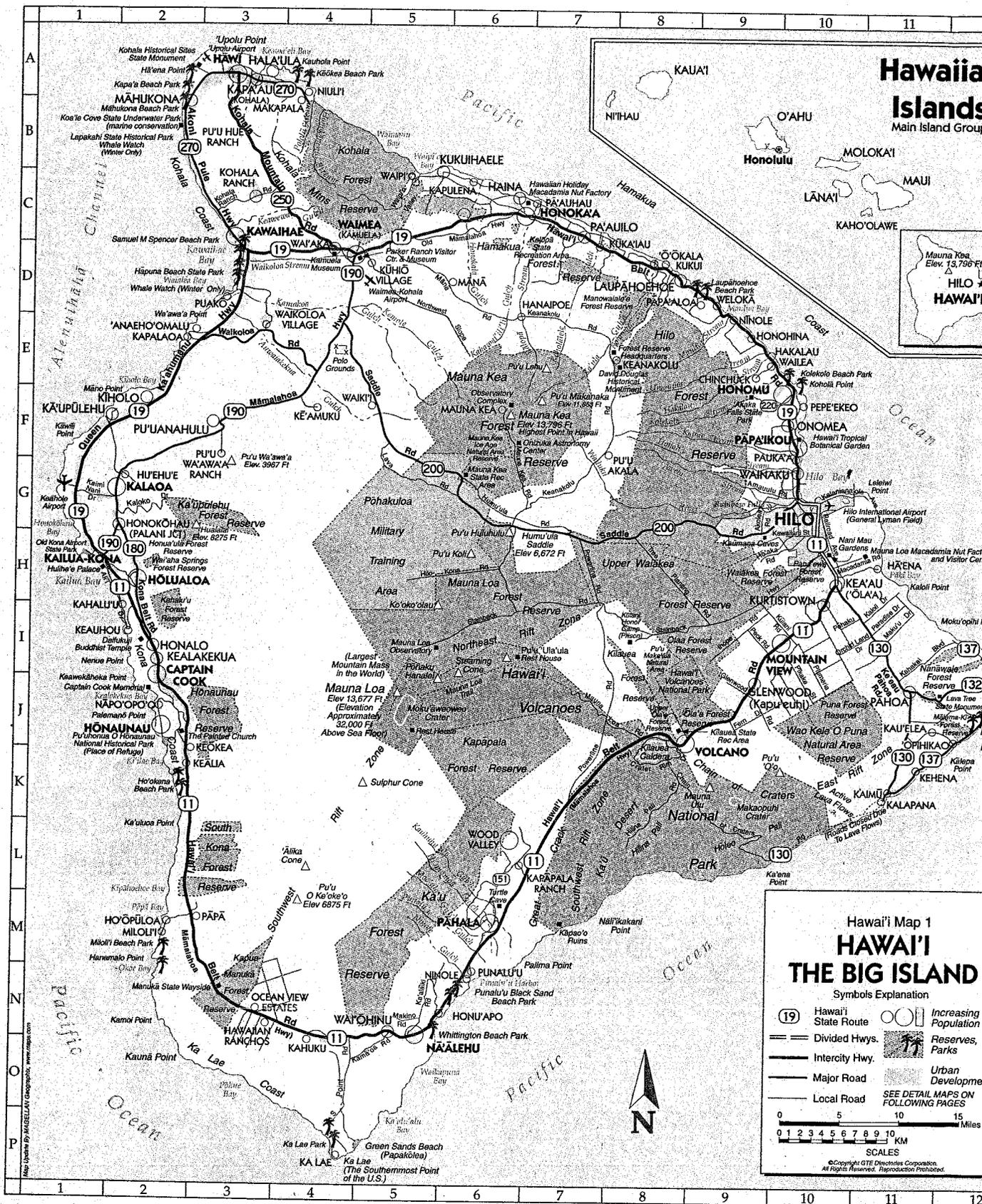
- A. This route to be a separate bike path possibly along an existing utility easement. Should be engineered relatively flat and make wide enough to accommodate cycling in two directions and pedestrians.

Priority 4: See map 4A, route highlighted in pink.

- A. New By Pass road above Alii Drive (not constructed). Needs shoulder bike lanes with signage and striping.

MAP 1A

AREA MAPS



Hawai'i Map 1
HAWAII
THE BIG ISLAND

Symbols Explanation

- (19) Hawai'i State Route
- Divided Hwys.
- Intercity Hwy.
- Major Road
- Local Road
- Increasing Population
- Reserves, Parks
- Urban Development

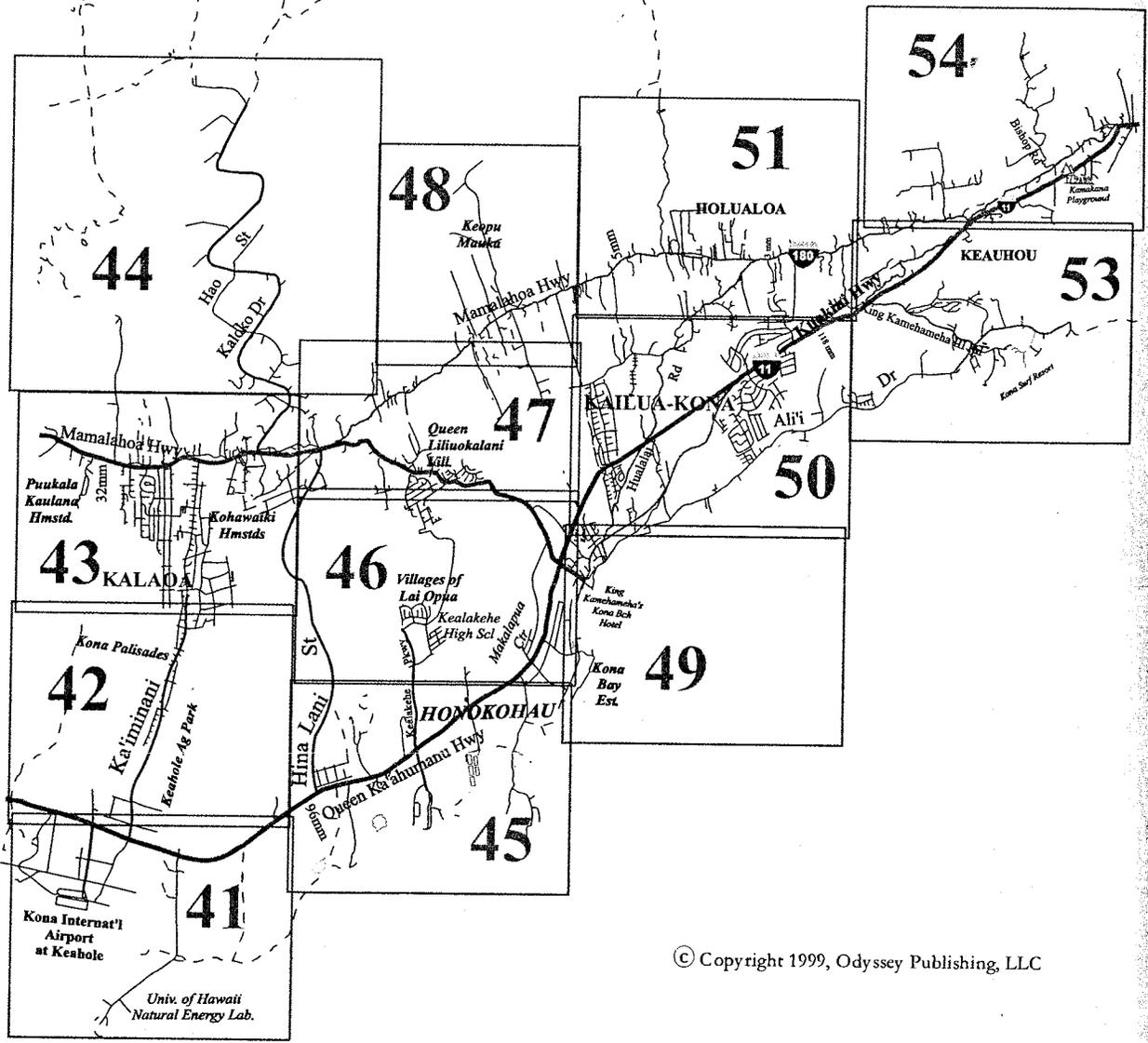
SEE DETAIL MAPS ON FOLLOWING PAGES

0 5 10 15 Miles
 0 1 2 3 4 5 6 7 8 9 10 KM
 SCALES

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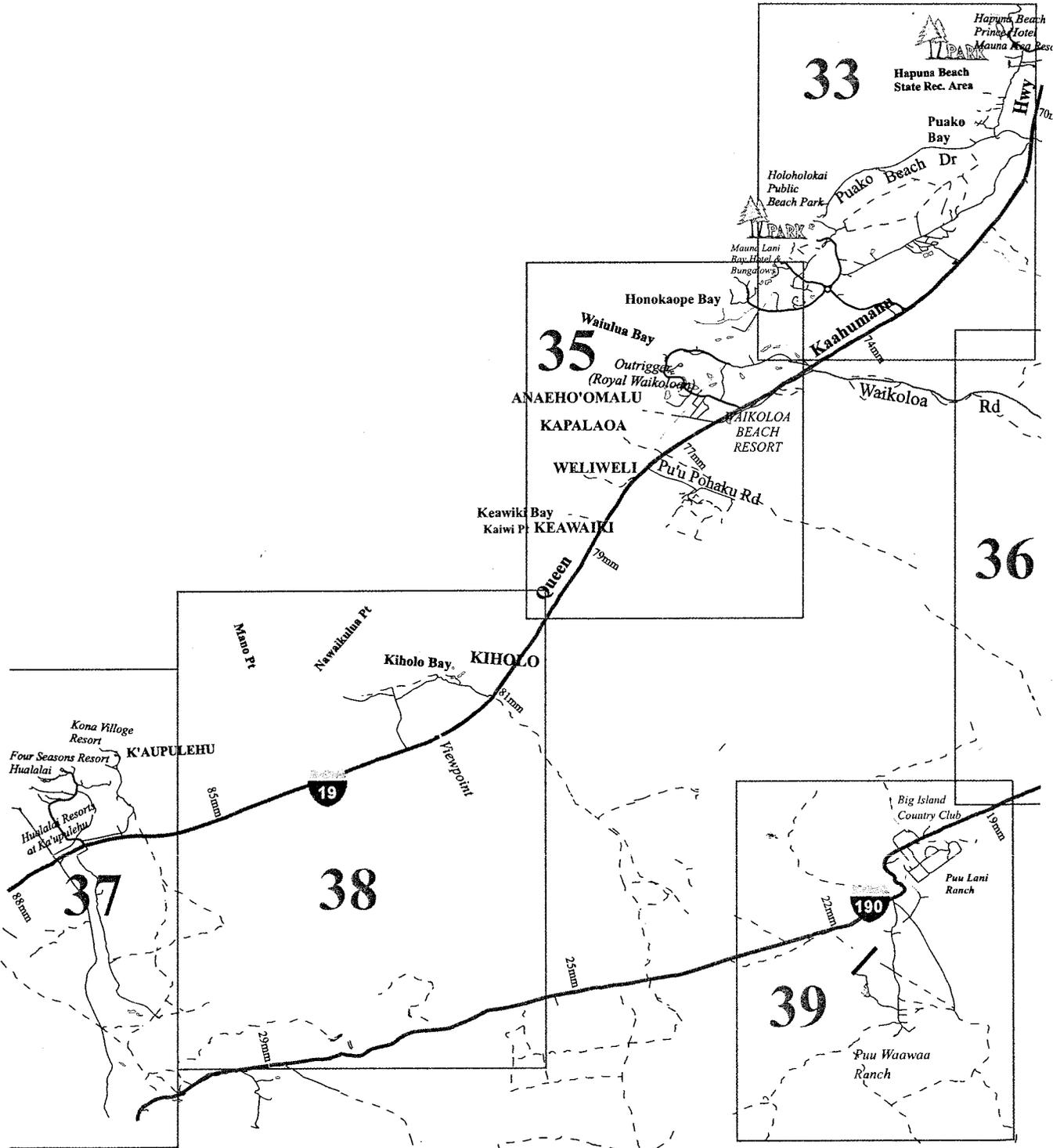
MAP 1B - 4 SECTIONS

WHOOPS!! Please note this map is turned 90 degrees in order to fit page. Up, or north, is now to the left.

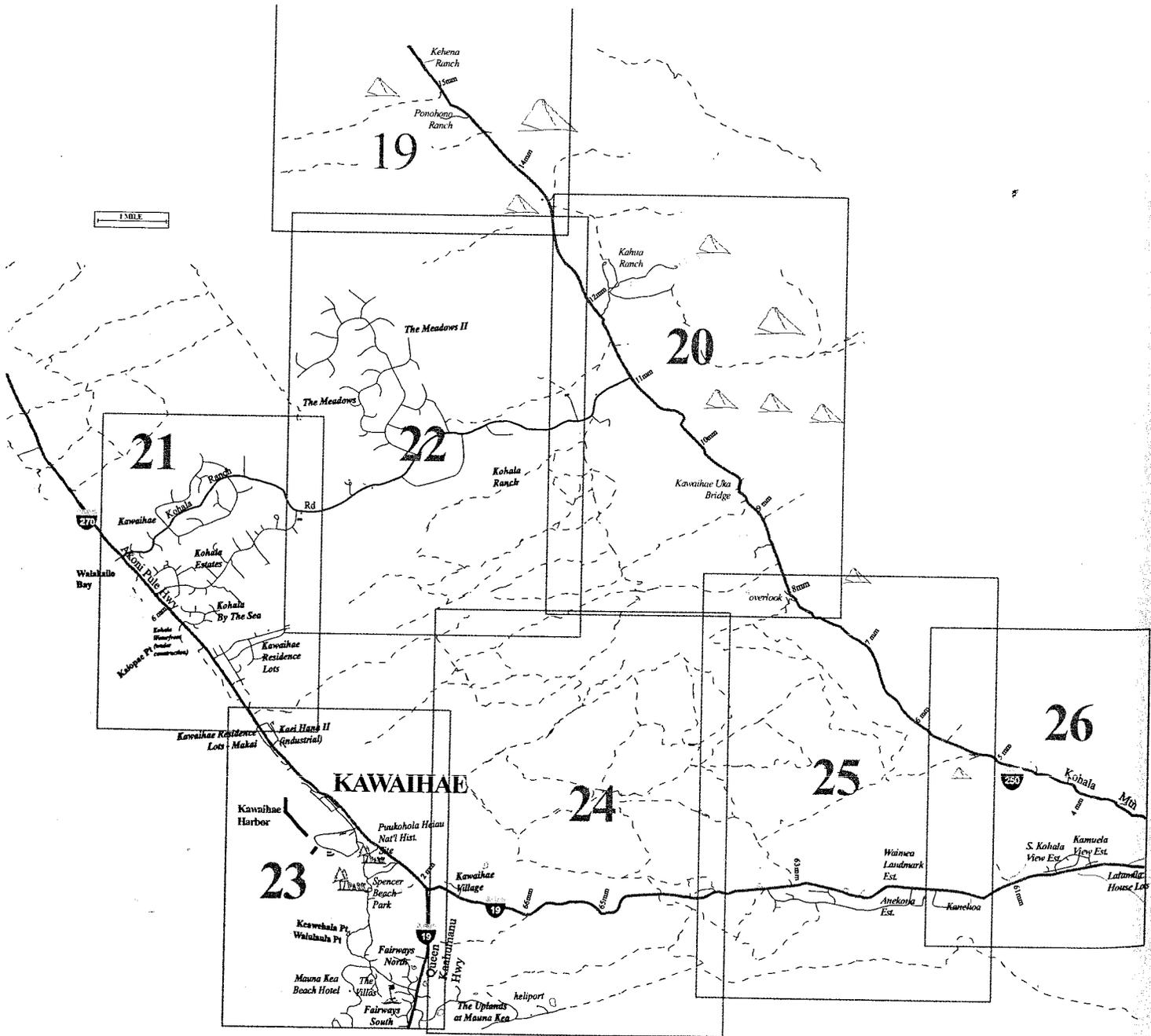


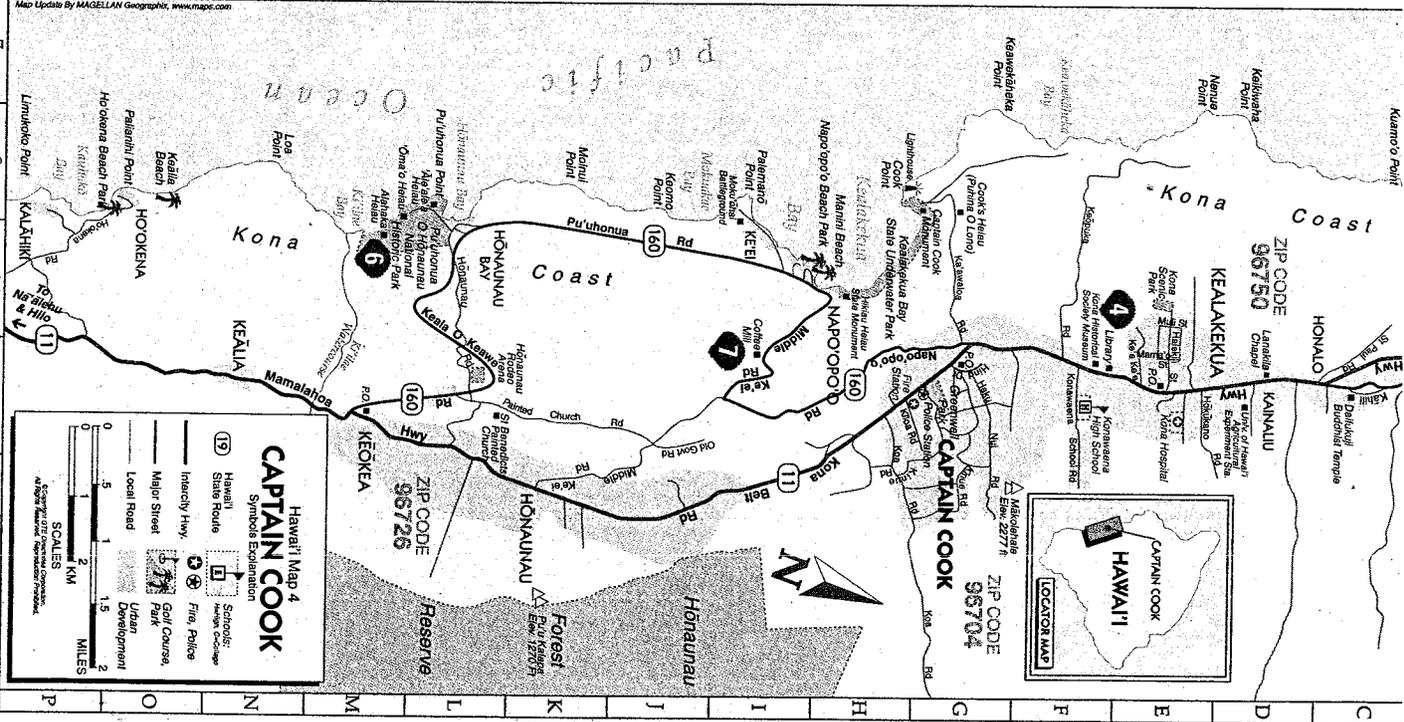
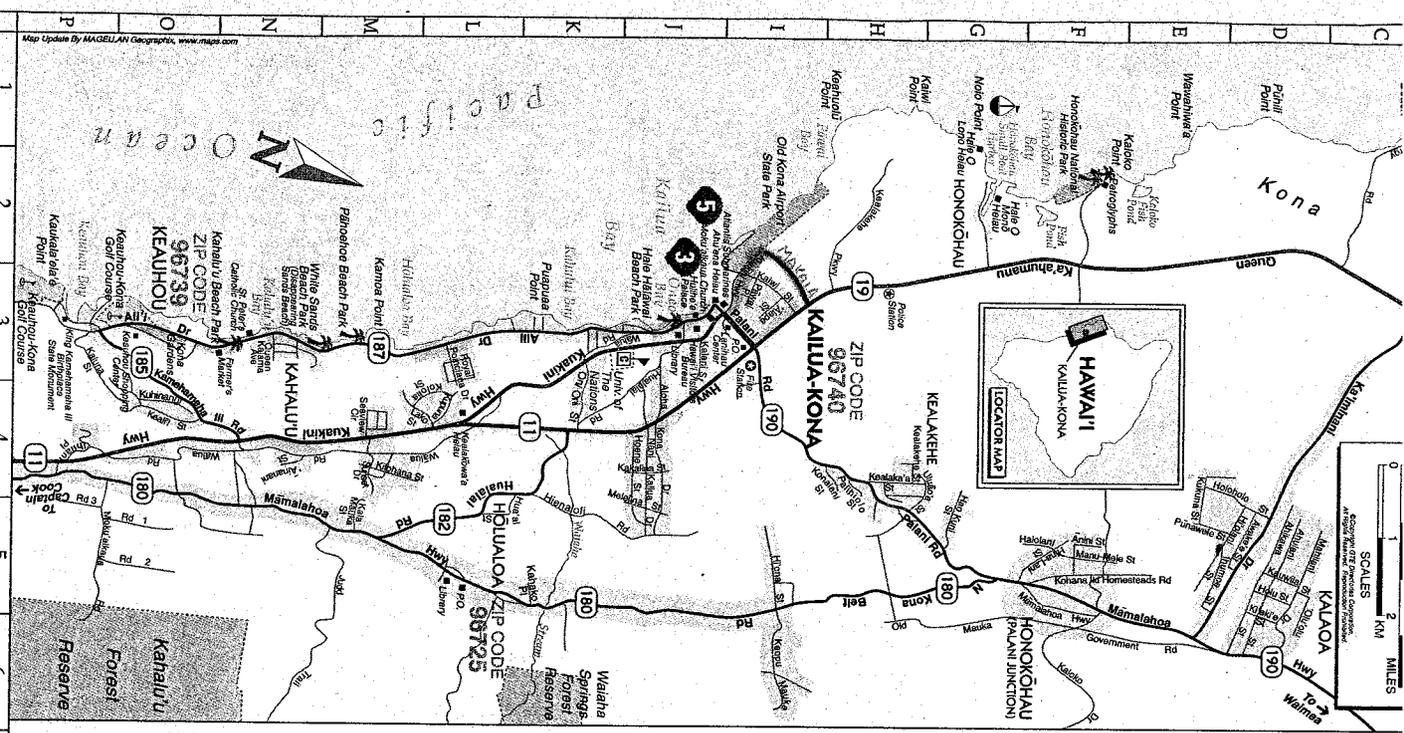
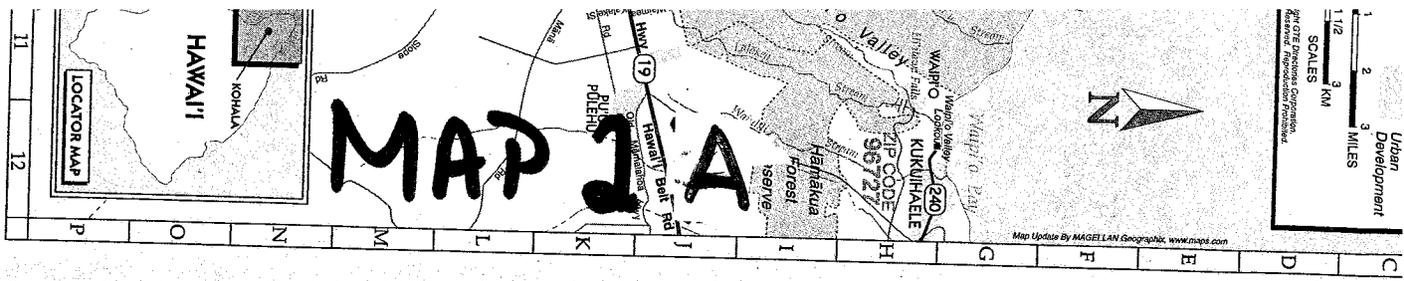
MAP 1B

