

Implementation Mechanisms and Policies

O'ahu Bicycle Master Plan

Department of Transportation Services
City & County of Honolulu

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TABLE OF CONTENTS

1.	Introduction	1
2.	Plans and Policies	5
2.1	Functional Plans	5
2.1.1	Bike Plan Hawaii: A State of Hawaii Master Plan 2003	5
2.1.2	Oahu Regional Transportation Plan 2030	9
2.1.3	Hawaii Physical Activity & Nutrition Plan 2007-2012, Hawai'i Department of Health	11
2.1.4	The Hawaii 2050 Sustainability Plan	13
2.1.5	Hawaii Strategic Safety Plan 2007 thru 2012	14
2.1.6	Bikes on TheBus	16
2.2	Policies	17
2.2.1	Revised Charter of Honolulu	17
2.2.2	General Plan	17
2.2.3	Development and Sustainable Community Plans	18
2.2.4	Neighborhood Board Bicycle Related Resolutions	19
3.	Standards and Guidelines	28
3.1	Manual on Uniform Traffic Control Devices: Federal Highway Administration, US Department of Transportation, 2003	28
3.2	Guide for the Development of Bicycle Facilities, American Association of State Highway and Transportation Officials, 1999	30
3.3	Complete Streets	31
3.4	Leadership in Energy and Environmental Design	32
4.	Laws and Regulations	33
4.1	Federal	33
4.1.1	SAFETEA-LU	33
4.1.2	Safe Routes to School	33
4.1.3	Related federal-level policies/laws	35
4.2	State and County	36
4.2.1	Use of Highway Fund for Bikeways Act 286 (§264-18, HRS)	36
4.2.2	Statewide Traffic Violations (§291-34, HRS)	36

- 4.2.3 Statewide Traffic Code (§291C, HRS) 36
- 4.2.4 Honolulu Traffic Code (Chapter 15, ROH) 37
- 4.2.5 Honolulu Subdivision Rules and Regulations (Chapter 22, ROH) 37
- 4.2.6 Honolulu Subdivision Street Standards 38
- 4.3 Environmental Regulations 38
 - 4.3.1 Environmental Impact Statements (Chapter 343 Hawai'i Revised Statutes) 38
 - 4.3.2 Shoreline Management (Chapter 25 ROH)..... 40
 - 4.3.3 Shoreline Setbacks (Chapter 23 ROH)..... 40
- 4.4 Honolulu High Capacity Transit Corridor Project 40
- 5. References..... 42

1. Introduction

This report is a work product of the O'ahu Bicycle Master Plan being prepared for the City and County of Honolulu, Department of Transportation Services. The *O'ahu Bicycle Master Plan Update Work Plan* (Helber Hastert & Fee, May 2008) identifies the Implementation Mechanisms and Policies as Work Product 1.3.1. It provides a synopsis of major plans and policy documents, and provides a brief discussion of the impacts that laws, regulations and other policies may have on bicycle planning. It also reviews national, state and county roadway design and construction standards as they apply to bicycling.

Because of the growing significance of bicycling and walking throughout the 1990's the United States Department of Transportation (USDOT) published *Design Guidance Accommodating Bicycle and Pedestrian Travel: A Recommended Approach: A US DOT Policy Statement Integrating Bicycling and Walking into Transportation Infrastructure* (<http://www.fhwa.dot.gov/environment/bikeped/design.htm>) recommending policies and standards that might achieve the overall goal of fully integrating bicyclists and pedestrians into the transportation system (USDOT 2000).

USDOT's Design Guidance incorporates three key principles:

- a. a policy statement that bicycling and walking facilities will be incorporated into all transportation projects [emphasis in original] unless exceptional circumstances exist;
- b. an approach to achieving this policy that has already worked in State and local agencies; and
- c. a series of action items that a public agency, professional association, or advocacy group can take to achieve the overriding goal of improving conditions for bicycling and walking.

The Design Guidance was drafted in response to Section 1202 (b) of the Transportation Equity Act for the 21st Century (TEA-21) with the input and assistance of public agencies, professional associations and advocacy groups. During the 1990s, Congress spearheaded a movement towards a transportation system that favors people and goods over motor vehicles with passage of the Intermodal Surface Transportation Efficiency Act (1991) and TEA-21 (1998). The call for more walkable, livable, and accessible communities, has seen bicycling and walking emerge as an "indicator species" for the health and well-being of a community. People want to live and work in places where they can safely and conveniently walk and/or bicycle and not always have to deal with worsening traffic congestion, road rage and the fight for a parking space. The guidance identifies the major challenge ahead as follows:

The challenge for transportation planners, highway engineers and bicycle and pedestrian user groups, ... is to balance their competing interest in a limited amount of right-of-way, and to develop a transportation infrastructure that

provides access for all, a real choice of modes, and safety in equal measure for each mode of travel.