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MAP 1B





Hawaii's Map 4
CAPTAIN COOK
 Symbols Explanation

- Hawaii's State Route (19)
- Intercity Hwy.
- Major Street
- Local Road
- School
- Police
- Golf Course
- Urban Development

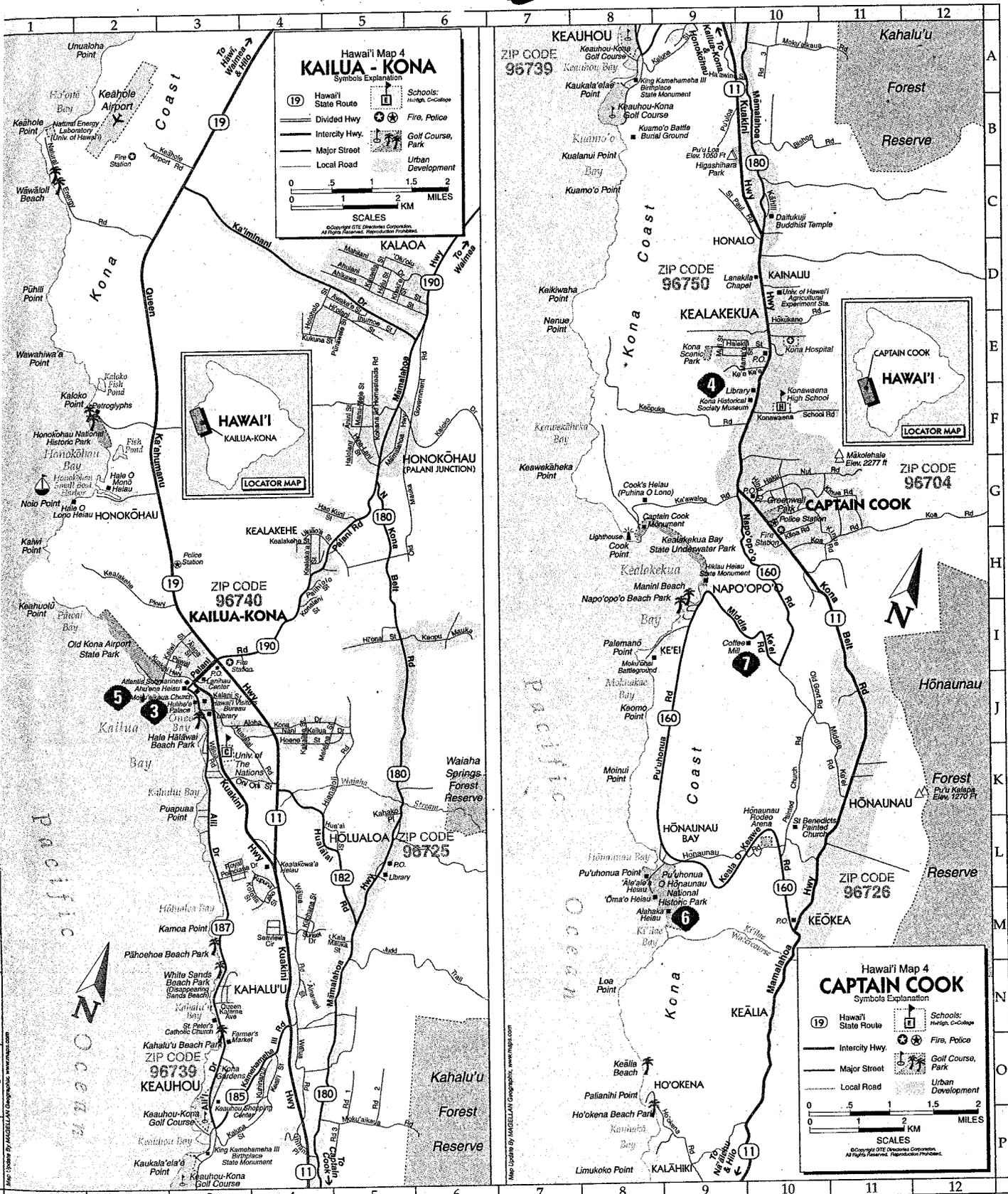
Scale: 0 to 2 Miles / 0 to 2 Kilometers

AREA MAPS

LISTINGS OF ROADWAYS

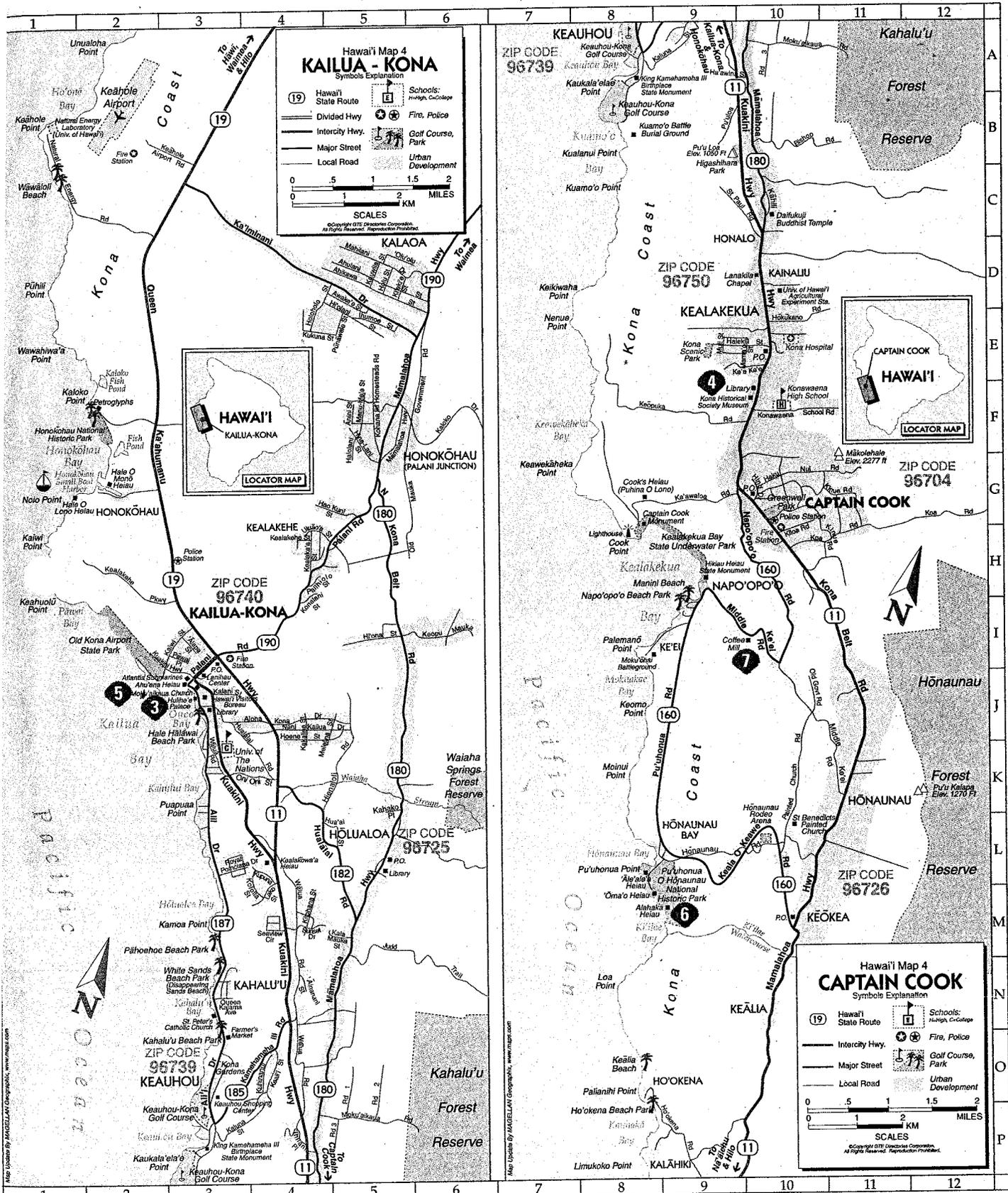
- A. Palani town route. See map 5A, route highlighted in green. From the Kaewi Intersection at Palani to the Lunapule Intersection, including the Walua Connector to Alii Drive. . This route is narrow with multiple intersections and driveways. It is also heavily used by cyclists and pedestrians. Some repaving of the road was recently done without a repaving of the already deteriorating narrow shoulder. This loop needs more signage, paint markings, attention to markings of bike lanes through intersections, and shoulder paving and maintenance.
- B. Hualalai route from town to Mamalahoa Highway. See map 5B, route highlighted in green. From Intersection of Palani to intersection of Mamalahoa Highway, then north to Palani Junction. This route is extremely narrow, lacking shoulders in many places but is routinely used by cyclists. This route needs repaving and widening of shoulder areas before signage, and markings will be effective.
- C. Mamaloahoa Highway at Hualalai Road to Napo'opo'o Rd., to Honaunau , with loop at Middle Ke'ei, Pu'u honua Rd., Keaia O Keawe Rd., to Painted Church Rd. See map 5C, route highlighted in green. This route has some good shoulders, narrow shoulders, some rough pavement, and is routinely used by cyclists. Needs signage, paint markings, some shoulder paving, widening, and shoulder maintenance.
- D. Kailua town to Volcano. See map 5D, route highlighted in green. This route is used consistently by cyclists include cycling tour companies. It is a mix of good and narrow shoulders, some rough pavement. Needs signage, paint markings, some shoulder paving, widening, and shoulder maintenance.
- E. Northwest climbing route. See map, 5E, route highlighted in green. This route used regularly by cyclists. It is a mix of good and narrow shoulders, some rough pavement. Needs signage, paint markings, some shoulder paving, widening, and shoulder maintenance.

MAP 5B



AREA MAPS

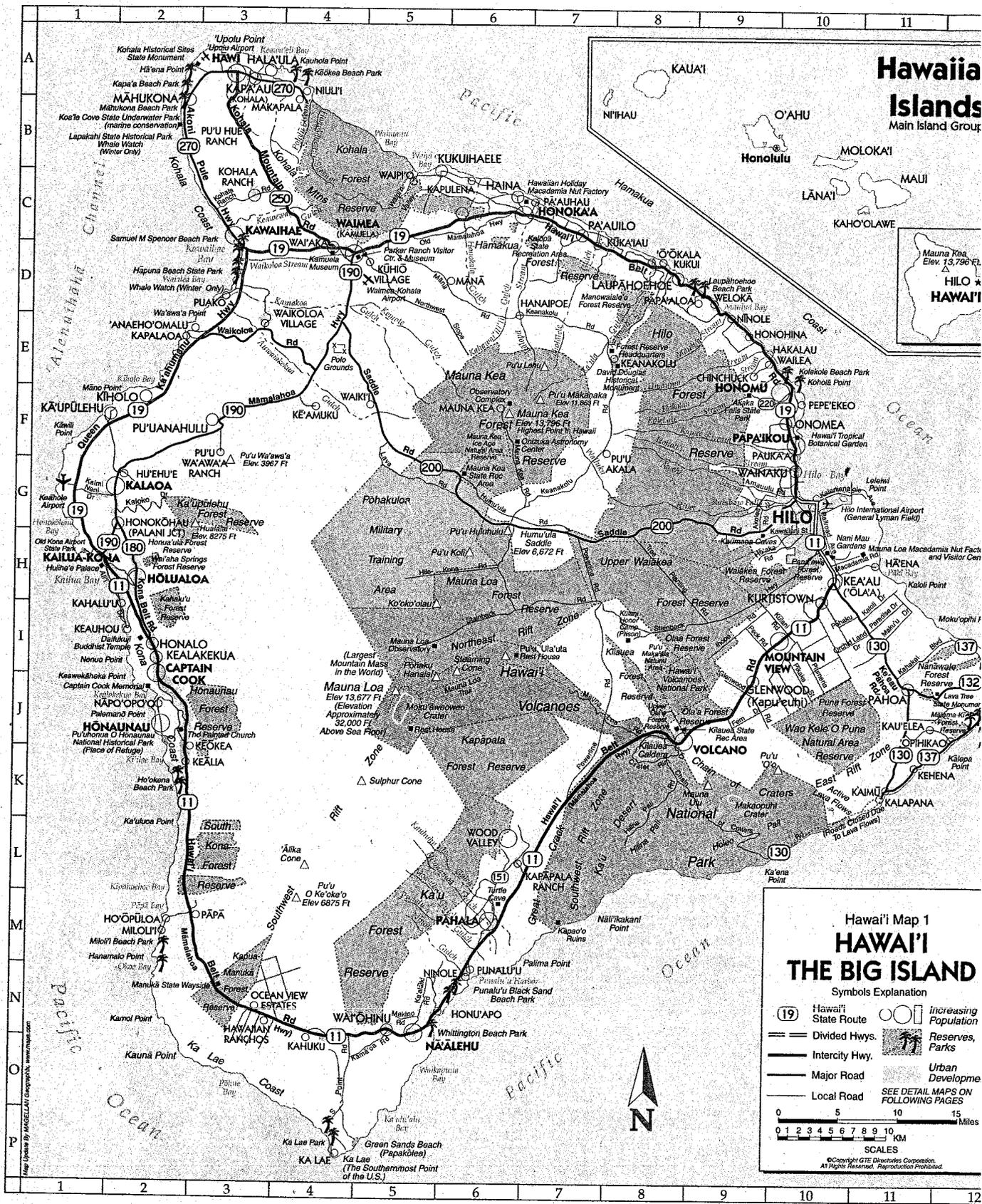
MAP 5C



AREA MAPS

MAP 5.D

AREA MAPS



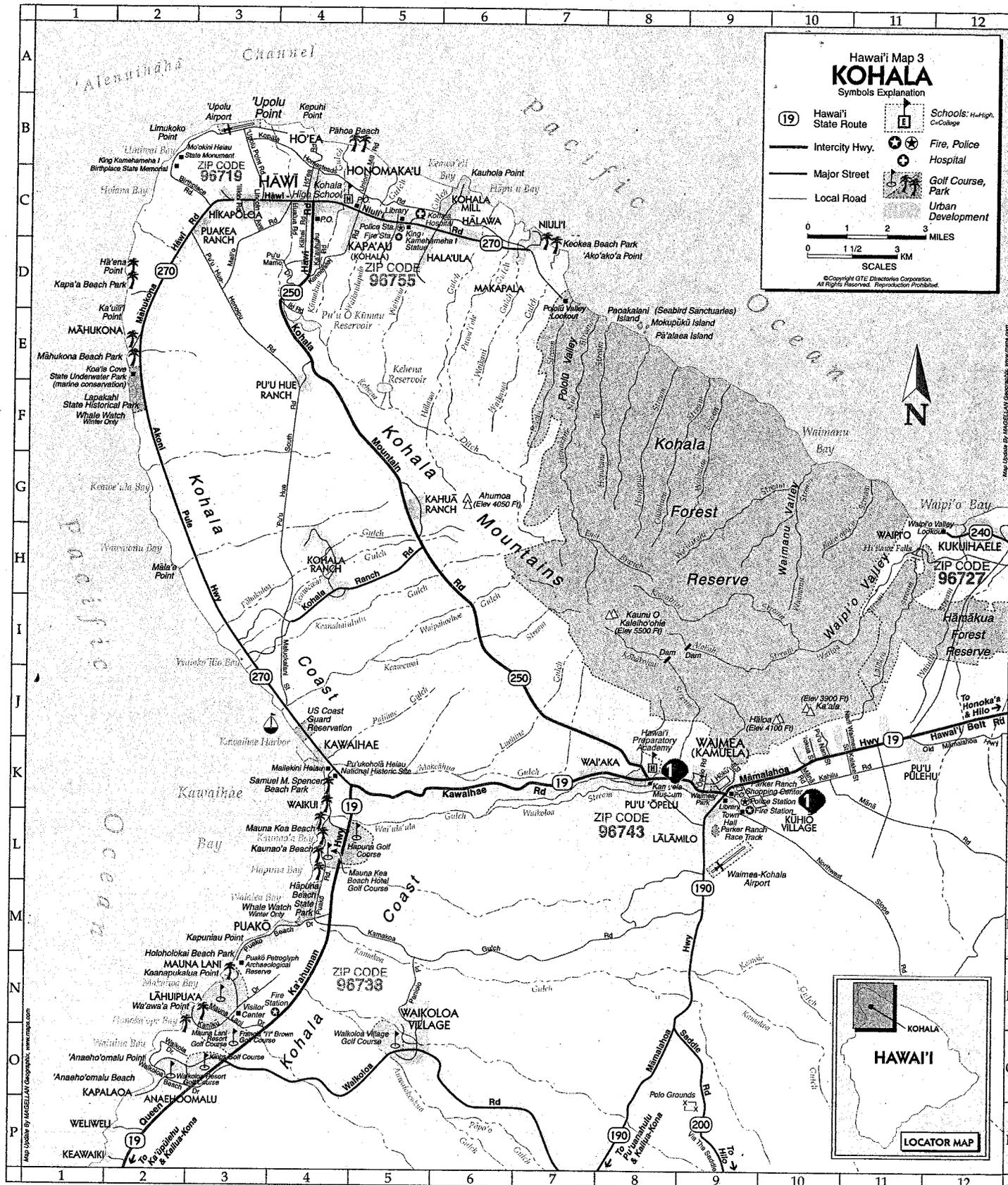
Hawai'i Map 1 HAWAII THE BIG ISLAND

- Symbols Explanation
- Hawai'i State Route
 - Divided Hwys.
 - Intercity Hwy.
 - Major Road
 - Local Road
 - Increasing Population
 - Reserves, Parks
 - Urban Development
- SEE DETAIL MAPS ON FOLLOWING PAGES
- 0 1 2 3 4 5 6 7 8 9 10 KM
0 1 2 3 4 5 6 7 8 9 10 15 Miles
- SCALES
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5E



AREA MAPS

16

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STATEMENT OF PROPOSAL FOR MAINTENANCE OF SHOULDERS.

Through cooperation of County, State and Federal governing agencies, the following.

1. Routinely extend shoulders and level them to the roadway. During road repaving, all the road and shoulder should be done at once to create a smooth surface from the center of the road to the far edge of the shoulder.
2. Routinely sign, stripe, and mark intersections for bike passage.
3. Routinely repair failing asphalt, pot holes, and root and shrub intrusion on the road and shoulder.
4. In construction areas, advise contractors, developers and truck owners that dumped or kicked up gravel, rocks or other debris on shoulders must be cleaned up daily. Bicycle safety must be considered during construction. Some enforcement method needed.
5. Sweep shoulders two to three times a week. Potentially work with the community groups to help.
6. Better lighting of roadways.

STATEMENT OF PROPSAL FOR LAW ENFORCEMENT.

The following having become serious problems for cyclists and pedestrians on the west side. Through cooperation of the police department and the community, these problems need solutions including education, awareness, and enforcement.

1. Speeding and red light running.
2. Broken bottles/glass, large rocks, lumber, metal objects, etc., on shoulders.
3. Drunken driving issues.
4. Cyclists riding against traffic, and running stop signs/lights.
5. Vehicles driving and passing on the shoulders.
6. Harassment and threatening by motorists directed at cyclists.
7. Litter on the roads.
8. Rules for bike lighting and reflectors for night riding.

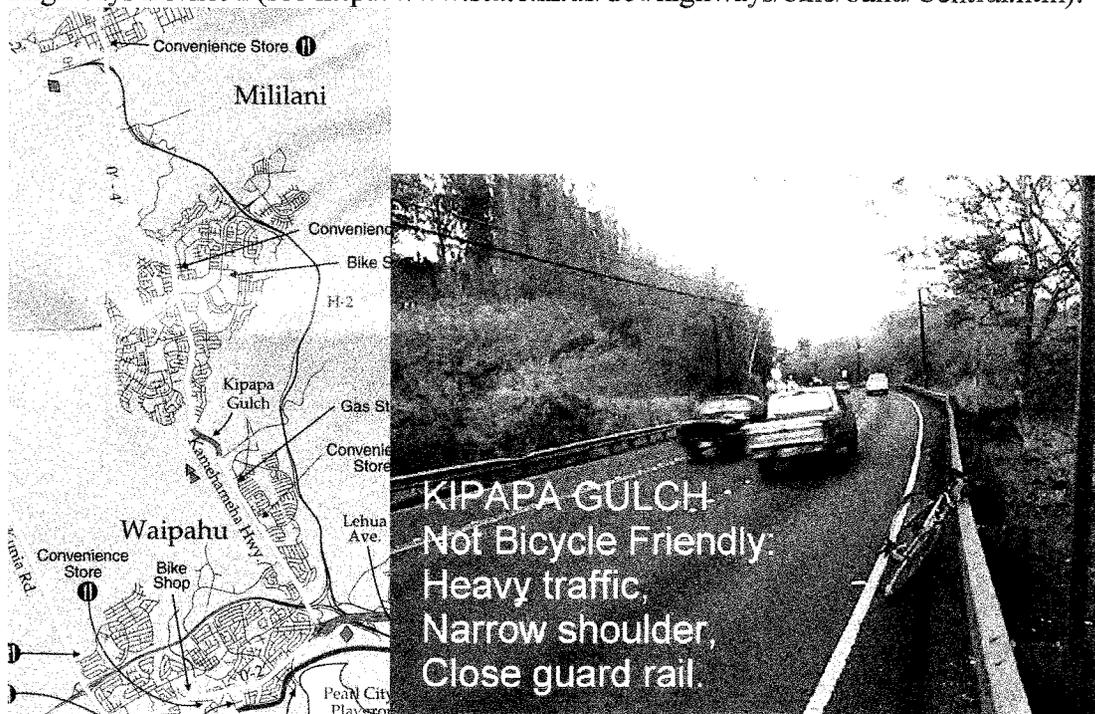
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Kipapa Gulch Old Kam Bikeway: A Proposed Alternative to Kamehameha Highway

Problem: Mililani Inaccessible to Cyclists and Pedestrians

Currently the only bike route connecting Mililani through Kipapa Gulch to Honolulu is via Kamehameha Highway, a section that is red-lined as "Not 'Bicycle Friendly'" on the Bike Oahu map published by the State Department of Transportation Highways Division (see <http://www.state.hi.us/dot/highways/bike/oahu/Central.htm>).

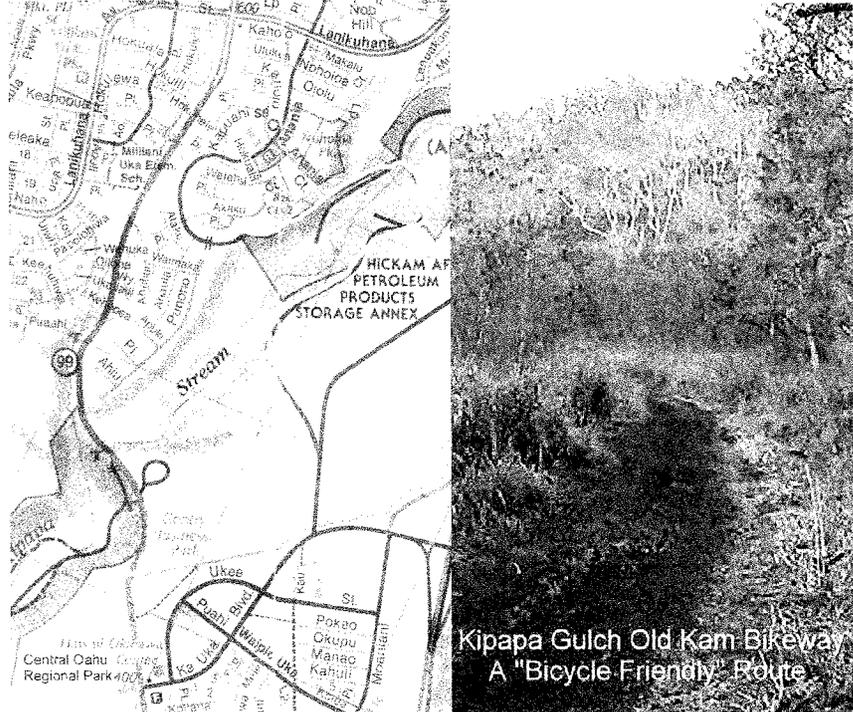


Routes that are not bicycle friendly are defined as "roads that have heavy traffic and do not have adequate shared use between bicyclists and motorists." The current Bike Plan Hawaii (see <http://www.hawaii.gov/dot/bikeplan.htm>) states: "A major difficulty with access from Ewa/Pearl City to Central Oahu involves the relatively poor conditions for bike travel along the Kamehameha Highway, especially as it crosses the Waipio and other gulches." Although dedicated bicyclists regularly traverse Kipapa Gulch via Kamehameha Highway, the heavy traffic with narrow shoulders and winding road deter most recreational riders and commuters.

The Central Oahu Sustainable Communities Plan (see <http://www.co.honolulu.hi.us/planning/central/>) calls for development of bike and pedestrian routes throughout the region including a need for bike routes linking the Central Oahu Regional Park with surrounding communities. "Central Oahu will be developed with a transportation system which provides easy access to transit, uses traffic calming design, and encourages people to walk and bike, reducing the need for the automobile (p. 2-4)." "The design of recreational attractions may have a distinct identity and entry, but there should be elements that link these destinations with surrounding areas through the use of connecting roadways, bikeways, walkways, landscaped features or architectural design (p. 3-14)." "Trails leading from the Central Oahu Regional Park to Waikele Gulch, connecting to a trail system throughout Central Oahu gulches should be

developed (p. 3-14)." The new park located across Kipapa Gulch from Mililani is a major recreational facility that would be accessible for walkers and bikers from that community if a safe route were available.

Proposed Kipapa Gulch Old Kam Bikeway



The Old Kamehameha Highway through Kipapa Gulch could be developed as a bike path linking Mililani to the Central Oahu Regional Park providing a safe, scenic and historic route for pedestrians and bicyclists. On the Mililani side of the gulch, Anania Drive provides convenient access to the Old Kamehameha Highway, an old agricultural road that gradually slopes down the side of Kipapa Gulch in the direction of the H-2 Freeway, crosses Kipapa Stream, then switches back and up the other side. Reaching the top directly across the gulch from the starting point at the end of Anania Drive, the Old Kamehameha Highway then proceeds about .4 mile through a pineapple field to Ka Uka Boulevard across from the Costco store. An ideal route for the Bikeway would be to turn southwest about .1 mile after emerging from Kipapa Gulch to follow the edge of the fields and gulch up to Kamehameha Highway.



Advertiser (“Air Force to begin removal of fuel”, September 4, 2001, section B, page 1), the Air Force stopped using the facility a few years ago and will “remove four 2.4 million-gallon tanks in Kipapa Gulch ... The clean out of the old tanks is expected to take place from January to April [2002].” Ed Lanctot of the Real Estate Division, Directorate of Public Works, Department of the Army, said the Army continues to use their old munitions storage facility in the gulch for training activities. This area on the northeast side of the gulch road is separately gated but may require additional fencing to prevent unauthorized access. If security issues can be satisfactorily addressed, an agreement with the military permitting use of the Old Kamehameha Highway for the bike path may be possible.

The pineapple field is currently owned by Castle and Cooke but is under negotiation for sale to Wahiawa General Hospital with “a plan to create a major health, sports medicine and biomedical research park on a 210-acre site... Wahiawa General Hospital and its affiliate company, Pacific Health community Inc. ... recently signed an acquisition agreement for the land. ... The sale of the first 80 acres is expected to take place in Dec. 2001” (L. Danninger “Medical Mecca.” Honolulu Star-Bulletin, August 5, 2001). Beverly Kaku of Castle and Cooke said that Castle and Cooke is currently in negotiations to acquire the Old Kamehameha Highway right-of-way through the field for inclusion in the land parcel to be sold to Castle and Cooke. An artist’s rendition of the proposed medical park included in the Star-Bulletin article suggests that the field perimeter route for the Kipapa Gulch Old Kam Bikeway would pass through landscaped areas behind a senior living facility and would not be in conflict with the proposed medical buildings and roads. “New development projects are an opportunity to provide public access to trail heads ... approaching the edges of gulches (Central Oahu Sustainable Communities Plan, p. 3-17).”

The existing pipeline bridge across Kamehameha Highway that is suggested as a site for a pedestrian-bicycle bridge was originally an irrigation canal that appears to have been connected to the Waiahole Ditch. In accord with the Central Oahu Sustainable Communities Plan, “the use of utility easements for pedestrian and bicycle routes should be permitted, consistent with all applicable operations, maintenance, and safety requirements (p. 3-9).

Recommendation

The Kipapa Gulch Old Kam Bikeway proposal is recommended for consideration for funding under the Transportation Enhancement Project budget of the State Department of Transportation.

Community Affairs Committee
Hawaii Bicycling League

The Honolulu Advertiser NEIGHBORS

PAGE B3 ★

TUESDAY • JANUARY 29, 2002

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Safer bike path to Waipi'o park sought

By Scott Ishikawa
ADVERTISER, CENTRAL O'AHU WRITER

MILILANI — Neighborhood bicyclists who have found it difficult to journey safely to the city's new Central O'ahu Regional Park across from Waipio-Gentry may eventually have a safer route along a proposed 2-mile bike path through Kipapa Gulch.

The Hawai'i Bicycling League is pushing an idea to use the Old Kamehameha Highway agricultural road that runs through Kipapa Gulch, in keeping with the city's Central O'ahu Sustain-

able Communities Plan for more bike and pedestrian routes throughout the region. To get to the new park from Mililani, bicyclists have to cross Kipapa Gulch on Kamehameha Highway. The narrow stretch of highway has been labeled "not bicycle friendly" on the state's Bike O'ahu guide map. The H-2 Freeway, another route between Mililani and Waipio-Gentry, does not allow bicyclists.

"If Kamehameha Highway heading over Kipapa Gulch is already dangerous for motorists, can you imagine what it must be like for bicyclists?"

said David Bremer of the Hawai'i Bicycling League, who spoke before the Mililani Neighborhood Board last week.

Bremer said the proposed path would reduce the need for parking at the regional park. There is no timeline or estimated cost for the project.

The Mililani board voted unanimously in favor of the bike path, authorizing \$30,000 in city money for a planning study. (Each of the 32 O'ahu neighborhood boards is allowed to determine how \$1 million from the city's capital improvement program is spent on area proj-

ects.) The bike/pedestrian path would begin at the end of Anania Drive in Mililani, cross a concrete bridge over Kipapa Stream and slope up to the other side through fallow pineapple fields to Kamehameha Highway. From there, riders could access the north end of Central O'ahu Regional Park on a Kamehameha Highway crosswalk or a proposed walk bridge.

"This way, bicyclists don't have to load their bikes into their cars just to ride at the park, and kids attending soccer practice or other sports activities can just bike down

there," Bremer said. "While paving along the road has degraded in sections, it seems repaving would be a simple matter."

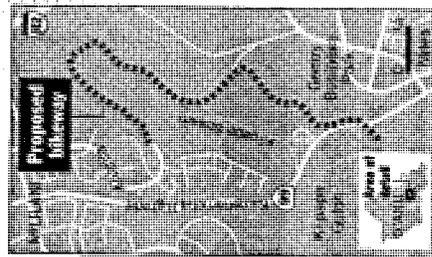
Harry Saunders, president of Castle & Cooke Homes Hawai'i Inc., said he is willing to talk with Hawai'i Bicycling League officials, because a portion of the bikeway would be on Castle & Cooke land.

"Maybe we can make it part of our Koa Ridge medical community," Saunders said, referring to a proposed project nearby for which the company is seeking rezoning. One neighborhood board member expressed environ-

mental concerns, because the proposed bike route would cross over underground World War II aviation fuel tanks and pipelines that run from Central O'ahu to Hickam Air Force Base.

Bremer replied that the Air Force last month had removed residual fuel from four 2.4 million-gallon tanks in Kipapa Gulch, plus 20 miles of pipeline constructed in 1943. Designed to withstand enemy air attacks, the pipeline remained operational until 1993.

Reach **Scott Ishikawa** at sishikawa@honoluluadvertiser.com or 535-2429.



The Honolulu Advertiser

Olaa Keaau
HISTORICAL
Society.

SANDY BUNK
PO. 10927 HILO
MARY M. PORTER
HCR 1 Box 5505
KEAAU HI
96749

TIRO SUMADA
WH SHIPMAN

May 9, 2002

Honorable State Highways
Bike Path Planners,

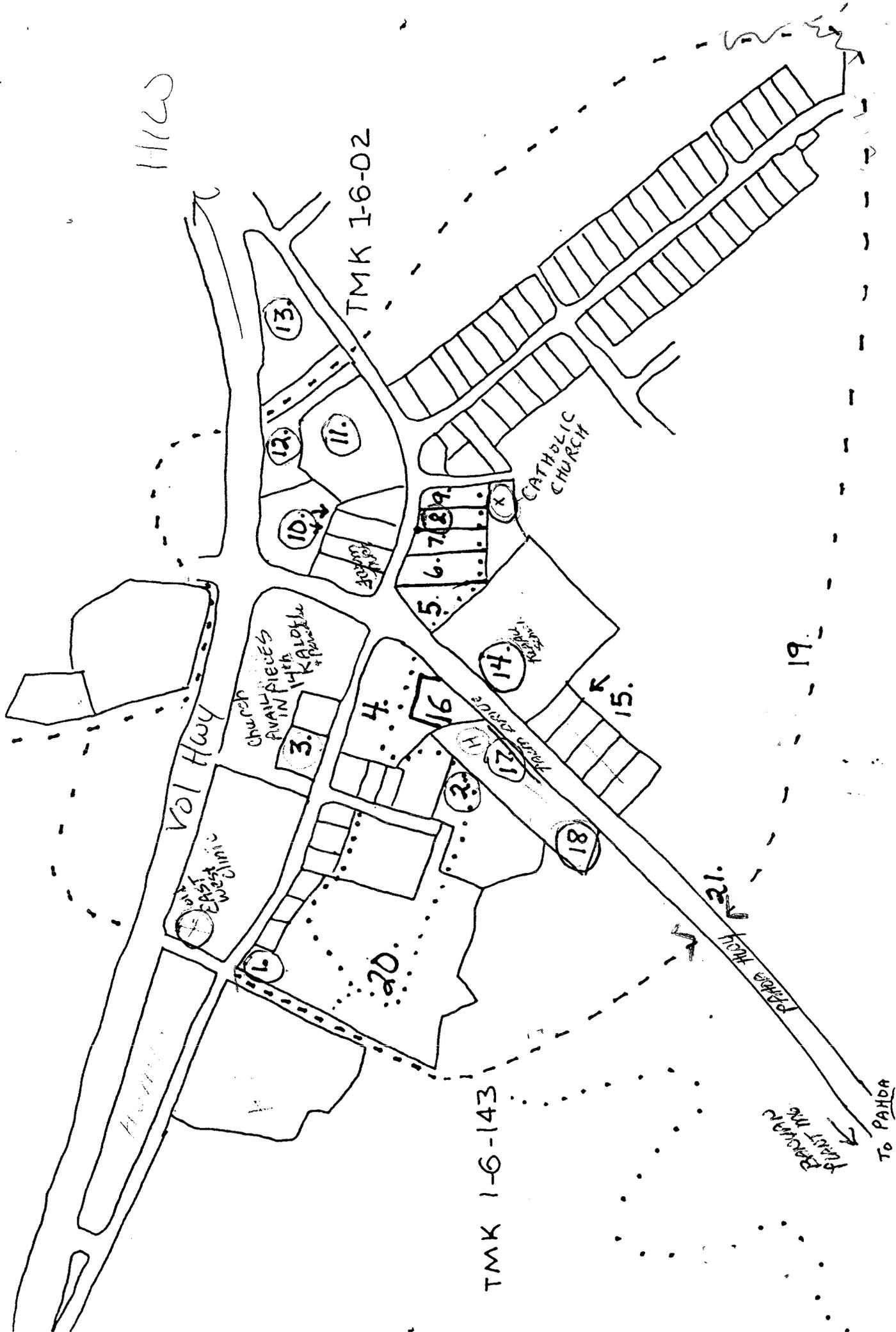
I thank you for your efforts to create bike paths, off highways but near them, as alternative transportation.

The Olaa Keaau Historical Society has recently made a film of our proposed bike path around Keaau Town. We include a map of this plan which we submitted to W.H. Shipman in 1994, as an idea. Of course we would love to see the plan become a reality as we believe bike paths and trails augment historic preservation efforts by invigorating the economy. We envision our proposed path connecting to a network that comes from Pahoa, Volcano and goes into and around Hilo.

2/ We can see downtown Hilo revitalized by this path that would bring visitors to East Hawaii and allow them access to our lovely parks and beaches, waterfalls and historic buildings via a bike path trail. This alternative highway for bikes (and walkers too) is an incredibly beautiful way to see the many unique features of Hawaii, while avoiding the accidents that can occur when the inexperienced, elderly, or youthful rider attempts the highway bike lanes.

Thank you, and we hope to ride an asphalt bike path, alternative "highway" in the near future. Mahalo. Ivey Scott, Pres. (1983)
Mary Manner Porter (Secretary)

12R OLAHA-KEAAU HISTORICAL SOCIETY





W.H. SHIPMAN, LIMITED
KEAAU
HAWAII ISLAND

**FAX TRANSMISSION
FROM 808-966-8522**

DATE: 5/23/02 TIME: HST
TO: Kimura International
ATTENTION: Nancy Nishikawa
FAX No. 941-8999
FROM: Jiro Sumada

Number of pages transmitted including this page: 2

Questions or problems, call 808-966-9325

REMARKS & INSTRUCTIONS:

Nancy:

Sorry we keep missing each other. Attached is a drawing of the Bike & Walking Trail we are working on for a DOH Healthy Hawaii Initiative Grant. We are still working out the details of how much can be built with \$20,000 and for the County Parks & Recreation to take over liability.

When we talk I can fill you in better.

Jiro

P.O. Box 950
Keauau, Hawaii 96749

"A Kamaaina Company Contributing to the Planned Growth of Hawaii"
Established 1923

(808)966-9325
Fax: (808)966-8522

In June 2002

To: <projects@kimurainternational.com>,
"Hl Bike Vincent Lorin (E-mail)" <vincent_lorin@exec.state.hi.us>
Cc: "Chris Sayers (E-mail)" <csayers@co.honolulu.hi.us>,
<jhalvo_hrd@hotmail.com>
Subject: Proposed Bike Plan Project - Kam Hwy, H-1 overpass

As mentioned in the Mililani Bike Plan briefing, one of the most dangerous hazards for bicyclist traveling from Pearl City to either Waipahu, Waipio or Mililani is the west bound Kamehameha Highway overpass above H-1 and H-2 (see map). This bridge overpass does not have any shoulder on the right side of the 3 lane roadway and is on a slight upgrade (Photo). The lanes are very narrow. Traffic coming off of H-1 remains at high speed, 45-60 MPH, and many are trying to merge through the other 2 lanes on the bridge (Photo) to make the right lane off ramp to Waipio. The left lane of the bridge overpass has an approximate 3 foot shoulder (Photo) which is of no benefit bicyclist.

This situation presents a hazard to both bicyclist and motorist. The hazard for bicyclist is obvious in having no shoulder, a bridge drop off if bumped, a narrow lane with insufficient room for a car and bicyclist, an upgrade slowing the bicyclist, and traffic at freeway speed trying to merge through 2 lanes of traffic. The hazard for motorist occurs when they are unable move to the center lane and have to slow behind the bicyclist, risking being rear ended.

The quickest and easy solution would be to create a right shoulder by moving the lane markings to the left and eliminating the left shoulder

Because this project would be relatively inexpensive and would eliminate a significant hazard to both motorist and bicyclist, I hope it will be given the highest priority for not only the new Bike Plan, but maybe even immediate correction by DOT without waiting for the Bike Plan. .

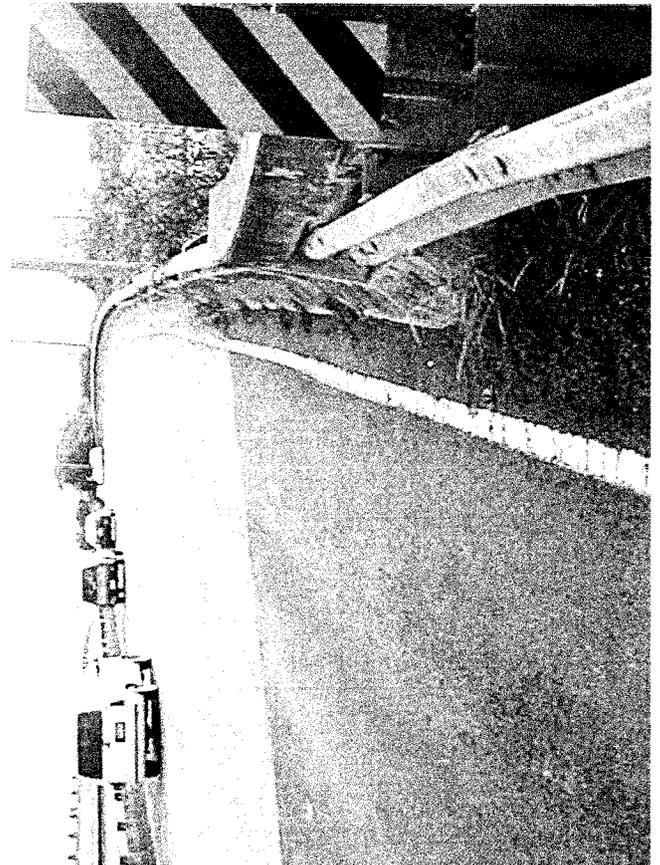
Charles Brown



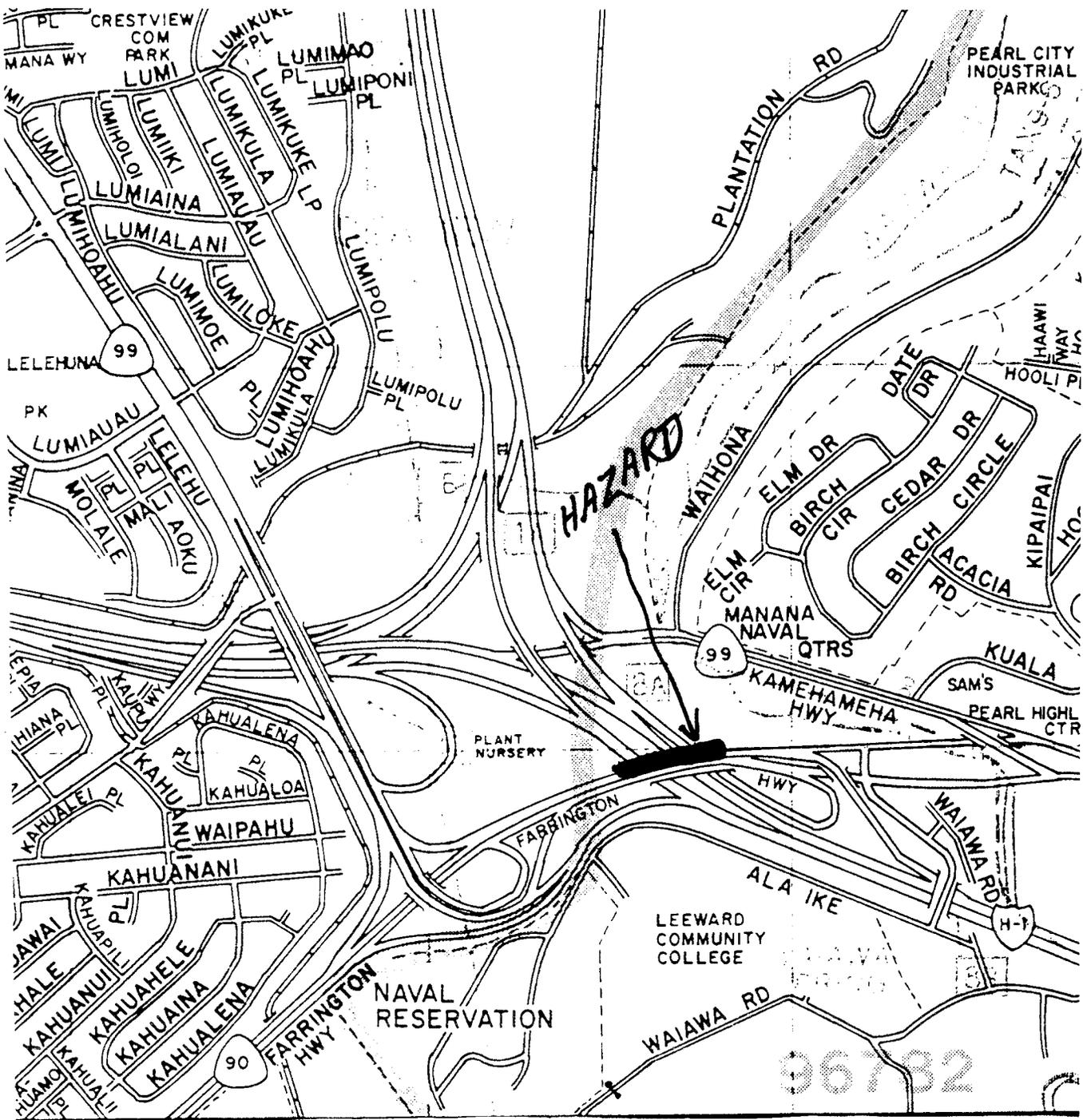
left shoulder



approach



non-shoulder



96782



**WRITTEN COMMENTS
ON THE
PRELIMINARY DRAFT PLAN**

Bike Plan
Hawaii

DEPARTMENT OF FACILITY MAINTENANCE
CITY AND COUNTY OF HONOLULU

1000 Uluohia Street, Kapolei, Hawaii 96707
Phone: (808) 692-5054 • Fax: (808) 692-5857

JEREMY HARRIS
MAYOR



LARRY J. LEOPARDI
DIRECTOR AND CHIEF ENGINEER

ALVIN K.C. AU
DEPUTY DIRECTOR

IN REPLY REFER TO:

PRO 03-002

January 16, 2003

Mr. Vincent Llorin
Bicycle and Pedestrian Coordinator
Hawaii Department of Transportation
601 Kamokila Boulevard, Room 602
Kapolei, Hawaii 96707

Dear Mr. Llorin:

Subject: Update of Bike Plan Hawaii

The Department of Facility Maintenance does not have any comments at this time.