USDOT's Policy Statement provides a recommended approach to the accommodation of bicyclists and pedestrians that can be adopted by State and local agencies (as well as professional societies and associations, advocacy groups, and Federal agencies) as a commitment to developing a transportation infrastructure that is safe, convenient, accessible, and attractive to motorized AND non-motorized users alike.

USDOT Policy Statement

1. Bicycle and pedestrian ways shall be established in new construction and reconstruction projects in all urbanized areas unless one or more of three conditions are met:

- bicyclists and pedestrians are prohibited by law from using the roadway. In this instance, a greater effort may be necessary to accommodate bicyclists and pedestrians elsewhere within the right of way or within the same transportation corridor.
- the cost of establishing bikeways or walkways would be excessively disproportionate to the need or probable use. Excessively disproportionate is defined as exceeding twenty percent of the cost of the larger transportation project.
- where sparsity of population or other factors indicate an absence of need. For example, the Portland Pedestrian Guide requires "all construction of new public streets" to include sidewalk improvements on both sides, unless the street is a cul-de-sac with four or fewer dwellings or the street has severe topographic or natural resource constraints.

2. In rural areas, paved shoulders should be included in all new construction and reconstruction projects on roadways used by more than 1,000 vehicles per day, as in States such as Wisconsin. Paved shoulders have safety and operational advantages for all road users in addition to providing a place for bicyclists and pedestrians to operate.

Rumble strips are not recommended where shoulders are used by bicyclists unless there is a minimum clear path of four feet in which a bicycle may safely operate.

3. Sidewalks, shared use paths, street crossings (including over- and undercrossings), pedestrian signals, signs, street furniture, transit stops and facilities, and all connecting pathways shall be designed, constructed, operated and maintained so that all pedestrians, including people with disabilities, can travel safely and independently.

4. The design and development of the transportation infrastructure shall improve conditions for bicycling and walking through the following additional steps:

- planning projects for the long-term. Transportation facilities are long-term investments that remain in place for many years. The design and construction of new facilities that meet the criteria in item 1) above should anticipate likely future demand for bicycling and walking facilities and not preclude the provision of future improvements. For example, a bridge that is likely to remain in place for 50 years, might be built with sufficient width for safe bicycle and pedestrian use in anticipation that facilities will be available at either end of the bridge even if that is not currently the case
- addressing the need for bicyclists and pedestrians to cross corridors as well as travel along them. Even where bicyclists and pedestrians may not commonly use a particular travel corridor that is being improved or constructed, they will likely need to be able to cross that corridor safely and conveniently. Therefore, the design of intersections and interchanges shall accommodate bicyclists and pedestrians in a manner that is safe, accessible and convenient.
- getting exceptions approved at a senior level. Exceptions for the non-inclusion of bikeways and walkways shall be approved by a senior manager and be documented with supporting data that indicates the basis for the decision.
- designing facilities to the best currently available standards and guidelines. The design of facilities for bicyclists and pedestrians should follow design guidelines and standards that are commonly used, such as the AASHTO *Guide for the Development of Bicycle Facilities*, AASHTO's *A Policy on Geometric Design of Highways and Streets*, and the ITE Recommended Practice "*Design and Safety of Pedestrian Facilities*".

In conclusion, the Policy Statement finds that:

Every transportation agency has the responsibility and the opportunity to make a difference to the bicycle-friendliness and walkability of our communities. The design information to accommodate bicyclists and pedestrians is available, as is the funding. The United States Department of Transportation is committed to doing all it can to improve conditions for bicycling and walking and to make them safer ways to travel.

2. State and County Plans and Policies

This section reviews existing State and County plans relevant to bike facility planning. It's divided into two parts: functional plans and policy plans.

2.1 Functional Plans

2.1.1 *Bike Plan Hawaii: A State of Hawaii Master Plan 2003*: Hawai'i State Department of Transportation

With the passage of the Federal legislation and other relevant national policies in the 1990s (ISTEA, TEA-21, etc.), as well as relevant State Plans (e.g., the September 2002 Hawaii Statewide Transportation Plan), the State of Hawai'i reviewed and updated the 1994 Bike Plan Hawaii master plan in 2003. The updated plan was to serve "as a blueprint to improve conditions for the thousands of people statewide who are already bicycling and to encourage new users." It further sought to "clarify HDOT's role in this effort and identify opportunities to work with other key agencies and stakeholders."

The overall goal of *Bike Plan Hawaii 2003* (<http://www.state.hi.us/dot/highways/bike/bikeplan/index.htm>) is to establish bicycling as a safe and convenient mode of transportation for residents and visitors throughout the State. To realize the overall goal, the plan identifies five areas for improvement:

1. Engineering and planning – plan and design new and improved transportation facilities to accommodate and encourage use by bicyclists of all skill levels
2. Education – Expand the range of education activities to reduce bicycle crashes and increase ridership
3. Enforcement – Strengthen enforcement efforts to prevent illegal and reckless behavior by motorists and bicyclists, and safeguard those using the bicycle network
4. Economics – Increase awareness about the economic benefits of increased bicycle use
5. Encouragement – Increase bicycle trips by promoting the personal and community benefits of this travel mode.

Criteria for bicycle facilities were based on guidelines and standards determined by the American Association on State Highway and Transportation Officials (AASHTO), the Federal Highways Administration (FHWA), the Manual on Uniform Traffic Control Devices (MUTCD), Hawai'i Department of Transportation's roadway design standards, and similar resources developed at the county and State level.

Though *Bike Plan Hawaii 2003* is facilities-oriented, it differs from the 1994 plan by providing greater attention to non-construction objectives such as education,

enforcement and economics. Specifically, the 2003 plan focuses primarily on recommending the following:

1. Utilize nationally recognized design guidelines and innovative design solutions for new and already existing roadway projects for appropriate bikeway types and appropriate types of bicyclist usage
2. Develop and support bicycle and motorist education efforts that build awareness and attitudinal changes of all road users (with a special focus on Safe Routes to School)
3. Community cooperation with law enforcement agencies to develop and implement strategies to build awareness of traffic laws, reduce aggressive behaviors and underscore the importance of bicycle registration
4. Identify and participate in efforts that encourage bicycle tourism, economic development related to bicycling and establishment of a scenic byways program
5. Publicize, sponsor and advocate for the development and implementation of those events and activities that promote and establish opportunities for all types of bicycling

The plan also analyzed data relating to crashes, bicycle registrations and licensing, State inventory of bicycle facilities, bicycles on buses as well as community workshops which includes a questionnaire, a school survey and a telephone survey as well as 2000 U.S. Census data related to bicycle commuters.

Results from the surveys focused on these areas of concern:

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

Additional concerns included developing design guidelines for bike facilities and increased political commitment for bike improvements.

Objectives of bikeway proposals for O'ahu include:

- Include bicycle facilities in new roadway construction and during rehabilitation of existing roadways, except where bicycling will be prohibited
- Develop a circumferential bikeway along existing highways, including Farrington Highway, Kamehameha Highway, Kalaniana'ole 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
- Identify routes that promote bicycle commuting and interregional travel

Recommendations from the City's 1999 Honolulu Master Bicycle Plan were incorporated by reference into *Bike Plan Hawaii* 2003.

Bike Plan Hawaii 2003 summarizes information on implementation strategies and identifies an array of potential funding sources. Recommendations include strategies for coordination with county governments and the importance of public involvement. The plan also provides a description of potential funding sources and funding decisions.

Important to note are two provisos that 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 the plan includes a policy proposal to restructure the HDOT facility inventory to add 'shoulder bikeway' as an officially recognized facility type (28.1 miles on O'ahu). The second 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.

Bike Plan Hawaii 2003 provides the following inventory of existing facilities:

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.

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.

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%

A total of 38.5 miles were reported to have been constructed on O'ahu in the 10 year interval between the 1994 and 2003 bike plan studies.

Bike Plan Hawaii 2003 indicates O'ahu has 135.7 miles of bikeways in place or underway. The Plan identifies an additional 258.9 miles of bikeways, in addition to 91.4 miles associated with the "Honolulu Bike Plan," for a total of 350.3 additional bikeway miles (not including 28.1 miles of existing shoulder bikeways).

Funding for the proposed facilities is to be provided by private developers, the U.S. DOT, FHWA, including TEA-21 monies, appropriations made by the State legislature, and bicycle registration fees collected by the counties.

The 2003 Plan lists the following recommendations from the 1994 plan as having 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.
- All buses on O'ahu have been equipped with bike racks. Rack usage exceeds 30,000 loading per month. Hawai'i 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 O'ahu, Maui, and Hawai'i.