If you have any questions, please call Laverne Higa at 692-5111.

Very truly yours,

A handwritten signature in cursive script, reading "Larry J. Leopardi".

Larry J. Leopardi
Director and Chief Engineer

LJL:lh

TRAFFIC BRANCH
HIGHWAYS DIVISION
DEPT OF TRANSPORTATION

2003 FEB -7 A 9:01

RECEIVED

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF STATE PARKS
P.O. BOX 621
HONOLULU, HAWAII 96809

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

ERNEST Y.W. LAU
DEPUTY TO THE CHAIRPERSON

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE
MANAGEMENT
CONSERVATION AND RESOURCES
ENFORCEMENT
CONVEYANCES
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE
COMMISSION
LAND
STATE PARKS

January 30, 2003

Mr. Vincent Llorin
Bicycle and Pedestrian Coordinator
Hawai'i Department of Transportation
601 Kamokila Boulevard, Room 602
Kapolei, Hawai'i 96707

Dear Mr. Llorin:

Re: Bike Plan Hawai'i Update

Thank you for the opportunity to review and comment on the subject document. We support the State of Hawai'i Master Plan for Biking and its purpose to integrate bicycling into the State's transportation system.

Please call Lauren Tanaka, State Parks Planner at 7-0293 should you have questions.

Very truly yours,

Daniel S. Quinn, Administrator

BRYAN BAPTISTE
MAYOR



COUNTY ENGINEER
TELEPHONE 241-6600

GARY HEU
ADMINISTRATIVE ASSISTANT

IAN K. COSTA
DEPUTY COUNTY ENGINEER
TELEPHONE 241-6640

AN EQUAL OPPORTUNITY EMPLOYER
COUNTY OF KAUA'I
DEPARTMENT OF PUBLIC WORKS
4444 RICE STREET
MO'IKEHA BUILDING, SUITE 275
LIHU'E, KAUA'I, HAWAII 96766

2/3/03

Vincent Llorin
Bicycle and Pedestrian Coordinator
Hawaii Department of Transportation
601 Kamakila Boulevard, Room 602
Kapolei, Hawaii 96707

RE: Update of Bike Plan Hawaii

Thank you for the opportunity to review the subject plan. Overall it is an excellent plan update. The only correction I have to offer is for Page 5-2, that the Health Heritage Trail extends from Anahola to Lihue.

Should you require additional information, please call me at 241-6650.

Sincerely,

Douglas Haigh
Chief, Building Division

cc: DCE

RECEIVED
2003 FEB -7 A 9:00
TRAFFIC BRANCH
HIGHWAYS DIVISION
DEPT OF TRANSPORTATION

VL

HWY-TO
2.0258

MAY 1 5 2003

Mr. Douglas Haigh, Chief
Building Division
Department of Public Works
County of Kauai
4444 Rice Street, Suite 275
Lihue, Kauai, Hawaii 96766

Dear Mr. Haigh:

Subject: Update of *Bike Plan Hawaii*

Thank you for reviewing the Preliminary Draft of *Bike Plan Hawaii*.

We appreciate your favorable assessment of the plan, and have corrected the description of the Health Heritage Trail.

Please note that the Draft Plan will be distributed for public review in May, and we will be sending you a copy at that time.

If you have any questions, please contact Vincent Llorin, Bicycle and Pedestrian Coordinator, at (808) 692-7675.

Very truly yours,



for
GLENN M. YASUI.
Administrator
Highways Division

VL:ss

perspective does not have to be financially constrained. In other words you don't have to show how the plan can be implemented WITHIN reasonably available funds. Some states voluntarily choose to constrain the plans to reasonably available funding to make the plan more realistic and implementable. This new plan still rings of a dream plan without funding, but I know that having everyone's project in it makes it more appealing to more people. I guess I would opt for being more realistic by recognizing and estimating limited funding, and prioritizing projects to fit that funding. But that is just an opinion since the fed rules don't require the statewide plan (and its elements such as the bike plan) to be financially constrained.

So there you have my comments for now. If I get any comments from others in the office by your deadline, I will forward them to you. Thanks. Jon

5. Page 1-4 under Hawaii State Transportation Plan, second sentence - refers to the "theme" of Mobility and Accessibility. Just to be consistent, don't introduce that new term, Mobility and Accessibility is a GOAL, Goal 1.
6. Page 2-6 last sentence - "In limited cases...these dimensions are not met." Does HDOT go along with making this statement? The bike route will not meet AASHTO policies if this is allowed.
7. Page 5-7 second paragraph, "Unfortunately, sidepaths are...in lieu of..." This wording implies it is undesirable or bad to do so. Is this what HDOT really intends to say?
8. Section 7.3.1 "If a loop detector..." - Are we placing loop detectors specifically for bike lanes or did the bike lane just happen to coincide with the existing loop detector?
9. Page 7-19 Figure 7-6 - perhaps the max slope (2%) of the pavement cross slope should be indicated.
10. Page 8-4 Section 8.4.3 - perhaps should indicate what HI got for STP in most recent year. Do same for CMAQ in Section 8.4.6.
11. Page 8-4 Section 8.4.4 Hazard Elimination Safety Program, second to last sentence - it assumes that bicycle improvements are enhancements, but an improvement could be a hazard elimination if accidents are occurring in a certain location.
12. Page 8-5 Section 8.4.7 first sentence - replace "flexible FHWA funds, 10% is specifically earmarked" with "STP funds, 10% is set-aside" because only the STP category is subject to the 10% set-aside. An earmark is another fiscal term relating to Congress "earmarking" funds for specific individual projects. Also, the TE funds are closer to \$3M, not \$4M if the STP bucket is closer to \$30M. In next paragraph, replace "eligible TE's" with "eligible TE activities" or "eligible for TE funding".
13. Page 8-6 first paragraph - Is \$51.3M the total of the set-aside for all those years, or is it funds that were obligated, or something else? Clarify what the amount pertains to.
14. Page 8-9 third paragraph - note that refuge roads are eligible under this funding source, 23 USC Section 204.
15. Page 8-11 top sentence - remove "[.]"
16. App B first page, assumptions at bottom - cannot ignore stream crossings, retaining or fill conditions, and cannot ignore Engineering, ROW, Legal, etc in the cost estimates. These costs can be significant and affect the priority ranking of a project.
17. App E - What is the basis of the cost estimates? Many of the projects have estimates that are too low, which may cause false expectations from the public and politicians when projects are implemented for much higher costs. Also, need to consider ROW cost which can raise the cost and possibly affect the priority ranking. \$100 accuracy in a plan is too fine, not appropriate. Go to something grosser.
18. App E Big Island listing, page 1 of 8 - Project 10 for Mohouli Street is likely substantially low because ROW is probable and will drive cost way up, and affect priority ranking possibly. There are blanks for Proj 12b for Nowelo Street that should be filled in.

Vince, as I said, these are from Richelle. If there are questions on these comments, I can take a stab at it, but you or the consultant might have to ask Richelle.

Thanks again for the opportunity to comment! Jon

MAY 1 5 2003

Mr. Abraham Y. Wong
Division Administrator
Federal Highway Administration
U.S. Department of Transportation
Box 50206
Honolulu, Hawaii 96850

Attention: Mr. Jonathan Young
Ms. Richelle Suzuki

Dear Mr. Wong:

Subject: Update of *Bike Plan Hawaii*

Thank you for reviewing the Preliminary Draft of *Bike Plan Hawaii*. Your comments helped us to rethink what we wanted to accomplish in the plan and to address its shortcomings. I am writing to let you know what actions were taken with respect to your concerns and suggestions.

Comments from Jonathan Young by e-mail dated February 3, 2003:

1. *The intro to Chapter 5 comes off as a summary of existing conditions based on research into existing plan documents, input, knowledge, etc. If these are really the **proposed** objectives for each island, the intro really must be a lot stronger to get that point across and make a lasting impression.*

We added a paragraph to the introductory material in Chapter 5 to reinforce the rather remarkable finding that community plans and land-use related policies at all levels of government in Hawaii are supportive of alternative modes of transportation in general, and bicycling in particular. Many of these documents specifically link improvement in quality of life with residents' ability to have meaningful transportation choices. We agree that this is an important point and one that should be conveyed more compellingly.

2. *Section 8.4.5 re. the Safe Communities Program seems to be out of place to me. The reason it seems out of place is that it is a small NHTSA program in the midst of all of the larger FHWA programs being discussed. I would move it outside the FHWA discussion. Also, it is a program for determining solutions, more of a study or planning effort, while the FHWA ones are mainly for implementation/ construction of projects.*

MAY 15 2003

In light of the incongruities you pointed out, we moved the discussion on the Safe Communities Program. It now comes after Recreational Trails Fund (the last of the FHWA funding programs) and before Federal—Non-Transportation Funds.

3. *Section 8.4.7 implies that 10% of CMAQ fund goes to the TE program. This is not true. 10% of STP only must go to TE projects. Also, there is **not** an **annual** Spring call for TE projects.*

The text has been clarified so that TE funding is associated with STP and not CMAQ funds. Further, the document states that a call for TE projects is issued *periodically*.

4. *Bike Plan Hawaii is part of the statewide transportation plan, which from the fed perspective does not have to be financially constrained. In other words, you don't have to show how the plan can be implemented **within** reasonably available funds. Some states voluntarily choose to constrain the plans to reasonably available funding to make the plan more realistic and implementable. This new plan still rings of a dream plan without funding, but I know that having everyone's project in it makes it more appealing to more people. I guess I would opt for being more realistic by recognizing and estimating limited funding and prioritizing project to fit that funding. But that is just an opinion, since the fed rules don't require the statewide plan (and its elements such as the bike plan) to be financially constrained.*

There was considerable discussion about whether to prepare a plan that is financially constrained. Ultimately, a majority of users favored a plan that would show the "big picture" or what we're working toward. The scale of this endeavor clearly exceeds the life of this plan. Even bicycle advocacy groups are aware that desired projects outnumber funding dollars; hence they have scrutinized the near-term projects to make sure those projects indeed merit top priority. Funding constraints will impose discipline on the project list through the STIP/TIP process.

Comments from Richelle Suzuki by e-mail dated February 13, 2003:

- 1-15. All copyediting suggestions that corrected errors or improved the clarity of the text were incorporated. We appreciate the careful reading given to the document.
16. *Appendix B first page, assumptions at bottom – cannot ignore stream crossings, retaining or fill conditions, and cannot ignore Engineering, ROW, Legal, etc. in the cost estimates. These costs can be significant and affect the priority ranking of a project.*

Ideally, all relevant cost items would be considered in developing cost estimates; however, with more than 400 proposed facilities, such an undertaking would overwhelm the planning process. More in-depth engineering analysis is needed to calculate earthwork costs or to determine ROW acquisition needs. Because such project-specific analysis cannot be conducted at this stage, we explicitly state that the cost estimates are for conceptual-level planning.

MAY 15 2003

The evaluation process used to determine priority rankings considered costs, but also recognized other important factors, such as user needs and preferences, system connectivity and linkages, and safety. Therefore, while higher actual costs may affect how quickly projects are brought on line—the rate at which projects are implemented—we believe the priority levels of the projects themselves are well-founded.

17. *Appendix E – What is the basis of the cost estimates? Many of the projects have estimates that are too low, which may cause false expectations from the public and politicians when projects are implemented for much higher costs. Also, need to consider ROW cost which can raise the cost and possibly affect the priority ranking. \$100 accuracy in a plan is too fine, not appropriate. Go to something grosser.*

Some of the estimates may be considered too low because the estimates may not have taken into account the cost of right-of-way acquisition which is beyond the scope for this statewide planning document. The estimates are pre-scoping estimates that need to be fine-tuned when the project is scoped. While some project estimates are likely to be too low, we should also note that others are probably higher than they need to be. All projects were assumed to be constructed as independent projects, but we know that it is far more economical to piggyback bicycle facilities on roadway projects, whether it is new construction or resurfacing and repair. Over time many bicycle facilities will probably be built this way and, under these conditions, the bicycle facility itself would not have to bear the full cost of design and construction.

Because of the many project-specific contingencies, we adopted a standardized approach to cost estimation. What it offers are the benefits of transparency and equal treatment of the proposals.

We did adopt the recommendation to loosen the cost estimates and now show all dollar values rounded to the nearest thousand.

18. *Appendix E – Big Island listing, page 1 of 8 – Project 10 for Mohouli Street is likely substantially low because ROW is probable and will drive cost way up, and affect priority ranking possibly. There are blanks for Project 12b for Nowelo Street that should be filled in.*

Mohouli Street presents a situation where information is readily available about conditions in the project environment. The same cannot be said for all proposals. To include anticipated special costs for some projects, and not have comparable costs for all others, may penalize certain projects. In the case of Nowelo Street, additional information will be provided as we receive specifics on the proposed alignment.

Mr. Abraham Y. Wong

HWY-TO 2.0259

Page 4

MAY 15 2003

Please note that the Draft Plan will be distributed for public review in May and we will be sending you a copy at that time.

Very truly yours,


GLENN M. YASUI
Administrator
Highways Division

VL:ss



NA ALA HELE
Hawaii Trail & Access System

February 5, 2003

Vincent Llorin
Bicycle and Pedestrian Coordinator
Hawaii Department of Transportation
601 Kamokila Boulevard, Room 602
Kapolei, Hawaii 96707

Dear Mr. Llorin:

Thank you for your team's hard work and dedication. The effort put in to creating the Bike Plan Hawaii, Master Plan was well worth the effort. Good job!

Please notify our office if any State Lands within the Maui DOFAW jurisdiction are in any way affected by your plans.

If you have any further questions, you may contact me at (808) 873-3508.

Sincerely,

Torrie Haurez
Na Ala Hele Trails and Access Specialist

TRAFFIC BRANCH
HIGHWAYS DIVISION
DEPT OF TRANSPORTATION

2003 FEB -7 A 9:09

RECEIVED

February 11, 2003

Mr. Vincent Llorin
Bicycle and Pedestrian Coordinator
Hawaii Department of Transportation
601 Kamokila Boulevard, Room 602
Kapolei, Hawaii 96707

Dear Mr. Llorin:

OMPO Comments to Preliminary Draft of *Bike Plan Hawaii*

OMPO has reviewed the January 2003 Preliminary Draft of *Bike Plan Hawaii* and have the following comments:

General Comments

- The text and concepts are well written and easy to understand.
- The organization of the document is a bit awkward. Suggestions:
 - An executive summary and a conclusion chapter would be helpful to open and close the document.
 - The goals and objectives might have more of an impact if put in the first chapter rather than in chapter 4.
 - Is there a timeframe for implementation of the plan (besides the three priority levels for each project) that is being targeted? If so, perhaps it could be stated in the first chapter along with the goals and objectives.
 - The project listing (along with criteria/selection methodology) is the “plan” portion of the document and could be put upfront (before the background information) rather than in the back of the document.
- The figures and pictures are very helpful to visualize the subject matter and put it into its proper perspective. Note that a few of the pictures are blurry and might be distracting to the reader (Pages 2-2, 4-5, 5-14, and 5-10).

- The island maps are clear and easy to read.

Specific Comments

Page viii

STIP - State Statewide Transportation Improvement Program

Figure 1-1

Should "Country Transit Planning" be "County Transit Planning"?

Figure 1-2

On the Round 1 graphic, there is a "2" missing on one of the islands.

Table 8-2

It would be helpful to have a "total" row at the bottom to see how much Transportation Enhancement funding has been spent since 1995.

Section 1.5

- What is the difference between a workshop and a meeting? The two terms seem to be used interchangeably and is a bit confusing.
- How will HDOT respond to comments? How will people know that their comments have been received and considered?

Section 8.3 Public Involvement

- How are the needs to Title VI/Environmental Justice populations addressed? What public involvement methods were used to ensure that low-income and poverty populations were able to comment. The response to questions #15 and #17 of the telephone survey could be used for a Title VI/Environmental Justice analysis.

Text Suggestions (Paragraphs 2 and 3):

"The Statewide Transportation Improvement Program (STIP) is the official document required for approval of federal funds in surface transportation projects. It is a three-year programming document that identifies and establishes the implementation priority for state and county transportation projects to be funded in part with federal highway or transit funds. As the state's only metropolitan region, the City and County of Honolulu works through a metropolitan planning organization (the Oahu Metropolitan Planning Organization or OMPO) which oversees preparation of the TIP Oahu Transportation Improvement Program (TIP). When approved by the OMPO Policy Committee or (the decision-making body of OMPO) and the Governor, the entire Oahu TIP is incorporated, without modification, as the Oahu element of the STIP. The other three counties go through a similar, but less rigorous, process led by

HDOT. The outcomes of their deliberations are incorporated directly into the STIP-as well. Projects in the STIP must be consistent with each county's respective long-range transportation plan. The STIP is updated at least every two years and may be amended as necessary. The ~~STIP/TIP~~ STIP and Oahu TIP are closely related to the State's and counties' capital improvement programs.

Public input can be made in the development of the regional transportation plans and in development of the ~~STIP/TIP~~ STIP and Oahu TIP. Public comments may be solicited at scheduled meetings of the OMPO Citizen Advisory Committee or other forums. Interested parties also have an opportunity to comment on the Review Draft and significant revisions prior to approval of the final documents."

8.4.7 Transportation Enhancement

- In the fourth paragraph, it is stated that HDOT issues a request for proposals in the Spring. If this is not done, perhaps this statement should be deleted.

Text suggestions (Paragraphs 5 and 6):

"In order to be eligible for funding, a project must meet certain requirements, including (bullet #4):

On Oahu, proposed TE projects are prioritized using OMPO procedures. The list of prioritized projects must be approved by the OMPO Policy Committee before being submitted to HDOT. ~~they are prioritized using OMPO procedures.~~ On the neighbor islands, proposed TE projects are prioritized using procedures adopted by the respective Countywide Transportation Planning Process (CTPP) Policy Committee.

Ultimately, the HDOT Director prepares and updates the statewide prioritized list of proposed TE projects. All TE proposals prioritized under adopted OMPO and CTPP procedures ~~are eligible~~ can be considered for federal funding. In order to receive federal funds, these projects must be programmed into the current Oahu TIP and/or STIP. ~~included on the statewide prioritized list (i.e., the TIP/STIP).~~ In the development of the Oahu TIP and STIP, OMPO and CTPP priorities are followed to the maximum extent practical. However, the Director may deviate and give higher priorities to projects required by FHWA, State initiatives, unique projects with time constraints, and/or multi-agency projects with strong community support."

Page 9-2

The OMPO Guide to Public Involvement can be found at the following website:
www.OahuMPO.org/GPI/gpi.html.

Appendices C and D

There is no legend for the letters "S", "C", and "P" (in the *Jurisdiction* column) for the tables in these appendices.

Mr. Vincent Llorin
February 11, 2003

Page 4

If you have any questions regarding these comments, please contact Michelle Kurisu at 587-2015 or mkurisuompo@hawaii.rr.com.

Sincerely,



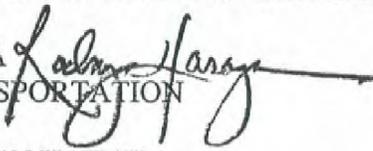
Gordon G.W. Lum
Executive Director

YL

HWY-TO
2.0257

MAY 15 2003

TO: GORDON G. W. LUM
EXECUTIVE DIRECTOR
OAHU METROPOLITAN PLANNING ORGANIZATION

FROM: RODNEY K. HARAGA 
DIRECTOR OF TRANSPORTATION

SUBJECT: UPDATE OF *BIKE PLAN HAWAII*

Thank you for reviewing the Preliminary Draft of *Bike Plan Hawaii*. Your comments helped us to rethink what we wanted to accomplish in the plan and to address its shortcomings. I am writing to let you know what actions were taken with respect to your concerns and suggestions.

General Comments:

1. *Organization of the Document*

1.a *An executive summary and a conclusion chapter would be helpful to open and close the document.*

After the bike plan has been finalized, we will prepare an executive summary as a stand-alone document. This approach was also used in the 1994 bike plan update and we have found that a separate document gives us greater flexibility. As an attachment to the primary document, it provides a succinct overview (satisfying the executive summary purpose), and because it is a scaled-down version of the plan, we can reproduce it more economically for wider distribution.

Bike Plan Hawaii ends with a chapter on implementation, in lieu of a conclusion chapter. We felt it appropriate to conclude by discussing how to make the plan a reality. In this chapter, therefore, we explain the responsibilities of State government versus County governments, the role of citizen advocacy in the political decision-making process, and various funding options. Are there any other topics that should be covered in a concluding chapter?

MAY 15 2003

- 1.b *The goals and objectives might have more of an impact if put in the first chapter rather than in chapter 4.*

We agree that the goals and objectives presented in Chapter 4 are one of the core elements of the plan; however, we also feel that it's important to provide a context for this material—especially for a lay audience. Therefore, we begin by explaining the purpose of the plan in Chapter 1, educating readers about key bicycling terms and concepts in Chapter 2, and providing background information about bicycling conditions in the State in Chapter 3. Thus we end up with goals and objectives in Chapter 4. Fortunately, we are no longer locked into a linear logic thanks to new media formats, such as CD-ROMs and websites. Where possible, we will be utilizing bookmarks and hyperlinks to enable readers to jump ahead to the topics of most interest to them.

- 1.c *Is there a timeframe for implementation of the plan (besides the three priority levels for each project) that is being targeted? If so, perhaps it could be stated in the first chapter along with the goals and objectives.*

The implementation timeframe is limited to proposals for facility improvements.

- 1.d *The project listing (along with criteria/selection methodology) is the "plan" portion of the document and could be put upfront (before the background information) rather than in the back of the document.*

To maintain the flow of the narrative, we attached the longer tables to the back of the document, except for near-term proposals that are listed in Chapter 6.

2. *Figures and Pictures – Note that a few of the pictures are blurry and might be distracting to the reader.*

Some photos contain strong visual images, but were available only in low-resolution formats. The final layout is able to compensate for some of the deficiencies by adjusting frame sizes and cropping.

3. *Section 1.5*

- 3.a *What is the difference between a workshop and a meeting? The two terms seem to be used interchangeably and is a bit confusing.*

“Workshop” and “meeting” refer to the same event. The meetings were designed with some type of participatory activity (the mapping exercise in the first meeting and the “voting” exercise in the second meeting); therefore, the meetings took on a workshop feel. To minimize confusion, we have standardized the terminology in the document.

- 3.b *How will HDOT respond to comments? How will people know that their comments have been received and considered?*

MAY 15 2003

We will respond in writing to all written comments, including e-mails that identify sender's name and mailing address. Our responses will indicate how we have addressed the reviewer's comments.

4. *Section 8.3 Public Involvement*

4.a *How are the needs of Title VI/Environmental Justice populations addressed? What public involvement methods were used to ensure that low-income and poverty populations were able to comment?*

We added a new text box titled "Compliance with Title VI and Environmental Justice" under Section 1.5, How was Bike Plan Hawaii Developed? In addition, we will issue a Supplemental Volume on public participation which contains comprehensive documentation of all community outreach activities. This document will be included on the CD-ROM for the Draft Plan.

Please note that the Draft Plan will be distributed for public review in May and we will be sending you a copy at that time.

Specific Comments:

All copy editing suggestions that corrected errors or improved the clarity of the text were incorporated. We appreciate the careful reading given to the document.

VL:ss ✓

**COMMENTS FROM THE MAYORAL BICYCLE AND PEDESTRIAN
ADVISORY COMMITTEE, COUNTY OF HAWAII,
MEETING HELD FEBRUARY 10, 2003**

**To: Vincent Llorin, Bicycle Pedestrian Coordinator
State of Hawaii, Department of Transportation**

From: Ron Reilly, Chair (808) 967-8603

Date: Feb 11, 2003

GENERAL COMMENTS:

The projects in the list of Big Island Projects are excellent, and should assure that Hawaii Island continues to develop bicycle-friendly transportation infrastructure.

The use of CD-ROM to share this 284 page document is unprecedented in the experience of this committee and represents excellent use of the available technology. Our congratulations and appreciation are extended to both the State DOT and to Kimura International.

The committee had some difficulty understanding what the exact scope of work might be for many of the projects e.g. "Signed Shared Road" could be vertical signage only, or this plus on street pavement stripping for bicyclists.

The committee feels that implementation of many bicycle projects would be best, and most affordably, achieved if they were done at the time of routine road resurfacing and road maintenance.

The committee has a copy of a letter from former Maui Mayor Linda Lingle, to her Public Works Director, dated July 30, 1991, in which Mayor Lingle clearly articulates and implements a Maui County policy requirement of adding 4ft shoulders wherever feasible whenever a County road is repaved. The committee applauds this policy and hopes it can become a policy for Hawaii County also.

Inclusion of additional required pavement should be mandatory wherever a street which is to be resurfaced is already identified on the existing State/County Bike Plan as a future bike facility (lane/route).

An example of good practice is the recent resurfacing of Makaala St. which for the most part has smooth extra pavement to the outside of each traffic lane (however this treatment could have been extended for the whole project length).

An example of poor practice is the recent resurfacing of Ponahawai St which has been resurfaced with only 24ft of pavement, despite being identified on the 1994 Bike Plan as requiring a future bike lane. This could have been achieved with as little as 4 ft of additional paving and stripping in a 4-10-10-4 configuration (grass and gravel verge appears to be firm, flat and unobstructed).

Committee members feel that the long, narrow, often curved bridges along the Hamakua Coast north of Hilo are a hazardous barrier to bicycle travel. We urge consideration of retrofitting these bridges with bike/pedestrian walkways (perhaps a cantilevered clip-on) for the most egregious examples. The committee is aware of the State DOT policy of including wide shoulders on bridge replacement projects (such as recently in Ka'u and on Komohana) and applauds this policy.

The following comments focus on the Hilo side, however it is hoped that additional comments will be available soon from Kona side members, and we plan to get these additional comments to you by Monday, February 17th.

The committee intends to invite Hawaii County Public Works Director, Bruce McClure, or his designee, to attend our next meeting on Monday April 14th to discuss the priority list, project funding, scope of work, and shoulder additions at the time of resurfacing.

PROJECT SPECIFIC COMMENTS

The following list of projects is copied from the CD-ROM pages 273-283 and has committee comments added in italics.

Island of Hawaii (Big Island)

Proposed Bicycle Facilities by Priority Level

MapNo. Region Facility Location, Juris.*, Cost Class.**

Signed Shared Road: Length(mi.) Cost Estimate

Bike Lane: Length(mi.) Cost Estimate

Shared Use Path: Length(mi.) Cost Estimate

Priority I Proposals

7 Hilo

Waianuenue Avenue

Signed Shared Road Akolea Rd- Bayfront Hwy C B 3.3 \$163,700

Signage is minimal help. The real need is paved designated bike lane space for bicyclists.

From Hilo Medical Center down-slope to Kaumana urgently needs a paved shoulder.

From Kaumana down-slope to Komohana a 4-lane to 3-lane conversion (two down-slope and one up-slope) would allow bicycling space and give wider traffic lanes.

From Komohana down-slope to Bay Front is a discontinuous mix of two and four traffic lanes, some sections with or without on-street parking – a consistent treatment of either two or three traffic lanes would allow room for bicycle lanes.

10 Hilo

Mohouli Street

Komohana St- Kilauea Ave C B 1.0 \$44,500

Good existing paved shoulder, good to have bike lane designation which should include "share/yield to pedestrians" signage since there are no sidewalks.

14 Hilo

Civic Center Loop-- Aupuni/ Pauahi

Kilauea Ave- Kamehameha Ave C B 0.7 \$31,100

Sufficient existing pavement, good bike lane designation, serves county facilities which need bicycle locker for employees as a demonstration project.

15 Hilo

Bayfront Highway

Waianuenue Ave- Manono St S C 1.0 \$325,500

Vertical signage is not sufficient. This is a high bicycling traffic area and should have bike lanes to provide continuity of facility type with the existing State bike lanes (Wailoa Bridge to Hwy 11) and to connect with the existing County bike lanes (Kalaniana'ole to Richardson's Beach). From the broken up look of the existing pavement it appears that a complete resurfacing may be imminent and the associated restriping might achieve the desired results at little or now extra cost.

19 Hilo

Piilani Street

Manono St- Kanoiehua Ave C B 0.4 \$19,800

Lost cost item of questionable value. As with other Hilo City street additional pavement for bicycle lane/pedestrian use is the real need.

21 Hilo

Manono Street

E. Kawili St- Bayfront Hwy C C 1.2 \$1,507,500

This is a good priority and needs additional pavement for bicycle pedestrian use for part of the project length.

It provides good extended continuity with existing bike lanes and it serves Bayfront which is a common trip destination.

22 Hilo

E. Kawili Street

Kilauea Ave- Kanoiehua Ave C B 0.5 \$22,200

A good low cost (needed pavement already exists) extension of existing bike lanes.

23 Hilo

W. Puainako Street

Komohana St- Kinoole St S C 1.4 \$1,758,800

A good priority. This street will have increased traffic volume with the up-coming opening of the Puanako Extension. Bike lanes on this street will provide good bicycling connectivity to the shoulders on both Komohana and the new Puainako extension.

28 Hilo
Volcano Highway [Mamalahoa Hwy]
Kanoielehua Ave- Keaau- Pahoa Rd S A 3.0 \$11,000

29a Hilo
Railroad Avenue
Leilani St (Hilo)- Kaaahi RD/ RR Ave end C B 4.0 \$198,400
Shoulder improvements and bike lane designation preferred over shared use signage. There are sections where existing smooth paved shoulders would allow bike lane designation without the cost of additional pavement.

29b Puna
Railroad Avenue Bikeway
Kaaahi Rd / RR Ave (end of pavement) -
Hawaiian Paradise Park Subdivision C/ P C 5.6 \$2,160,200
This project could be the most high use of any the Hilo project and therefore perhaps the most beneficial in terms of widespread community benefits. In the words of former Council man Dominic Yagong, "When we open this... people will flock to it!"

30a Puna
RR Avenue Bikeway connection to Keaau schools complex
RR Ave Bikeway- Keaau- Pahoa Bypass C C 0.5 \$192,900
This project would, for the first time in East Hawaii, provide a safe road separated bike path for children to bicycle to school from a large residential community. The health, sustainability, and community enhancing benefits of this project in combination with 29b are difficult to quantify or even imagine. As with project 29b, there needs to be an action plan and a time line in order to initiate the various steps that will be required to bring both of these two outstanding projects to reality with a minimum of delay.

32 Puna
Keeau- Pahoa Road
Keaau- Pahoa Bypass Rd- Shower Dr S C 2.4 \$781,200

58a Kona
Kuakini Highway
Mamalahoa Hwy- King Kamehameha III Rd S B 3.5 \$173,600
Signed Shared Road Bike Lane Shared Use Path

[end Page 1 of 11]

58b Kona
Kuakini Highway
King Kamehameha III Rd- Lako St S B 1.7 \$84,300

58c Kona
Kuakini Highway
Lako St- Hualalai Rd C C 2.3 \$2,889,400

60 Kona
Walua Road Pedestrian and Bicycle Scenic Route (extension)
End of Walua Rd- Old Mamalahoa Hwy C C 0.3 \$115,700

65 Kona
Alii Drive Improvements
Palani Rd- Keahou Rd C B 5.7 \$282,800

68 Kona
Queen Kaahumanu Extension
Henry St- Kuakini Hwy S A 2.5 \$9,100

70c Kona
Keanalehu Drive
Kealakehe Pkwy- Kealakehe Pathway C B 0.8 \$33,800

76b Kona
Kealakehe Parkway
Queen Kaahumanu Hwy- Keanalehu Dr C B 0.7 \$31,100

81 Kona
Off- road (2- way) path adjacent and parallel to Queen Kaahumanu Hwy
Henry St- Keahole Airport S C 6.2 \$2,391,600

83 Kona
Queen Kaahumanu Hwy
Waikoloa Rd- Kealakehe Pkwy S A 18.2 \$66,500

92a
Waimea-
Kohala
Akoni Pule Highway
Kawaihae- Mahukona Wharf Access Rd S A 12.9 \$47,100

92b
Waimea-
Kohala
Akoni Pule Highway
Mahukona Wharf Access Rd- Hawi Rd S A 6.5 \$23,700

96a- c
Waimea-
Kohala
Waimea Greenway
Various segments C/ P C 9.0 \$3,471,700
Sub- total: Priority I Proposals 65.1 \$2,186,700 8.6 \$6,318,400 21.6 \$8,332,100

Priority I Mileage Distribution
State 51.7 \$1,522,000 1.4 \$1,758,800 6.2 \$2,391,600
County 13.4 \$664,700 7.2 \$4,559,600 0.8 \$308,600
Other/ Undefined 0.0 \$0 0.0 \$0 14.6 \$5,631,900

[end Page 2 of 11]

Priority II Proposals

2 Hilo
Kilauea Avenue
Waianuenue Ave- W. Puainako St C C 2.5 \$3,140,600
This project deserves to be a Priority I project. It might be accomplished affordably, without additional pavement, by re-striping as a 4-lane to 3-lane

conversion. This would benefit bicyclists by providing designated bike lane space and also act as a traffic calming enhancement. All motor vehicles would be slowed to the speed of the prudent motorist. At present there is unnecessary right and left side overtaking in substandard width traffic lanes, with the hazard of on-coming two-lane traffic...all to get one or two places ahead in line at the next traffic light. This engineering not only excludes bicyclists (and pedestrians in the section that have no sidewalks) but encourages dangerous speed (in excess of the 35 mph limit) and pointless overtaking by impatient and aggressive motorists.

3 Hilo

Kapiolani/ Hualalai Streets

Waianuenue Ave- Hualalai St C A 1.0 \$3,700

4 Hilo

Ponahawai Street

Komohana St- Kapiolani St C C 1.0 \$1,256,300

This project should have had paved shoulders included with the recent resurfacing. The committee has a copy of a letter from former Maui Mayor Linda Lingle to her Public Works Director, July 30, 1991 in which Mayor Lingle clearly articulates and implements a Maui County policy of adding shoulders at the time of resurfacing.

5 Hilo

Kukuau Street

Komohana St- Kapiolani St C B 0.8 \$35,600

6 Hilo

Rainbow Drive

Loops off Waianuenue Ave C C 1.7 \$553,300

This project may not have much value, and the money could be better spent on paved shoulders on adjacent Waianuenue Ave.

11 Hilo

Kumukoa Street/ W. Lanikaula Street

Kukuau St- Kionoole St C B 1.7 \$75,600

12a Hilo

Komohana Street

Waianuenue Ave- Ainaola Dr C C 3.1 \$3,894,400

16 Hilo

Banyan Drive / Lihikai Street

Around Golf Course C C 1.4 \$540,000

17 Hilo

Hualani/ Operations/ Silva Streets

Kanoelehua- Kalaniana'ole Ave/ Hilo Harbor C B 1.3 \$64,500

18 Hilo

Kekuanaoa St (Airport Access)

Kanoelehua Ave- Hilo Airport C A 1.6 \$5,800

This project (listed as a Priority II shared route in 1994) rightly needs to be a bike lane project. It should be moved to a Priority I level if possible. A committee member reported observing a wheelchair user negotiating the shoulderless-no-

sidewalk area near Kilauea Avenue late at night, without lights or reflectors, traveling within the east bound traffic lane – a high risk exposure to a potentially fatal motor vehicle run-down. There is no alternative route or alternative pavement available. Kekuaaoa is a major route into Hilo from the Airport and Hwy 11 and should accommodate bicyclists, pedestrians, and wheelchair users outside of the substandard width traffic lanes.

20 Hilo
Kekuaaoa Street
Kilauea Ave- Kanoelehua Ave C C 0.9 \$1,130,600

24 Hilo
Kawailani Street
Komohana- Kinoole St C B 1.3 \$64,500

25 Hilo
Haihai Street
Ainaola Rd- Kinoole St C A 1.6 \$5,800

26 Hilo
Kinoole Street
Kawili St- Haihai St C B 2.0 \$88,500

[end Page 3 of 11]

27 Hilo
Pohaku or E. Makaala Street
Ohuohu/ Ahuna/ Awa/ Pau O Palae- RR Ave C C 3.5 \$1,139,200

29c Puna
Railroad Avenue Bikeway
Hawaiian Paradise Park Subdivision-
Hawaiian Beaches & Shores Subdivision C/ P C 6.8 \$2,623,100

30b Puna
Various local roads and off- road paths
Keaau Town C/ P C 2.0 \$771,500

31a Puna
Old Keaau- Pahoa Road
Volcano Hwy- Keaau- Pahoa Bypass S C 1.1 \$358,000

31b Puna **Old Keaau- Pahoa Road Remnant** C B 0.5 \$24,800

33 Puna
Shower Dr/ Pohaku Dr/ Olaa/ 40th
Kaaahi Road- Volcano Hwy P/ C C 5.4 \$1,757,600

34 Puna
**Paradise Acres - 9 Road / C Road /
Kulani Road**
9 Rd- Volcano Hwy near Mountain View P/ C C 5.6 \$1,822,700

36a Puna
**N. Puna Corridor - Paradise (or Makuu)
Drive**
Hawaiian Paradise Pk- Keaau- Pahoa Rd P/ C C 4.2 \$1,367,000

36b Puna
North Puna Corridor-- Mauka

Keaau- Pahoia Rd- 11 Rd P/ C C 3.7 \$1,204,300

36c Puna

North Puna Corridor-- D Road / Rose Street

9 Rd- Pikake St P/ C C 4.1 \$1,334,500

36e Puna

Paradise Acres-- Glennwood Rd

Keaau Stream Trail- Volcano Hwy near
Glennwood P/ C C 0.8 \$260,400

37a Puna

Ala Hele O Puna (going north)

Hawaiian Beaches/ Shores Subdivision-
Hawaiian Paradise Park Estates C C 6.1 \$1,985,400

37b Puna

Ala Hele O Puna (going south)

Hawaiian Beaches/ Shores Subdivision- Jct.
Pahoia- Kapoho Rd C C 5.2 \$1,692,500

[end Page 4 of 11]

38 Puna

Kahakai Blvd., mauka- makai corridor

Railroad Ave- Pahoia schools complex C C 4.0 \$1,301,900

39 Puna

Ag Road/ Kehau Road

Railroad Ave (Waiakahiula)- Nanawale Blvd
to Pahoia- Kapoho Rd C C 3.8 \$1,236,800

40 Puna

Pahoia- Kapoho Road

Volcano Hwy- Pahoia Coast C A 7.2 \$26,300

41 Puna

Lighthouse Road

Pahoia- Kapoho Rd- Kumukahi Lighthouse C C 1.6 \$520,800

44 Puna

Kapoho- Kalapana Beach Road

Pahoia- Kapoho Road- Keaau- Pahoia Rd C A 15.0 \$54,800

45 Puna **Old Kalapana Hwy Remnants** C? C 4.5 \$1,735,800

46 Puna

Pahoia- Kalapana Highway

Kapoho- Kalapana Rd- Keaau- Pahoia Rd C A 9.0 \$32,900

47 Puna

Volcano Hwy [Mamalahoia Hwy]

Keaau- Pahoia Bypass- Hawaii Volcanoes
National Park S A 23.2 \$84,700

59 Kona

Haawina Road

Kuakini Hwy- Old Mamalahoa Hwy C C 0.2 \$65,100

61 Kona

King Kamehameha III Road

Kuakini Hwy- Alii Dr C C 1.4 \$468,700

62 Kona

**Connections between subdivisions
south of Kailua**

Komohana Kai Subdivision- Kona Sea View
Subdivision C/ P C 1.2 \$377,600

66 Kona

Lunapule Road

Alii Dr- Walua Rd C C 0.3 \$81,400

67 Kona

Hualalai Road

Old Mamalahoa Hwy- Kuakini Hwy C C 3.8 \$1,230,300

69 Kona

Old Mamalahoa Hwy

Jct. Palani Rd- Honalo C A 10.5 \$38,400

[end Page 5 of 11]

72 Kona

Makala Street

Kuakini Hwy (Old Kona Airport)- Queen
Kaahumanu Hwy C C 0.5 \$172,500

73 Kona

Old Airport Coastal Path

Old Kona Arprt- Noio Pt/ Honokohau Harbor C/ P C 2.3 \$887,200

74 Kona

Utility Easement Road

Wastewater Treatment Plant- Honokohau
Harbor C C 2.2 \$852,500

85a Kona

Mamalahoa Hwy

Queen Kaahumanu Hwy- Palani Jct. S C 3.4 \$1,106,600

85b

Waimea-

Kohala

Mamalahoa Hwy

Palani Jct.- Waimea- Kohala Airport S A 33.3 \$121,600

86

Waimea-

Kohala

Old Mamalahoa Hwy Remnants

South of Waimea S? C 2.4 \$1,851,600

88

Waimea-

Kohala

Waikoloa Road

Waikoloa Village- Queen Kaahumanu Hwy C B 11.6 \$575,500

89

Waimea-

Kohala

Waikoloa Bikeway

Paniolo Ave C B 1.7 \$82,400

93

Waimea-
Kohala

Akoni Pule Highway

Hawi- Halaula S B 7.9 \$391,900

94

Waimea-
Kohala

Kohala Mountain Road

Waimea- Hawi S B 19.3 \$957,500

95a

Waimea-
Kohala

Old Kawaihae Rd (north of Kawaihae Rd)

Akoni Pule Hwy- Powerline Rd C C 3.1 \$1,184,200

95b

Waimea-
Kohala

Old Kawaihae Rd (south of Kawaihae Rd)

Powerline Rd- Waimea Greenway C C 5.1 \$1,948,000

98a

Waimea-
Kohala

Kawaihae Road

Akoni Pule Highway- Laelae Rd (Mile 58) S A 9.0 \$32,900

98b

Waimea-
Kohala

Kawaihae Road

Laelae Rd (Mile 58)- Kekehau/ Kipu Upuu S B 5.6 \$277,800

[end Page 6 of 11]

99

Waimea-
Kohala

Waiaka Bridge

Jct. Kohala Mountain Rd & Kawaihae Rd S C 0.0 \$0

100

Waimea-
Kohala

Mamalahoa Hwy

Waimea Town, Jct. Kawaihae Rd- Waimea-
Kohala Airport S C 1.7 \$556,600

102

Waimea-
Kohala

Mud Lane

Past Kamuela Lakeland; Mamalahoa Hwy-
Waipio Valley C/ P C 5.8 \$2,218,000

103 Honokaa

Honokaa- Waipio Rd

Honokaa- Waipio S A 9.5 \$34,700

106a Honokaa

Old Mamalahoa Hwy

Lakeland- Mamalahoa Hwy S? C 10.2 \$3,306,900

106b Honokaa

Kupuna Road, Old Mamalahoa Hwy-

Mamalahoa Hwy C C 1.4 \$547,800

Sub- total: Priority II Proposals 256.3 \$30,946,800 12.0 \$9,621,600 36.9 \$15,159,700