2.1.2 *Oahu Regional Transportation Plan 2030*, Oahu Metropolitan Planning Organization (May 2007)

The *Oahu Regional Transportation Plan* (ORTP) 2030 (<http://oahumpo.org/ortp/index.html>) is a regional planning document mandated by a number of state and federal requirements including the Safe, Accountable, Flexible Efficient Transportation Equity Act – A Legacy for Users (SAFETEA-LU). The ORTP is updated at least every five years to ensure that transportation decisions are based on current information and community priorities.

ORTP 2030 provides recommendations for O'ahu bikeways based on *Bike Plan Hawaii* 2003 projects and Priority Projects of the City & County of Honolulu's

Bicycle Master Plan (1999). The ORTP 2030 is a financially balanced plan assuming primary funding sources of Federal, State and City governments. In addition, for planning purposes, a portion of the plan is expected to be funded by the private sector (“developer funding”).

ORTP 2030 focuses on a vision, three broad-based goals, an overview of specific projects, how the projects work together, funding, a summary and project list. The vision and all three goals directly and indirectly support bicycling as an alternative form of transportation, as well as the importance of developing bicycle facilities to support environmentally friendly transportation modes.

The vision of the ORTP 2030 is that by 2030, O'ahu is a place where transportation choices are available and the importance of the H-1 travel corridor is recognized. The three goals reported in ORTP 2030 that support bicycling on O'ahu directly or indirectly are:

- Transportation Services System - Develop and maintain O'ahu's island-wide transportation system to ensure efficient, safe, convenient, and economical movement of people and goods. Objectives included in this goal that support bicycling are:
 - Increasing capacity of system
 - Providing an efficient and convenient transit system
 - Providing access to all important destinations
 - Ensuring that projects are distributed equitably
 - Ensuring that safety and security are provided
 - Integrating the entire system
 - Supporting economic development
 - Providing for systems preservation
- Environment and Quality of Life – Develop and maintain O'ahu's transportation system in a manner that maintains environmental quality and community cohesiveness. Objectives included in this goal that support bicycling are:
 - Encouraging energy conservation
 - Preserving cultural integrity and natural resources
 - Developing alternative transportation modes that are environmentally friendly, including pedestrian walkways and bicycle routes
 - Optimizing use of transportation resources
 - Minimizing disruption of neighborhoods

- Ensuring compatibility with the physical and social character of existing development
- Incorporating landscaping and public safety
- Land Use and Transportation Integration – Develop and maintain O'ahu's transportation system in a manner that integrates land uses and transportation. Objectives included in this goal that support bicycling are:
 - Encouraging innovation
 - Encouraging implementation of land use policies that support efficient use of transportation systems

2.1.3 *Hawaii Physical Activity & Nutrition Plan 2007-2012*, Hawai'i Department of Health (August 2007)

With a severe lack of physical activity among adult and adolescents in both the Hawai'i and the U.S. mainland coupled with an epidemic of unhealthy eating practices, approximately 48% of adults in Hawai'i did not meet the recommended guidelines for physical activity in 2005. In addition, 75% of adults in Hawai'i did not meet nationally recognized recommendations regarding daily consumption of fruits and vegetables, and almost 20% of adults in Hawai'i are considered obese. Native Hawaiians show the highest obesity rate among adults in Hawai'i. Adult obesity-attributable medical expenditures in Hawai'i, was calculated at \$290 million in 2003.

In order to improve these statistics, the Department of Health and an extensive panel of collaborators (local government agencies, community organizations, non-profits) developed the *Hawaii Physical Activity & Nutrition Plan 2007-2012* (<http://www.healthyhawaii.com/images/stories/PANSummit/pan%20plan%20final.pdf>) with a Vision for Hawai'i where all residents are physically active, eat healthy foods, and live in healthy communities. The purpose of the Plan is to provide a framework for policy makers, public entities and private organizations to work together to educate people, advocate for policies, and build environments that allow children and adults to embrace a physically active and nutritionally sound lifestyle.