Priority II Mileage Distribution

State 114.0 \$3,922,300 0.0 \$0 0.0 \$0

County 107.2 \$15,593,500 12.0 \$9,621,600 13.2 \$5,072,500

Other/ Undefined 35.1 \$11,431,000 0.0 \$0 23.8 \$10,087,200

Priority III Proposals

1 Hilo

Mamalahoa Hwy

Honokaa- Hilo S A 39.0 \$142,400

8 Hilo

Akolea Road

Kaumana Dr- Waianuenue Ave C A 1.9 \$6,900

9a Hilo

Kaumana Drive

Waianuenue Ave- Akolea Rd C C 3.7 \$1,204,300

9b Hilo

Kaumana Drive

Saddle Rd- Akolea Rd C A 0.4 \$1,500

13 Hilo

Ainaola Road

Haihai St- Kawaihani St C B 1.0 \$44,500

[end Page 7 of 11]

29d Puna

Railroad Avenue Bikeway

Hawaiian Beaches & Shores Subdivision-

Kapoho- Kalapana Beach Rd C/ P C 6.5 \$2,507,300

35 Puna

Old Volcano Trail

Keaau Stream Trail- Pohaku? C/ P C 6.4 \$2,468,800

36d Puna

North Puna Corridor - Kahikopele St /

Keaau Stream Trail

Pikake St P/ C C 4.6 \$1,774,400

37c Puna

Koae Access

Railroad Path/ Kaaahi Rd- Ala Hele O Puna C C 0.8 \$308,600

42 Puna

Pahoa- Kapoho Powerline Trail

Pahoa- Kapoho Rd- Pahoa- Kalapana Rd C/ P C 2.8 \$1,080,100

43 Puna
Kapoho- Kalpana Ridge Trail
Off Pahoa- Kapoho Rd- Kamoamoa Hmstds C/ P C 8.1 \$3,124,500

48
South
Hawaii
Mamalahoa Hwy
Hawaii Volc. Natl Park- Jct. Kuakini Hwy
(Kona) S A 86.7 \$316,600

49
South
Hawaii
South Point Road
Hawaii Belt Rd- Ka Lae (South Point) C C 11.7 \$3,808,100

50
South
Hawaii
Kamaoa Road
South Point Rd- Mamalahoa Hwy C C 4.0 \$1,301,900

51 Kona
Keala O Keawe
Mamalahoa Hwy- Puuhonua Rd C? C 4.0 \$1,285,700

52 Kona
Puuhonua Road
Middle Keel Rd- Honaunau Bay C C 3.4 \$1,100,100

53 Kona
Painted Church Road
Keala O Keawe- Middle Keel Rd C C 1.8 \$589,100

54 Kona
Middle Keel Road
Mamalahoa Hwy- Puuhonua Rd C C 3.6 \$1,181,500

55 Kona
Napoopoo Road
Mamalahoa Hwy- Middle Keel Rd C C 2.6 \$839,700

56 Kona
Alii Drive Extension
Lekeleke Bay- Kealakekua Bay C C 5.3 \$2,044,400

[end Page 8 of 11]

57a Kona
Old RR ROW- makai of Kuakini Hwy
Kuakini Hwy- terminus C C 6.0 \$2,310,600

57b Kona
Old RR ROW- mauka of Kuakini Hwy
Hualalai Rd- Kuakini Hwy C C 2.7 \$1,041,500

70a Kona
Keanalehu Trail
Palani Road- Hualalai Rd C C 2.6 \$1,018,400

76a Kona
Kealakehe Parkway
Queen Kaahumanu Hwy- Noio Point C C 1.1 \$358,000

77 Kona
**Old government road mauka of
Mamalahoa Hwy** C C 4.3 \$1,643,300

79 Kona
Hina Lani Drive
Queen K. Hwy- Old Mamalahoa Hwy C A 3.5 \$12,800

80 Kona
Old Airport Coastal Path
Honokohau Harbor- U. H. Research Lab
(OTEC) C C 6.3 \$2,430,200

82 Kona
**Utility corridor at 1500' elevation mauka
of Queen Kaahumanu Hwy** C C 2.5 \$964,400

87
Waimea-
Kohala
Saddle Road
Mamalahoa Hwy- Hilo S A 45.7 \$167,000

90
Waimea-
Kohala
Powerline Road
Old Kawaihae Rd- Waikoloa Rd C/ P C 7.4 \$2,866,100

91
Waimea-
Kohala
Old Puako Rd and Puako Beach Drive
Hapuna Beach Rd- Holoholokai Beach Pk C/ P C 9.0 \$3,456,300

104a
Honokaa-
Hamakua
Lower Cane Haul Road
Waipio- Honokaa C/ P C 8.0 \$3,074,400

104b
Honokaa-
Hamakua
Lower Cane Haul Road
Honokaa- Homula C/ P C 7.9 \$3,055,100

105
Honokaa-
Hamakua
**Coastal Connector Rd (Standard Oil
Road)**
Haina- Honokaa- Waipio C/ P C 1.9 \$618,400

106c
Honokaa-
Hamakua
Old Mamalahoa Hwy

Paauhau Road- Kalopa Gulch S? C 2.9 \$1,114,800

[end Page 9 of 11]

106d

Honokaa-
Hamakua

Old Mamalahoa Hwy

Puuula Ranch- Waipuahina Gulch S? C 2.4 \$925,800

106e

Honokaa-
Hamakua

Old Mamalahoa Hwy

Waipuahina Gulch- Paauilo S? C 0.8 \$308,600

106f

Honokaa-
Hamakua

Old Mamalahoa Hwy

Waikaumalo- Hakalau Bay S? C 4.2 \$1,620,100

106g

Honokaa-
Hamakua

Old Mamalahoa Hwy

Hakalau Bay- Kolekole Beach Park S? C 2.3 \$887,200

106h

Honokaa-
Hamakua

Old Mamalahoa Hwy

Honomu- Pepekeo S? C 3.0 \$1,157,200

106i

Honokaa-
Hamakua

Old Mamalahoa Hwy

Pepeekeo- Onomea S? C 6.8 \$2,623,100

106j

Honokaa-
Hamakua

Old Mamalahoa Hwy

Papaikou- Paukaa, Kulana Kea Dr S? C 2.6 \$1,002,900

106k

Honokaa-
Hamakua

Wainaku

Wainaku- Puueo (Hilo Town) C C 2.2 \$848,600

Sub- total: Priority III Proposals 215.0 \$12,934,000 1.0 \$44,500 118.4 \$45,656,700

Priority III Mileage Distribution

State 171.4 \$626,000 0.0 \$0 0.0 \$0

County 37.7 \$10,403,900 1.0 \$44,500 32.7 \$12,610,000

Other/ Undefined 5.9 \$1,904,100 0.0 \$0 85.7 \$33,046,700

Contingent on New Road Construction

12b Hilo

Nowelo

Komohana- UH Hilo Expansion Area C/ S? C

64 Kona
Proposed Kahului- Keauhou Pkwy
Queen Kaahumanu Hwy- Lako Street C C 3.1 \$1,009,000 3.1 \$1,195,800

70b Kona
Keanalehu Drive
Kealakehe Pathway- Palani Road C C 0.6 \$778,900

71 Kona
Future Keohokalole Hwy
Kealakehe Pkwy- Queen Kaahumanu Hwy C C 2.2 \$2,763,800

[end Page 10 of 11]

75 Kona
Kealakaa Connector
Kealakehe Pathway- Kealakaa Street C C 0.6 \$766,300

76c Kona
Kealakehe Pkwy extension
Kanalehu Drive- Kealakaa Street C C 1.3 \$1,633,100

76d Kona
Kealakehe Pkwy extension
Kealakaa- Palani Road C C 0.7 \$879,400

78 Kona
Future Kealakaa Street
Kealakehe Parkway- Kealakehe Parkway C C 4.0 \$5,025,000

97 Kohala
Future Waimea Bypass
Akoni Pule Highway- Mamalahoa Hwy S C 18.3 \$5,956,300

101 Waimea **Future Waimea Hwy Bypass-- Path** S C 3.9 \$1,504,400

Sub- total: Contingent Proposals 18.3 \$5,956,300 12.5 \$12,855,500 7.0 \$2,700,200
Contingent Mileage Distributio n
State 18.3 \$5,956,300 0.0 \$0 3.9 \$1,504,400
Count y 0.0 \$0 12.5 \$12,855,500 3.1 \$1,195,800
Other/ Undefined 0.0 \$0 0.0 \$0 0.0 \$0

HAWAII TOTAL: ALL PROPOSAL S 554.7 \$52,023,800 34.1 \$28,840,000 183.9 \$71,848,700

Hawaii Mileage Distribution
State 355.5 \$12,026,600 1.4 \$1,758,800 10.1 \$3,896,000
Count y 158.3 \$26,662,100 32.7 \$27,081,200 49.7 \$19,186,900
Other/ Undefined 41.0 \$13,335,100 0.0 \$0 124.0 \$48,765,800

* Juris. (Jurisdiction)

S = State

C = County

F = Federal

P = Private

** Cost Class. (Cost Classification)

A = Minor improvements

B = Moderate improvements

C = Major improvements/ new facility

[end Page 11 of 11]

notice of the dates as you can - we want to get as good a public turn out as possible.

Best Regards, Ron

ps. Had a great bike ride today up to Wood Valley in Ka'u!

belong on Hawaii's roadways. The basis for the bikeway system is the existing roadway system. The bicycle is a viable mode of transportation.

As to infrastructure comments, I would like to see a couple of Priority 2 projects upgraded. I thought some of the projects could be downgraded, but since we don't see any value in doing that I'll keep quiet. Mostly I agree with what you've written. Other comments follow (my comments are in red; hope you can read them.)

12a Hilo

Komohana Street

Waianuenue Ave- Ainaola Dr C C 3.1 \$3,894,400

>From Waianuenue to Puainako: ok for cycling as is. Road has broad shoulders. >From Puainako to Ainaloa Dr.: Very bad road for cycling with hazardous shoulders and high-speed (45 mph+) traffic. Deserves to be a route from Waiakea Uka into town.

24 Hilo

Kawailani Street

Komohana- Kinoole St C B 1.3 \$64,500

A poor street for cycling. High speed traffic and no shoulders. Either Kawailani or Haihai St. should be improved as a route for Waiakea Uka folks into town.

25 Hilo

Haihai Street

Ainaola Rd- Kinoole St C A 1.6 \$5,800

A poor street for cycling. High speed traffic and no shoulders. Either Kawailani or Haihai St. should be improved as a route for Waiakea Uka folks into town.

Thanks for reviewing all these documents and submitting comments.

Yours

JB

J. B. Friday

1416 Kilikina St.

Hilo, HI 96720

tel. (808) 935-2331

e-mail jbfriday@hawaii.edu

To keep every cog and wheel is the first precaution of intelligent tinkering.

- Aldo Leopold, on conservation.

February 13, 2002

MEMO

TO: Ron Reilly, Chairman
Hawaii County Bicycle Advisory Committee

FROM: Mary Osborne, member
Hawaii County Bicycle Advisory Committee

RE: Your request for comments on the Bike Plan Hawaii Preliminary Draft,
January 2003, Proposed Bicycle Facilities Priority Level I, Kona.

CC: Pamela Mizuno, Deputy Director

I will be out of town and unavailable on Friday, February 14th. My attempt to contact you by phone and email to request you call me has not been answered so I'm taking the liberty of responding to your request in writing via email. I hope this isn't out of protocol.

Priority Number I

Map Nos., 58a, 58b, 58c, 60, 65, 68, 70c, 76b, 83: Concur.

Map No. 81: Oppose. Opposed for any priority level as counter to the purpose to provide safe shared use paths. Documentation exists on the dangerous conditions to both cyclists and pedestrians fostered by these paths when they are intersected by other roads as will be the case with this proposed path. This multi-million dollar expense, the largest by far of the Priority No. I Kona projects, to place a parallel path next to the existing highway that is currently used by cyclists when that highway can be improved into a signed shared road or bike lane cannot, in my opinion, be justified. Encouraging an intersected shared use path discourages the motorist from accepting the existence of cyclists on the roadway. This effect may carry over into law enforcement attitudes, and those involved in investigating and litigating accidents. In Priority Level II, Map No. 73, the proposed Old Airport Coast Path will serve a similar purpose and not be subject to road intersection. Suggest deleting Map No. 81, and if it cannot be deleted, then move it to Priority No. III, and substituting it with Priority Level II, Map. No. 73.

Suggest moving Priority Level II, Map. Nos 61, 62 and 67 into Priority No. I to replace the funding from Map. 81.

Ron, I realize that we are responding to a draft plan and that funding for any of these projects may be few and far between but I do expect opposition from others in the cycling community here over Map 81.

VL

HWY-TO
2.0260

MAY 1 5 2003

Mr. Ron Reilly, Chair
Mayoral Bicycle and Pedestrian Advisory Committee
County of Hawaii
c/o Department of Parks and Recreation
101 Pauahi Street, Suite 6
Hilo, Hawaii 96720

Dear Mr. Reilly:

Subject: Update of *Bike Plan Hawaii*

Thank you for reviewing the Preliminary Draft of *Bike Plan Hawaii*. Your comments helped us to rethink what we wanted to accomplish in the plan and to address its shortcomings. I am writing to let you know what actions were taken with respect to your concerns and suggestions.

Subsequent to your correspondence dated February 11, 2003, we received follow-up e-mail messages with comments from Herb Soloway, J. B. Friday, and Mary Osborne. Their comments are also addressed below.

Responses to your general comments:

1. *The committee had some difficulty understanding what the exact scope of work might be for many of the projects, e.g., "Signed Shared Road" could be vertical signage only, or this plus on street pavement striping for bicyclists.*

We realize that descriptions of the proposed bicycle facilities are sketchy. But with more than 400 facilities proposed on six islands, more detailed project descriptions (and the analysis required for this) would be overwhelming. As a conceptual planning document, the master plan is limited to developing a picture of the overall network, and, in general, determining what type of facility appears to be most appropriate based on readily available information, such as maps and windshield surveys. Because detailed analyses are not possible at this stage, input from road users, such as your group, are particularly useful.

MAY 15 2003

2. *The committee feels that implementation of many bicycle projects would be best, and most affordably, achieved if they were done at the time of routine road resurfacing and road maintenance.*

The plan also states that bicycle facilities that are “incidental” to larger roadway construction, resurfacing, and repair projects are often the most economical and efficient way to expand the bikeway network.

3. *Committee members feel that the long, narrow, often curved bridges along the Hamakua Coast north of Hilo are a hazardous barrier to bicycle travel. We urge consideration of retrofitting these bridges with bike/pedestrian walkways (perhaps a cantilevered clip-on) for the most egregious examples.*

Several bridges on Kamehameha Highway on the North Shore of Oahu have been or are planned to be replaced with ones accommodating bicycle and pedestrian use. However, these bridges were relatively short. The longer bridges on the Hamakua Coast may not be able to accommodate cantilevered attachments, and would require further structural engineering studies.

The following actions were taken with respect to your project-specific comments:

Map No.	Bikeway Proposal as Described in the Preliminary Draft Plan	Changes (if any) in Draft Plan
2, Hilo	Kilauea Avenue (Waianuenue Ave to W. Puainako St), Bike Lane, Priority II	Priority changed to Level I
6, Hilo	Rainbow Drive (loop behind Waianuenue Ave), Signed Shared Road, Priority II	Priority changed to Level III
7, Hilo	Waianuenue Avenue (Akolea Rd to Bayfront Hwy) Signed Shared Road, Priority I	Facility type changed to Bike Lane on Waianuenue Avenue (from Hilo Medical Center to Bayfront Hwy). From Hilo Medical Center to Akolea Rd, proposed facility remains as a Signed Shared Road
15, Hilo	Bayfront Highway (Waianuenue Ave to Manono St), Signed Shared Road, Priority I	Facility type changed to Bike Lane on Bayfront Highway (from Waianuenue Ave to the Bayfront crossover to Manono St to Pauahi St)
18, Hilo	Kekuanaoa Street (Airport Access Road), Signed Shared Road, Priority II	Facility type changed to Bike Lane and Priority changed to Level II
19, Hilo	Piihoni Street (Manono St to Kanoelehue Ave), Signed Shared Road, Priority I	Priority changed to Level II
29a, Hilo	Railroad Avenue (Leilani St to end of paved roadway), Signed Shared Road, Priority I	Facility type changed to Bike Lane
81, Waimea-Kohala	Off-road path adjacent and parallel to Queen Kaahumanu Hwy, Priority I	Given the relatively strong support for this project exhibited at the Community Meeting-Workshop, we have left this project at Level I. Possibility of change pending additional feedback during the comment period for the Draft Plan
89, Waimea-Kohala	Waikoloa Bikeway (Paniolo Ave), Signed Shared Road, Priority II	Facility type changed to Bike Lane and Priority changed to Level I

Mr. Ron Reilly

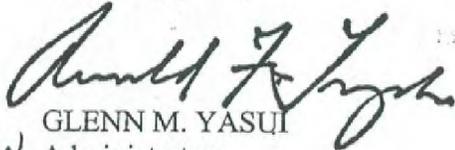
Page 3

HWY-TO 2.0260

MAY 15 2003

Please note that the Draft Plan will be distributed for public review in May and we will be sending you a copy at that time. This project was budgeted for two rounds of community meetings, both of which took place during the formative stages of the plan. Although we will not be holding meetings during the public review period for the draft plan, we will be mailing CD-ROMs to everyone who attended a prior meeting and provided a mailing address on the sign-up sheet. Hardcopies of the plan will be available at all public libraries. The plan can also be viewed and/or downloaded from the project website, and reviewers will have the option of submitting their comments online.

Very truly yours,


GLENN M. YASUI
Administrator
Highways Division

VL:ss

AR00026111

VL

HWY-TO
2.0263

MAY 1 5 2003

Mr. Eric Crispin
Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Crispin:

Subject: Update of *Bike Plan Hawaii*

Thank you for reviewing the Preliminary Draft of *Bike Plan Hawaii*. Your comments helped us to rethink what we wanted to accomplish in the plan and to address its shortcomings. I am writing to let you know what actions were taken with respect to your concerns and suggestions.

1. *In addition to providing an integrated system of bikeways for work, school, shopping trips, and recreation..., Section 4.1.1.3 (Bikeway System) of the Koolauloa Sustainable Communities Plan also mentions that the Lai'e Community Advisory Group proposes a bikeway plan for bicycle routes along private streets throughout the La'ie community.*

A statement has been added to the description of the Koolauloa region referring to the community's desire to study and plan for bicycle routes in Laie.

2. *We recommend coordination of the implementation of Bike Plan Hawaii Priority I projects with the Priority I projects of the Honolulu Bicycle Master Plan to ensure bicyclists are able to continue their rides beyond the Primary Urban Center. Also, some consideration should be given to the development of bike facilities associated with the Pearl Harbor Historic Trail, which is an important regional facility, which would benefit communities from Aiea to Nanakuli.*

Given the importance of connectivity in the bikeway network, we added paragraphs to two sections of the plan, emphasizing the need to coordinate high-priority projects identified in *Bike Plan Hawaii* and the Honolulu Bicycle Master Plan.

A prime opportunity for state-county coordination is the Leeward Bikeway (currently in design) and its connection to the Pearl Harbor Historic Trail. We have expanded this

Mr. Eric Crispin

Page 2

HWY-TO 2.0263

MAY 15 2003

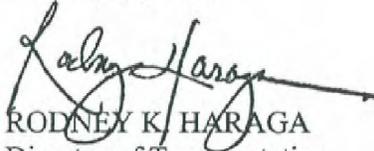
discussion in the text and called attention to the potential for linking this facility to residential areas and attractions along the pathway.

3. *Should the State desire to acquire private property to create new bikeways, they will have to submit a subdivision application and construction plans to the Department of Planning and Permitting for review and approval.*

Comment noted and will be relayed to departmental staff and consultants working on Oahu bikeway projects.

Please note that the Draft Plan will be distributed for public review in May and we will be sending you a copy at that time.

Very truly yours,



RODNEY K. HARAGA
Director of Transportation

VL:ss

DEPARTMENT OF PARKS AND RECREATION
CITY AND COUNTY OF HONOLULU

1000 ULUOHIA STREET, SUITE 309 • KAPOLEI, HAWAII 96707
TELEPHONE: (808) 692-5561 • FAX: (808) 692-5131 • INTERNET: www.co.honolulu.hi.us



JEREMY HARRIS
MAYOR

WILLIAM D. BALFOUR, JR.
DIRECTOR

EDWARD T. "SKIPPA" DIAZ
DEPUTY DIRECTOR

February 21, 2003

Mr. Glenn Okimoto
Interim Director of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

RECEIVED
FEB 28 1 06 PM '03
DEPT. OF TRANSPORTATION
HIGHWAYS DIVISION

Dear Mr. Okimoto:

Thank you for the copy of the *Bike Plan Hawaii* (State of Hawaii Master Plan) and the opportunity to comment.

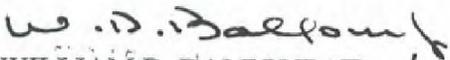
This appears to be an ambitious, forward looking document, which enhances local community green-scape, as well as opportunities for recreational and transit oriented cycling.

The expectation that anyone will provide high-level maintenance for new bike areas without resources seems inappropriate. These new areas must be low maintenance which will reduce the impact of long-term costs as well as the original cost for installation. While user agreements to perform ongoing maintenance, as part of an *Adopted Area* sounds good up front, historical data seems to indicate that these user groups wear out, lose interest and eventually stop performing original duties.

Finally, the maintenance fund needs to be defined in terms of where monies come from, what they can be used for and who controls it.

Should you have any questions, please contact Mr. Lanky Morrill, Administrative Assistant of the Parks Maintenance and Recreation Services, at 692-5416.

Sincerely,


WILLIAM D. BALFOUR, JR.
Director

WDB:ea
20510

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HIGHWAYS DIVISION
DEPT OF TRANSPORTATION

AR00026114

VL

HWY-TO
2.0262

MAY 15 2003

Mr. William D. Balfour, Jr.
Director
Department of Parks and Recreation
City and County of Honolulu
1000 Uluohia Street, Suite 309
Kapolei, Hawaii 96707

Dear Mr. Balfour:

Subject: Update of *Bike Plan Hawaii*

Thank you for reviewing the Preliminary Draft of *Bike Plan Hawaii*. Your comments helped us to rethink what we wanted to accomplish in the plan and to address its shortcomings. I am writing to let you know what actions were taken with respect to your concerns and suggestions.

1. *The expectation that anyone will provide high-level maintenance for new bike areas without resources seems inappropriate. These new areas must be low maintenance which will reduce the impact of long-term costs as well as the original cost for installation. While user agreements to perform ongoing maintenance, as part of an Adopted Area sound good up front, historical data seems to indicate that these user groups wear out, lose interest and eventually stop performing original duties.*

We also share your concerns regarding ongoing maintenance of all bicycle facilities. To extend the effectiveness of limited resources, the plan advocates what must be a mixed approach, including design of low-maintenance facilities, a volunteer-based "adopted area" program, and, perhaps, privatization of some maintenance activities (currently used on a trial basis in our department) – along with routine maintenance conducted by departmental crews.

2. *Finally, the maintenance fund needs to be defined in terms of where monies come from, what they can be used for and who controls it.*

The plan links the accomplishment of any new maintenance task to the acquisition of additional or re-allocated funds. A more definitive and specific statement on the sources and expenditures of maintenance funds is difficult, given both our reliance on cyclical

Mr. William D. Balfour, Jr.
Page 2

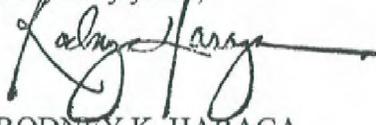
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MAY 15 2003

legislative appropriations and our need to reserve some flexibility to use the funds for various critical purposes.

Please note that the Draft Plan will be distributed for public review in May and we will be sending you a copy at that time.

Very truly yours,

A handwritten signature in black ink, appearing to read "Rodney Haraga", with a long horizontal stroke extending to the right.

RODNEY K. HARAGA
Director of Transportation

VL:ss

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 523-4564 FAX: (808) 523-4567
WEB SITE ADDRESS: www.co.honolulu.hi.us

JEREMY HARRIS
MAYOR



TIMOTHY E. STEINBERGER, P.E.
ACTING DIRECTOR

GEORGE TAMASHIRO, P.E.
ASSISTANT DIRECTOR

CDP 03-0049

March 20, 2003

Mr. Vincent Llorin
Bicycle and Pedestrian Coordinator
Department of Transportation
State of Hawaii
601 Kamokila Boulevard, Room 602
Kapolei, Hawaii 96707

Dear Mr. Llorin:

Subject: Update of Bike Plan Hawaii

We have reviewed the preliminary draft of Bike Plan Hawaii and have the following comments:

1. Chapter, page 4, Aesthetic Considerations – Recommend coordinating bike route planning with the City's Department of Parks and Recreation's Street Tree Beautification program and the "More Livable Communities Program" to enhance biking experience.
2. Chapter 6.4.2, page 8, Near-term – Consider completing missing links between existing sections of bike route. They may be identified in other plans, i.e., Oahu Urban Bikeway Master Plan.
3. Chapter 7, page 6 – Recommend a graphic map at key locations showing destinations to benefit novice bikers and tourists unfamiliar with the bikeways.
4. Chapter 9, page 3 – Recommend including the following references:
 - a. Diamond Head Road Recreation Master Plan (attached).
 - b. Aiea-Pearl City Livable Communities Plan (attached).

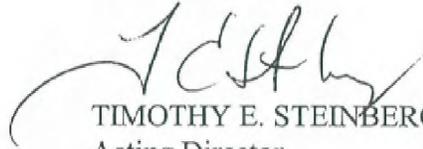
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HIGHWAYS DIVISION
DEPT OF TRANSPORTATION

Mr. Vincent Llorin
Page 2
March 20, 2003

5. Recommend adding to the bikeway data chart for Oahu, a .45-mile section of single bike lane currently underway at Diamond Head Road (see attached charts).

Should you have any questions, please contact Michael Creagh at 527-6329.

Very truly yours,

A handwritten signature in black ink, appearing to read 'T. Steinberger', with a large, sweeping flourish extending to the left.

TIMOTHY E. STEINBERGER, P.E.
Acting Director

GS:dk
Attach.

Diamond Head Road Recreation Master Plan

Prepared for:
City & County of Honolulu
Department of Design and Construction

Prepared by:
Townscape, Inc.
900 Fort Street Mall, Suite 1160
Honolulu, HI 96813

March 2002

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

JOB NO. SL-265-01

DIAMOND HEAD ROAD
MASTER PLAN IMPROVEMENTS

TAX MAP KEY: 3-1-37,38 & 42

PREPARED BY:
RONALD N.S. HO & ASSOC.
ELECTRICAL ENGINEERS



LOCATION MAP
NOT TO SCALE



SHEET NO.	TITLE SHEET	DESCRIPTION
T-1	TITLE SHEET	
E-1	ELECTRICAL SITE PLAN & SYMBOLS	
E-2 & E-3	GENERAL NOTES	
E-4 THRU E-8	ELECTRICAL PARTIAL PLANS	
E-9	TYPICAL DUCT SECTIONS	
E-10 & E-11	MISCELLANEOUS DETAILS	
E-12	STREET LIGHT CONNECTION DIAGRAM	
E-13 THRU E-15	STREET LIGHT DETAILS	
C-1	NOTES	
C-2 & C-3	MISCELLANEOUS DETAILS	
C-4 THRU C-6	RESURFACING AND DEMOLITION PLANS	
C-7 THRU C-9	ROADWAY PLANS AND STRIPING PLANS	
C-10 & C-11	PAVEMENT MARKING DETAILS	
C-12	TRAFFIC CONTROL PLAN	
L-1	LANDSCAPE IRRIGATION PLAN & DETAILS	
L-2	LANDSCAPE PLANTING PLAN & DETAILS	

APPROVED BY:

[Signature]
DIRECTOR, DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

[Signature]
TELEVISION DEPARTMENT OF PLANNING AND HOUSING
CITY AND COUNTY OF HONOLULU

MARKHAM ELECTRIC COMPANY

WIRZEN HAWAII

THE L&C COMPANY

DATE: 10/1/81

DATE: _____

DATE: _____

DATE: _____

DATE: _____

Island of Oahu							
Proposed Bicycle Facilities							
Map No.	Facility Location	Type	Juris.	Cost Class.	Length (mi.)	Cost Estimate	Priority Level
Waimanalo Circuit							
93a	Kumuhau St-Waikupanaha/Ahiki St	Route	C	B	3.4	\$146,200	III
Waimanalo Circuit							
93b	Hihimanu St-Oluolu St	Route	C	B	1.7	\$73,300	III
Kalaniana'ole Highway							
94	Aloiloi St (Waimanalo)-Makapuu	Route	S	C	4.8	\$1,358,500	I
East Oahu							
Kalaniana'ole Highway							
95	Makapuu-Sandy Beach	Route	S	A	2.2	\$7,000	I
Kalaniana'ole Highway							
96	Sandy Beach-Lunalilo Home Rd	Route	S	A	2.6	\$8,300	II
Portlock Road							
97	Kalaniana'ole Hwy-Lunalilo Home Rd	Route	C	A	0.8	\$2,500	II
Ahukini Street							
98	Lunalilo Home Rd-Kamiloiki Elem School	Route	C	B	0.7	\$2,100	III
Wailua Street							
99a	Hawaii Kai Dr-Lunalilo Home Rd	Route	C	B	0.5	\$21,600	III
Keahole Street							
99b	Kalaniana'ole Hwy-Hawaii Kai Dr	Route	C	B	0.6	\$25,900	III
Hawaii Kai Drive							
99c	Kalaniana'ole Hwy-Wailua St	Route	C	B	1.7	\$73,300	III
Kawaihae Street							
99d	Kalaniana'ole Hwy-Hawaii Kai Dr	Route	C	A	0.9	\$2,900	III
Halemaumau Street							
99e	Kalaniana'ole Hwy-Kalaniana'ole Hwy	Route	C	B	0.8	\$34,500	III
Hind Iuka Drive							
99f	East Hind Dr-Wailupe Valley School	Route	C	B	0.7	\$30,200	III
West/East Hind Drive							
99g	Kalaniana'ole Hwy-Kalaniana'ole Hwy	Route	C	B	1.2	\$51,800	III
Analii/Poola Street							
100	Kalani Waialae Iki Park-Keikilani Aina Haina Elem School	Path	C	C	0.9	\$305,200	II
Primary Urban Center							
<i>Diamond Head Road (if not listed in "Existing")</i>							
Pali Highway							
101	Nuuanu Ave-Waokanaka St	Route	S	C	1.3	\$367,900	II
Ala Moana Boulevard							
102	Kalakaua Blvd-Connect to end of existing Nimitz Bike Lane	Lane	S	C	2.7	\$2,949,500	I
Nimitz Highway							
103	Middle St-Waiakamilo Rd	Lane	S	C	1.0	\$1,092,400	I
Liliha Street							
104	King Street-H-1 Freeway	Lane	S	C	0.4	\$437,000	III

Island of Oahu Existing Bicycle Facilities		Jurisdiction	Signed Shared Road Length (mi.)	Bike Lane Length (mi.)	Shared Use Path Length (mi.)	All Facilities Length (mi.)	Addition since 1994 Plan	Notes
Oahu Avenue Maile Wy-Alaui Wy	C	0.5					■	
Metcaif Street Wildier Ave-University Ave	C		0.3					
McCully Street Kapiolani Blvd-Wildier Ave	C	0.8						
Ala Wai Canal Mauka Promenade Ala Moana Blvd-Ala Wai Elem School	C				1.0			
Adj. to Manoa/Palolo Drainage Canal Ala Wai Elem School-Date St	C				0.4			
Kapahulu/Date Street Path Manoa/Palolo Drainage Canal-Date St- Ala Wai Blvd (behind Waikiki Library)	C				0.7			
Kapahulu Avenue Paki St-Kalakaua Ave	C				0.9			
Paki Avenue Poni Moi Rd-Kapahulu Ave	C				0.9			
Kalakaua Avenue Poni Moi St-Monsarrat Ave	C		0.3				■	
Kalakaua Avenue Monsarrat Ave-Ala Moana Blvd	C	1.7	.4				■	
Ala Moana Park Path Magic Island-Kewalo Basin	C				1.6			
Young Street Isenberg St-Victoria St	C							
Hotel Street Vicinity of Ward Ave-Alapai St	C	0.2						
Waikamilo Rd-Houghtailing St Nimitz Hwy-N. School Street	C		1.2					

*Under
Contract
to Construct
Diamond
Head Rd*

*1-lane Bike Lane
1-lane Shared*

AIEA-PEARL CITY
LIVABLE COMMUNITIES PLAN

Prepared for:

*City and County of Honolulu
Department of Planning and Permitting*

Prepared by:

*Wilson Okamoto & Associates, Inc.
Kober/Hanssen/Mitchell Architects
Miyabara Associates*

October 2002

**AIEA - PEARL CITY
 LIVABLE COMMUNITIES
 PLAN**

**PROPOSED
 PEDESTRIAN/
 BICYCLE
 CIRCULATION
 PLAN**

Figure 5-27

- Sources:
1. Bike Plan Hawaii
State of Hawaii Department of Transportation (April 1994)
 2. Honolulu Bicycle Master Plan
City & County of Honolulu Department of Transportation Services (April 1999)
 3. Pearl Harbor Historic Trail Master Plan
City & County of Honolulu (May 2007)
 4. Field Environmental Assessment, Honolulu Bicycle Master Plan
Improvements College Access Project No. 26, Pearl Harbor Historic Trail to Leeward Community College
City and County of Honolulu Department of Transportation Services (July 2001)
 5. Recommendations based on various suggestions from:
 • Aiea-Pearl City Livable Communities Plan Community Workshops of December 1, 1999 and June 3, 2001
 • Aiea-Pearl City Livable Communities Plan Community Survey (April 2001)

Prepared By

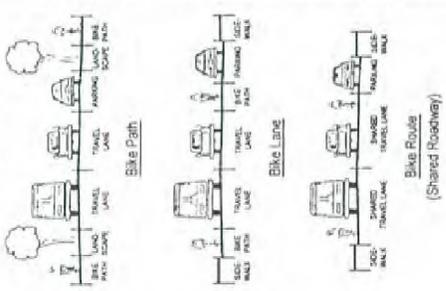
**WILSON OKAMOTO
 & ASSOCIATES, INC.**

December 5, 2001

Graphic Scale In Feet

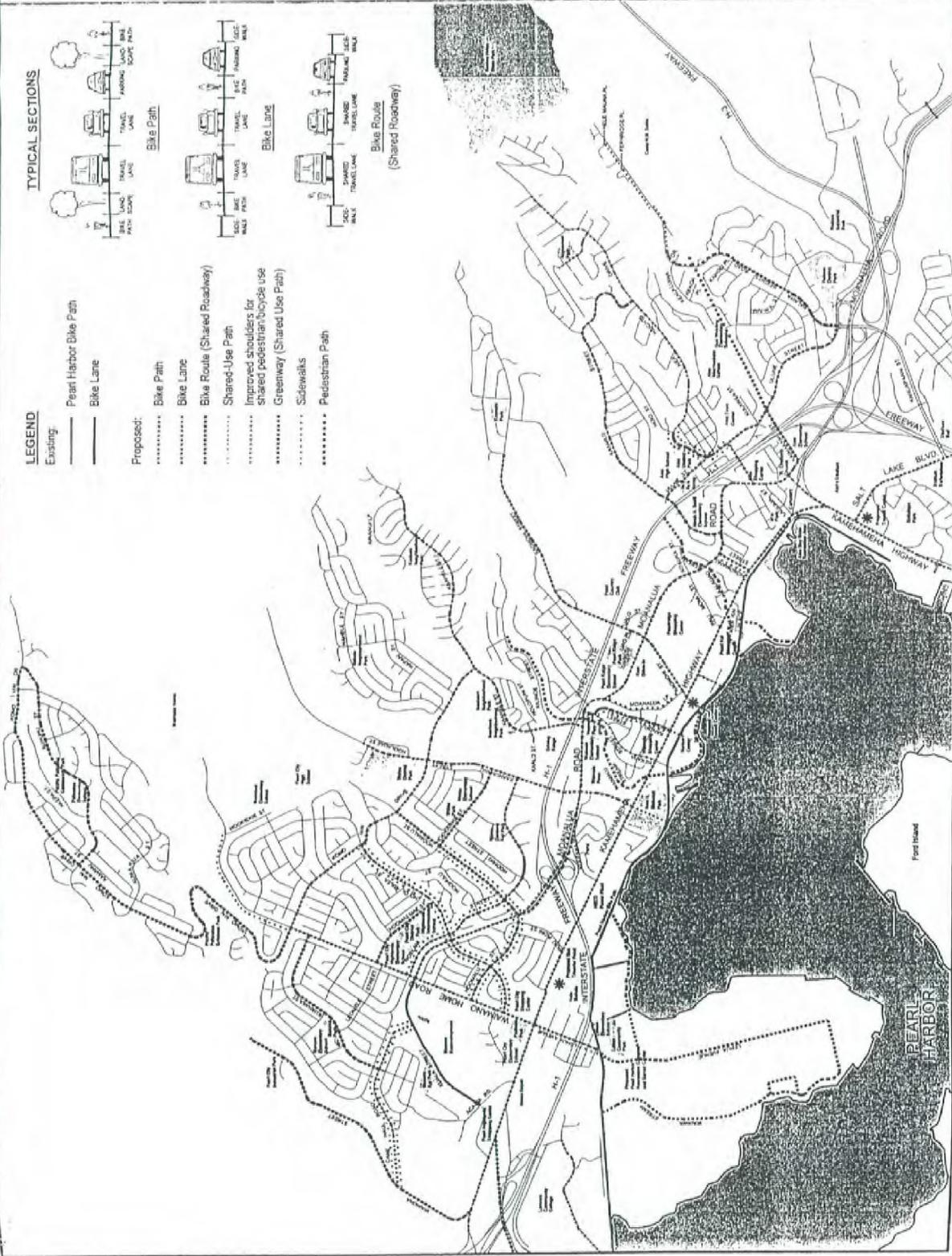


TYPICAL SECTIONS



LEGEND

- Existing:
- Pearl Harbor Bike Path
 - Bike Lane
- Proposed:
- Bike Path
 - Bike Lane
 - Bike Route (Shared Roadway)
 - Shared-Use Path
 - Improved shoulders for shared pedestrian/bicycle use
 - Greenway (Shared Use Path)
 - Sidewalks
 - Pedestrian Path



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HWY-TO
2.0264

MAY 1 5 2003

Mr. Timothy E. Steinberger
Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Dear Mr. Steinberger:

Subject: Update of *Bike Plan Hawaii*

Thank you for reviewing the Preliminary Draft of *Bike Plan Hawaii*. Your comments helped us to rethink what we wanted to accomplish in the plan and to address its shortcomings. I am writing to let you know what actions were taken with respect to your concerns and suggestions.

1. *Aesthetic Considerations—Recommend coordinating bike route planning with the City Department of Parks and Recreation's Street Tree Beautification program and the "More Livable Communities Program" to enhance biking experience.*

A statement has been added to the plan to reinforce the importance of coordination between governmental agencies.

2. *Chapter 6.4.2, page 8, Near-term—Consider completing missing links between existing sections of bike route. They may be identified in other plans, i.e., Oahu Urban Bikeway Master Plan.*

The assessment process used to prioritize bikeway proposals included thirteen evaluation criteria, including "missing link" criteria. Because connectivity is important in the bikeway network, we added paragraphs to two sections of the draft plan, emphasizing the need to coordinate high-priority projects identified in *Bike Plan Hawaii* and the Honolulu Bicycle Master Plan.

3. *Chapter 7, page 6—Recommend a graphic map at key locations showing destinations to benefit novice bikers and tourists unfamiliar with the bikeways.*

Orientation tools can help novice bicyclists and tourists navigate through unfamiliar areas. Among the recommended actions currently in the draft plan are destination signs

MAY 15 2003

and maps. Once the plan has been finalized, we will develop an interactive website that will enable users to identify existing bicycle facilities in areas they would like to ride.

4. *Chapter 9, page 3—Recommend including the following references:
Diamond Head Road Recreation Master Plan
Aiea-Pearl City Livable Communities Plan*

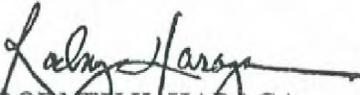
Citations of both documents have been added to the bibliography.

5. *Recommend adding to the bikeway data chart for Oahu, a .45-mile section of single bike lane currently underway at Diamond Head Road.*

The list of bicycle facilities currently underway has been amended to include the bike lane/shared use roadway on a .45-mile section of Diamond Head Road. Thank you for pointing out this oversight.

Please note that the Draft Plan will be distributed for public review in May and we will be sending you a copy at that time.

Very truly yours,


RODNEY K. HARAGA
Director of Transportation

VL:ss



**WRITTEN COMMENTS
ON THE
DRAFT PLAN**

Bike Plan
Hawaii

Draft Plan Comments

The following table contains comments received on the draft version of Bike Plan Hawaii. Also shown are the actions taken in response to the comments.

Date	Reviewer	Comments	Responses
5/28/2003	Doug Haigh, Kauai County Dept. of Public Works	Noted that cost of bike paths at Lydgate Park was \$75 per CY.	Unit costs were kept as is. The paths at Lydgate Park were built from higher cost concrete rather than asphalt, which is expected in most other places.
6/2/2003	Ivan Kaisan	<ol style="list-style-type: none"> 1. Plan's objectives and recommendations are sound; good job hyperlinking (CD version) 2. AASHTO standard shoulders on highways can serve as bike-friendly shoulder lanes (page 6-1), but are not shown in maps. 3. Mileage of existing facilities on Oahu seems impressive, but few are longer than 2 miles. 	<ol style="list-style-type: none"> 1. Comment noted. 2. A list of roadways with "bike friendly" shoulders was included as Appendix H. 3. Bike plan strongly advocates filling in the missing links and expanding the network. For example, "missing link" was one of the criteria used to prioritize bicycle facility proposals.
6/2/2003	Frank Haas, Hawaii Tourism Authority	No comment.	
6/9/2003	Karen White	Bicycles on sidewalks are hazardous for pedestrians.	Comment noted.
6/11/2003	Victor Jensen	Would like to see separate, paved bike path on Queen Kaahumanu Highway (Kona coast of Big Island)	Comment acknowledged—part of a localized debate on merits of off-street vs. on-street bike facilities.
6/12/2003	Jay and Phyllis Hanson	Definitely need paths.	Comment acknowledged—part of a localized debate on merits of off-street vs. on-street bike facilities.
6/12/2003	Brian Richardson	Is there a poster board that can be used for a display at Windward Community College?	No poster board was prepared for this project, but KI sent extra Oahu island map, and regional maps of Windward area that could be used for display.
6/10/2003	Brian Ishii, Hawaii County Dept. of Public Works	<ol style="list-style-type: none"> 1. If a bike facility is proposed for a particular roadway, is it a recommendation or requirement? 2. Do bike facilities have precedence over pedestrian facilities, additional lanes to relieve congestion, or on-street parking? 3. Opposed to signing a paved shoulder for bike use when no sidewalk is provided for pedestrians. 	<ol style="list-style-type: none"> 1. Recommendation 2. Bike facilities do not have precedence. Where space is limited, provision of a bike facility should be evaluated on a case-by-case basis. 3. Comment acknowledged.

Date	Reviewer	Comments	Responses
6/13/2003	Greg Kai	There needs to be more control over aggressive drivers.	Comment acknowledged. E-mail response pointed out the inclusion of education and enforcement initiatives in the bike plan.
6/13/2003	Chian Leng Chia	1. Suggested that bike projects be prioritized based on some measure of demand. 2. Suggested that bike projects in the UH Manoa area be given high priority.	1. Difficult and costly to obtain data on projected demand. 2. University area outside scope to update Bike Plan Hawaii; referred to the Honolulu Bicycle Coordinator.
6/16/2003	Casey Law	There needs to be a good bike route to Kauai Community College.	The final plan shows a proposed extension of Nuhou bike lane to Nawiliwili Road. Existing shoulders on Kaumualii Highway can be used for bicycling. A proposed project to widen the highway includes plans to widen the shoulders as well.
6/16/2003	Laurel Brier	1. CD-ROM difficult to use. 2a. What was the justification for redoing the 1994 plan? Could the funds be used to execute proposals in the 1994 plan, instead? 2b. The new plan offers little change for Kauai. 3a. Plan shows an interruption in the coastal bike path from Lihue to Anahola. 3b. Did the consultants contact the Ka Ala Hele Makalae committee. 4. The path on Kawaihau Road does not meet the standards of a shared use path. 5. Map does not show schools in the Kapaa area. 6. Why does the plan show a highway connecting Anini	1. CD-ROM allowed greater distribution than reliance on hardcopies alone (as in the past). We also heard from many people who liked the new technology. 2a. Like other State transportation plans, bike plan is updated periodically to reflect changing conditions and preferences. Plan funded by State Planning and Research funds which cannot be used for construction. 2b. Plan for Kauai was updated to include coastal paths on South and North Shores, a more extensive network of bikeways in urban areas, and along canals, rail, and cane haul right-of-ways. 3a. Mapping error was corrected in the final plan. 3b. Consultants were not informed about the committee despite two public meetings and several meetings with County officials. 4. The Kawaihau Road path is considered an interim facility, pending availability of County resources to construct a more permanent path that meets AASHTO guidelines. 5. Schools (and other details) are shown on the regional map, rather than the island map. 6. Plan does not show any new highway in this area.

Date	Reviewer	Comments	Responses
		to Princeville? Previous groups discussed a bike path only connecting these two areas. 7. Is the statistic showing only 14 miles of shared use roads accurate?	Where there are roads, sharing the roadway was considered to be most feasible, especially for secondary and rural roads. Where there are no existing roads (in mauka sections), plan proposed shared use paths. 7. Statistic is correct; inventory does not include roads with shoulders wide enough for comfortable bicycling if it is not a designated (signed) bicycle facility.
6/6/2003	Steve Kyono, Kauai District Engineer (HWY-K)	Kealia Road is under County (not State) jurisdiction	Correction made in the bike plan.
6/9/2003	Phil Alencastre (HWY-SM)	Provided current funding data	Information updated in final bike plan.
6/9/2003	Sylvie Courbe	Bicycles should be equipped with lights.	State law requires lights/reflectors on bicycles.
6/14/2003	Walter Enomoto	Mokulele Highway widening project includes bike path.	Maps and tables corrected.
6/17/2003	Beverley Bartlett	Don't remove sidewalks in order to put in bicycling facility.	Comment noted.
6/18/2003	Larry Leopardi, City & County of Honolulu, Dept. of Facility Maintenance	No comment.	
6/19/2003	Tadashi Yoshizawa, State Dept. of Accounting & General Services, Public Works	No comment.	
6/20/2003	Ann Leighton	Expressed concern about how resources are prioritized and suggested that bike education might be the best use of available funds.	Comment noted.
6/20/2003	Gordon Lum, OMPO	No comment.	
6/21/2003	Ronald Yasuda	Expressed support for marked bikeways (lanes) and bike paths over signs.	Comment noted.
6/22/2003	Ron Reilly	Bike Plan Hawaii (Draft Version) is an exemplary document, reflecting outstanding collaboration with the community. 1. Page 2-10 is excellent, but add comment that liability issues should not deter bikeway construction. 2. Add more photos of bike signage (not just the standard AASHTO & MUTCD ones). 3. Emphasize the legal responsibility of bike dealers in	1. Liability discussion (p. 2-10) not changed significantly—conveys support for continued construction of bike facilities. 2. Non-standard signs generally not included in the plan since they need to be approved on a case-by-case basis. 3. Legal responsibility emphasized in Section 4.3.3

Date	Reviewer	Comments	Responses
		<p>registering bikes.</p> <p>4. Establish certain screenlines for regular (annual or biannual) bike counts. Measure effectiveness of bike projects with before and after counts.</p> <p>5. Various project-specific comments.</p>	<p>Enforcement Objective</p> <p>4. Ability to gather data is currently limited by available resources.</p> <p>5. Suggestions were evaluated and incorporated into the plan where feasible.</p>
6/23/2003	Phyllis Graff	Supports bicycling.	Comment noted.
6/24/2003	Parker Sheridan	Higher traffic volumes making it increasingly hazardous to go from Kapolei to the ferry landing at Iroquois Point.	The need to improve bike access to the ferry landing was addressed in Proposal No. 29. The proposed Leeward Bikeway will also be an important facility for commuters between Kapolei and the Iroquois Point landing.
6/24/2003	Patricia Hamamoto, Superintendent, State Dept of Education	<p>1. Supports the Safe Routes to Schools concept.</p> <p>2. Next time would like a survey of all schools in the state.</p>	<p>1. Comment noted.</p> <p>2. Schools in Urban Honolulu were not included in the survey to be consistent with the scope of the plan.</p>
6/24/2003	William D. Balfour, Jr., City & County of Honolulu, Dept. of Parks & Recreation	Reiterated concern about the need to address long-term maintenance so “cost and responsibility issues are not missed, or misunderstood.”	Comment noted.
6/24/2003	W. Fujimoto (HWY-DS)	Suggested minor changes to text.	Changes incorporated into final plan.
6/25/2003	Alison Lowen	Opposes path adjacent to Queen Kaahumanu Highway.	Comment noted.
6/25/2003	Fred Holschuh, Hawaii County Council	<p>1. Importance of bike safety.</p> <p>2. Big Island has a long way to go.</p> <p>3. Bike lane on Kanoiehua Avenue looks dangerous.</p> <p>4. Bike riding on Kohala Mountain Road and Hamakua Highway is dangerous.</p>	<p>1. Comment noted.</p> <p>2. Comment noted.</p> <p>3. Bike lane meets AASHTO design guidelines.</p> <p>4. Existing roadways offer limited room to accommodate bicyclists without acquiring additional right-of-way. However, some improvements may be possible through re-striping, pavement widening, signage, and right-of-way acquisition in strategic places.</p>
6/26/2003	Clem Lam	Pointed out error—correct name is Waimea Trails & Greenways.	Correction made in the final plan.
6/26/2003	David & Laura Wolfe	Wants additional signage on North Shore of Kauai.	Additional study needed to determine appropriate types of and locations for signs to guard against the over-installation of signs.
6/26/2003	Mary Ryan, Keeau Planning Group	Supports the Old Volcano Trail project; requested modifications to map depictions of the project.	Final plan was modified so the proposals are consistent with community-level trail planning. Thank you for the detailed rationale provided.

Date	Reviewer	Comments	Responses
6/26/2003	Willie Espero, State Representative	Supports using cane haul roads for bike facilities, Leeward Bikeway project, and improved beach access.	Comment noted.
6/27/2003	Charlie Rodgers, Hawaii Kai Neighborhood Board	Supports the plan.	Comment noted.
6/27/2003	David Temple	Supports safe bikeways.	Comment noted.
6/27/2003	Harold Murata	Bike riding in Kailua-Kona is only for recreation; therefore, should not be spending money on bike facilities before improving the road system.	Bicycle improvements are frequently funded by sources (such as Transportation Enhancement funds) that cannot be used for highway or road projects.
6/27/2003	Jan Welda Fleetham	Heartily supports more bike paths.	Comment noted.
6/27/2003	Joe Pontanilla	Include street lights on bike paths.	Comment noted.
6/27/2003	Karen Harris	Improved bike facilities needed in Kailua-Kona. Supports path along Queen Kaahumanu Highway.	Comment noted.
6/27/2003	Larry Stone	Supports bike facilities—right now too hazardous to ride bikes.	Comment noted.
6/27/2003	Marty Burke, Waipahu Neighborhood Board	<p>1. Plan may be too optimistic.</p> <p>2. Should count the number of time access to bike racks on the bus is denied because it's full—need a better gauge of demand.</p> <p>3. Some paths are located in places that are too demanding for recreational riders, such as proposed route on Pali Highway-Nuuanu Pali Drive.</p> <p>4. Good road manners cannot be legislated; more bike safety instruction is needed in school bike safety and drivers education programs, and in licensing exams.</p> <p>5. Need more landscaping to cut down the impact of winds on bicyclists.</p> <p>6. Various minor corrections</p>	<p>1. Plan provides a picture of the “ultimate” bikeway network. This approach was favored by transportation officials across the state.</p> <p>2. Good suggestion, but needs to be addressed to the City’s Department of Transportation Services.</p> <p>3. The plan recognizes that bicycle facilities are needed and used by riders of all different skill levels. The particular routes mentioned are already being used regularly and the plan recommends that they become officially recognized facilities and, in some cases, upgraded. Nuuanu Pali Drive is a marked detour off Pali Highway. Old Pali Highway, while steep in some places, is an informal route.</p> <p>4. The plan also emphasizes these actions in the section on Education and Enforcement Objectives.</p> <p>5. Landscaping may be warranted on certain routes and wind conditions should be taken into account during the engineering and design phase of bike projects.</p> <p>6. Corrections incorporated into final plan.</p>

Date	Reviewer	Comments	Responses
6/27/2003	Mary Osborne et al.	Support for bike paths is misguided. Opposes bike path along Queen Kaahumanu Highway.	Comment noted.
6/27/2003	PATH—Peoples Advocacy for Paths Hawaii (Similar comments submitted by	<p>Beyond a plan, it is almost a textbook in biking in a comprehensive and very digestible format.</p> <p>An observation, not a criticism: a downfall in this type of planning document is that it inherently freezes time, and regrettably cannot keep up with the changing situation facing our community.</p> <ol style="list-style-type: none"> 1. Correction—Old Airport path does not allow bicycles. 2. Omission—Extension of Walua Road path (north). 3. Consider mentioning the economic feasibility study for the Kaapuni o Hawaii Pathway (proposed to encircle the island of Hawaii) which estimated that it could bring \$12 million to the state and local economy. 4. Restrict use of TE funds to bike and pedestrian projects, and dedicate a portion of STP flex and CMAQ funds to these types of projects. <p>5. End sale of abandoned traditional rights-of-way.</p> <p>6. Plan does not address feasibility of the projects, especially those that might have cultural or historic impacts</p> <p>7. Project-specific comments and suggestions.</p>	<ol style="list-style-type: none"> 1. Correction noted. 2. Extension shown as Big Island, Proposal No. 60a 3. The plan notes the potential for significant economic development related to bicycling, for example, by referencing the data from the Ironman Triathlon. 4. Criteria for use of TE funds is established in federal legislation. Decisions about use of funds are made through the STP process, which has provisions for public input. 5. Comment noted 6. As a conceptual level master plan, project feasibility could not be evaluated individually; however, the plan emphasizes the need for more detailed environmental impact analysis during the engineering stage with participation by all stakeholders. 7. Suggestions were evaluated and incorporated into the plan where feasible.
6/27/2003	Patricia Engelhard, Hawaii County, Dept. of Parks & Recreation	Add Phase 2 extension of the Walua Road facility.	A northern extension of the Walua Road facility was added to the final plan.
6/27/2003	Ron Tsuzuki (HWY-P)	<ol style="list-style-type: none"> 1. Cost factor for bike paths 2-4. Changes in wording to Funding 101 section. 5. Add section on STP Safety funds. <p>6. Clarification on TE funds.</p> <p>7. Changes to page 8-6.</p>	<ol style="list-style-type: none"> 1. Cost factors kept as is. 2-4. Revised wording incorporated into final plan. 5. Section on STP Safety funds was not included because this funding source historically not used for dedicated bike improvements, but for bicycle accommodations that are ancillary to highway improvements. 6. Clarifications made in the final plan. 7. Changes made.

Date	Reviewer	Comments	Responses
		<p>8. Are accesses to military bases covered by the Public Lands Highways Program?</p> <p>9. What approaches taken in other parts of the U.S. to earmark tax revenues for bikeway improvements?</p> <p>10. Add data related to liability for bicycle-related judgments against the State.</p> <p>11. Clarify liability discussion.</p>	<p>8. No.</p> <p>9. Research on new funding mechanisms was outside the scope for the planning update.</p> <p>10. Data not included in the plan.</p> <p>11. Clarifications made in the final plan.</p>
6/28/2003	Jack Thompson	Spreckelsville does not want bike path through the neighborhood.	Comment noted.
6/28/2003	Taira Yoshimura	<p>1. Concerned about photos of bikers without safety gear.</p> <p>2. Need more emphasis on relationship between urban planning and bike travel. Urban sprawl is not conducive to bicycling.</p>	<p>1. Plan contains a mix of photos showing adult bicyclists with and without helmets to reflect real-world practice. However, photos of bicycling children are limited to those with helmets, as required by State law.</p> <p>2. County plans and land use controls govern urban development. As a State plan, Bike Plan Hawaii can only encourage a compact development pattern.</p>
6/29/2003	Gerald Hirata	<p>1. Expressed concern about the fragmented network of bike facilities.</p> <p>2. Would like to see a functional bike facility that showcases the southern part of Kauai.</p>	<p>1. Fragmentation is unfortunate, but it's not an uncommon situation. Many bikeway improvements are incidental to highway improvements. As different roadway sections are cycled through repavement and/or reconstruction, the network of bikeways will also "fill in."</p> <p>2. Comment noted.</p>
6/29/2003	Gerry Rott, B&L Bike & Sports	<p>1. Old Airport Path doesn't allow bikes. There's no "designated" places for experienced or commuter cyclists to ride. Queen Kaahumany Hwy is signed, but not designated as a route. Old Walua Road primarily for recreation fitness and short links.</p> <p>2. Omission—Extension of Walua Road path (north).</p> <p>3. Consider mentioning the economic feasibility study for the Kaapuni o Hawaii Pathway (proposed to encircle the island of Hawaii) which estimated that it could bring \$12 million to the state and local economy.</p> <p>4. Restrict use of TE funds to bike and pedestrian projects, and dedicate a portion of STP flex and CMAQ funds to these types of projects.</p>	<p>1. Correction noted.</p> <p>2. Extension shown as Big Island, Proposal No. 60a</p> <p>3. The plan notes the potential for significant economic development related to bicycling, for example, by referencing the data from the Ironman Triathlon.</p> <p>4. Criteria for use of TE funds is established in federal legislation. Decisions about use of funds are made through the STP process, which has provisions for public input.</p>

Date	Reviewer	Comments	Responses
		5. End sale of abandoned traditional rights-of-way. 6. Plan does not address feasibility of the projects, especially those that might have cultural or historic impacts 7. Various project-specific comments	5. Comment noted 6. As a conceptual level master plan, project feasibility could not be evaluated individually; however, the plan emphasizes the need for more detailed environmental impact analysis during the engineering stage with participation by all stakeholders. 7. Suggestions were evaluated and incorporated into the plan where feasible.
6/29/2003	JoLoyce Kaia	Expressed support any and all bikeways and greenways.	Comment noted.
6/29/2003	Leonard Keith	Need for safe bike paths on Maui.	Comment noted.
6/29/2003	Walter Enomoto	Various corrections.	Corrections made in the final plan.
6/30/2003	Athan Adachi (HWY-M)	1. Use more recent photo of Kaahumanu Avenue bike lane. 2. Change to Fig. 7-3. 3. Add path to northbound side of Puunene Ave (Kuihelani to Hansen Rd) and Mokulele Hwy (Hansen Rd to Piilani Hwy)—in addition to the signed shared road.	1. More recent photo used in the final plan. 2. Revised Fig. 7-3. 3. Change shown in the final plan.
6/30/2003	Bob Leinau	1. How are resources going to be distributed (equitably)? 2. How will the assets be utilized (interpreted to mean what kinds of facilities will be funded)? Benefiting which types of users? 3. Expressed support for various projects in the North Shore area.	1. Resources (for project design and construction) are allocated through the STP process, which involves representation from all parts of the state. 2. Resource allocation is an inherently political process. Therefore, the plan emphasizes the need for users to become involved in the process. 3. Comment noted.
6/30/2003	Charles Brown	1. Pearl Harbor Bike Path should not be redesignated a shared use path. 2. 10-foot minimum is inadequate for paths. 3. Restricting path use to daylight hours more dangerous since it forces bicyclists to use roads at night (could increase State's liability). 4. Bicycle use on buses is underreported 5. Police reporting of accidents is underreporting 6. Should remove proposal for combined bike and	1. Comment noted. 2. AASHTO guidelines suggest wider paths in high-use areas. That determination should be made on a case-by-case basis, and evaluated in the context of available space. 3. Comment noted. 4. Comment noted. 5. Comment noted. 6. A combined bicycle and pedestrian plan would

Date	Reviewer	Comments	Responses
		<p>pedestrian plan.</p> <p>7. Support addition of bicycling awareness to driver's education program.</p> <p>8. Need to give equal attention to reducing traffic violations by drivers.</p> <p>9. Problems at H-1/H-2 overpass.</p> <p>10. Meheula Parkway should stay an unmarked wide curb lane (don't put in bike lanes).</p> <p>11. Sidewalk bikeways.</p> <p>12. Street sweeping schedule is inadequate.</p>	<p>not be limited to shared use facilities.</p> <p>7. Comment noted.</p> <p>8. Comment noted.</p> <p>9. The plan includes a proposal for bikeway improvement in this area.</p> <p>10. Whether or not to install bike lanes is an issue that merits further discussion with the community.</p> <p>11. <i>Did not understand comment.</i></p> <p>12. Comment noted.</p>
6/30/2003	David Hein	Opposes path adjacent to Queen Kaahumanu Hwy.	Comment noted.
6/30/2003	Jane Testa, Hawaii County, Office of Research & Development	Expressed support for the bike plan.	Comment noted.
6/30/2003	Jeffrey McDevitt	Wants bike lane on Alii Drive (Kona)	Certain portions of Alii Drive are too narrow for a bike lane. Where unused right-of-way is available, or additional right-of-way can be acquired, the plan recommends improvements.
6/30/2003	JoAnn Yukimura, Kauai County Council	<p>1. Questions whether it's appropriate to include proposed bypass roads.</p> <p>2. Would like to see Hawaiian diacritical marks added to text.</p>	<p>1. Long-range transportation plans traditionally show future highway improvements. Depending on the stage of development, alignments may be conceptual (as with the several bypass highways proposed for Kauai).</p> <p>2. This recommendation will be considered for the next update.</p>
6/30/2003	Joe Bertram	Expressed support for islandwide (Maui) greenway system.	Comment noted.
6/30/2003	Lance Holter	Expressed support for bike paths.	Comment noted.
6/30/2003	Lance Zhai	No comment.	
6/30/2003	Robin Brandt	<p>1. Participation process was inaccessible.</p> <p>2. No one is assigned responsibility for tracking progress (plan implementation)</p>	<p>1. To maximize accessibility, public participation process included daytime and evening meetings and at venues throughout the state. Draft Plan sent to all public libraries. Planning information was posted on the project website with a feedback window</p> <p>2. Because the plan is updated regularly, there is a built-in accountability mechanism. Every 5-7 years, transportation officials report what has been</p>

Date	Reviewer	Comments	Responses
		3. Report is not reader friendly: no executive summary; not a useful tool for citizen advocate; print is too small; important data is not readily accessible; information is insufficient; didn't have enough time to review the document.	accomplished in the interim. 3. Comments noted.
6/30/2003	Sky Wytenbach	Would like more bike-friendly streets in Waikiki.	Comment noted.
6/30/2003	Thad Calciolari	In favor of shoulder improvements on Queen Kaahumanu Hwy—not path. 1. Opposes path adjacent to Queen Kaahumanu Hwy 2. Use funds to improve shoulders instead.	Comments noted.
6/30/2003	Cheryl Soon, City & County of Honolulu, Dept. of Transportation Services	Plan looks to be very comprehensive, and we look forward to using it to guide us in planning future bikeways on Oahu. 1. Various questions and comments in marked-up hardcopy of Draft Plan.	1. Changes incorporated into the final plan.
6/30/2003	Richard Poirier, Mililani Mauka Neighborhood Board	Bike Plan Hawaii is beautifully organized and written with a wealth of up-to-date information, however, our Board would like to see a clearer endorsement and commitment to the plan from governmental authorities responsible for implementation. In particular, support is expressed for the Kipapa Gulch Pathway project.	Comments noted.
6/30/2003	Greg Bell	Use of the PDF format is very helpful. 1. Old Walua Road—proposed northern segment is missing. 2. Henry Street to Kona Airport (#81) should be extended another 5 miles, ending at the Hualalai resort. 3. Northern end of Queen Kaahumanu Highway (8 mi.) and .75 mile of Kawaihae Road to Akoni Pule Hwy should be a bike path. 4. Devote a full section to explain the rationale for the inclusion of each project.	1. Extension of the Old Walua Road Bike and Pedestrian Scenic Route added to the final plan. 2. This proposal should be considered during the next update, pending construction of the first increment and evaluation of use levels. 3. Same as #2, above. 4. With hundreds of proposed bikeways, the scope of the planning effort did not allow for this type of project-specific consideration. Any project that moves toward implementation would require adequate justification.
7/1/2003	Eric Crispin, City & County of Honolulu, Dept. of Planning and Permitting	No comment.	

Date	Reviewer	Comments	Responses
7/2/2003	Peter Young, State Dept. of Land & Natural Resources, Historic Preservation Division	In the case of federally funded or sponsored activities, Section 106 of the National Historic Preservation Act is likely to apply, consequently we look forward to participating in consultations on these projects.	Comment noted.
7/3/2003	Francine Wai,	Insert notation related to ADA	Notation included in the final plan.
7/4/2003	Delwyn Ching	1. How will the City connect the Ala Wai Bike Path with the Convention Center promenade? 2. The Pearl Harbor Bike Path currently ends at Waipahu Depot Road (not Waipio Access Road). 3. How will all of this be financed?	1. Comment should be addressed to the Honolulu Bicycle Coordinator. 2. The City's jurisdiction ends at Waipio Point Access Road. Beyond that (towards Waianae), the bike path becomes the Leeward Bikeway under State Highways jurisdiction. The path is currently usable up to Waipahu Depot Road (as shown on the map). 3. Financing is discussed in Chapter 8, Implementation.
7/14/2003	Jeanette Iwado	North Shore Bikeway (Maui); alignment makai of country club will impact privacy	Comment noted.
7/15/2003	Julius Fronda (HWY-DD)	No comment.	
7/16/2003	Hawaii Cycling Club	Organization revised its position; now favor path along Queen Kaahumanu Highway	Comment noted.
8/5/2003	Mike Foley, Maui County, Dept. of Planning	It would be our intent to incorporate the (bike) routes into our local planning documents as necessary.	Comments noted.
8/5/2003	Tim Steinberger, City & County of Honolulu, Dept. of Design & Construction	No comment.	
8/14/2003	Margy Parker, Poipu Beach Resort	1. There is sufficient shoulder space on Ala Kinoki (new bypass road). However, with plans for development on the west side of Poipu, developers should be encouraged to make bikeway connections. In addition, when Maluhia Road is resurfaced or redesigned, the road should connect to the bike route shoulders at Ala Kinoki. 2. Bike route shoulders should be designated with signs.	1. The plan contains a general statement encouraging County governments to require bicycle facilities on new roads. 2. Bike Plan Hawaii calls for a clearer policy on signing shoulders with adequate space for bicyclists.