The Plan was developed with stakeholders representing four working groups (1) Built Environment (2) Worksite (3) Schools and Childcare Facilities and (4) Healthcare Systems and Providers. These four working groups developed Eighth Objectives with corresponding Strategies. Objectives include:

- Objective 1 – Establish state and county coalitions to take the lead in advocating for systemic changes in physical activity and nutrition
- Objective 2 – Increase support for physical activity and healthful nutrition in communities
- Objective 3 – Increase opportunities for physical activity and healthful nutrition in workplaces

- Objective 4 – Strengthen systems to provide daily physical activity and healthful nutrition in pre-K-12 and childcare facilities
- Objective 5- Increase the engagement of healthcare providers in health promotion
- Objective 6 – Increase the percentage of people living in Hawai'i that follow the recommendations for physical activity and nutrition
- Objective 7 – Increase the percentage of Hawai'i residents at a healthy body weight
- Objective 8 – Reduce mortality from coronary heart disease, stroke, cancer, and diabetes

The objectives and strategies that specifically support cycling can be found in the component area focused on the Built Environment. “The built environment refers to building (e.g., workplaces, housing, and schools), land use (e.g., agriculture, industrial, and residential), public resources (e.g., parks, museums, sidewalks, bicycle paths, and crosswalks), zoning regulations, and transportation systems. There is growing recognition that the built environment has an enormous impact on our health. Zoning, transportation, land use, and community design decisions influence the distance people travel to work, school, and shopping, as well as the safety and attractiveness of neighborhoods for walking. In addition to creating barriers to physical activity, community design may also make it inconvenient for residents to purchase healthy foods. The built environment reflects and influences the norms of a community around physical activity and healthy food consumption” (Department of Health 2007).

In addition, Objective 2: Increase support for physical activity and healthful nutrition in communities, has as one of its benchmarks, “to increase the number of schools with programs that encourage biking and walking to school.” In Objective 4: Strengthen systems to provide daily physical activity and healthful nutrition in pre-K-12 and childcare facilities, has as one of its strategies to “Create environments that are safe and more supportive for Hawai'i students to walk and bike to school.” Recommended activities include:

- Increase the number of schools with safe and accessible sidewalks, bike lanes, and crosswalks
- Develop and promote a “walk and bike to school” campaign that establishes designated routes, creative incentive programs, and promotional events
- Develop policies that support parent-led “walking schools buses” and Safe Routes to School to increase physical activity before and after school

Utilizing identified benchmarks, through monitoring and evaluation, stakeholders will attempt to contribute to the prevention of obesity, chronic disease, and premature deaths from conditions such as cardiovascular disease, diabetes, and cancer.

2.1.4 *The Hawaii 2050 Sustainability Plan, Hawaii 2050 Sustainability Task Force (January 2008)*

The Hawai'i State Legislature enacted Act 8 (SSLH 2005) which provided for the development of a sustainability plan to address the vital needs of Hawai'i through the year 2050. As a result of Act 8, the Hawaii Sustainability Task Force was established to review the Hawaii State Plan and the State's comprehensive planning system, and it required the Office of the Auditor to create Hawaii 2050.

The primary purpose of The Hawaii 2050 Sustainability Plan, Hawaii 2050 is to provide policy recommendations for creating a sustainable Hawai'i. Hawaii 2050 priorities and recommendations reflect the voices of the community, stakeholders, and experts as to what kind of Hawai'i they would like to see in the year 2050. Hawaii 2050 utilized an extensive, aggressive and comprehensive community and researched-based planning process.

Hawaii 2050 identified five integrated goals the sustainable future of Hawai'i:

- Goal I: A Way of Life – Living sustainability is part of our daily practice in Hawai'i
- Goal II: The Economy – Our diversified and globally competitive economy enables us to meaningfully live, work and play in Hawai'i
- Goal III: Environment and Natural Resources – Our natural resources are responsible and respectfully used, replenished and preserved for future generations
- Goal IV: Community and Social Well-Being – Our community is strong, healthy, vibrant and nurturing, providing safety nets for those in need. (includes Strategic Action 2 to “Improve public transportation infrastructure and alternatives,” with a recommendation to “increase and improve bicycle and pedestrian facilities, including multi-use pathways.”)
- Goal V: Kanaka Maoli and Island Values – Our Kanaka Maoli and Island cultures and values are thriving and perpetuated

Hawaii 2050 best supports bicycling in Honolulu within the Environment and Natural Resources and Community and Social Well-Being goals. Specific strategic actions are summarized below:

- Environment and Natural Resources:
 - Reduce reliance on fossil (carbon based) fuels
 - Provide greater protection for land, fresh water, and ocean based habitats
 - Conserve agriculture, open space and conservation lands and resources
- Community and Social Well-Being:

- Reduce Traffic Congestion – Hawaii 2050 specifically calls for improved bicycle and pedestrian pathways
- Provide access to diverse recreational facilities and opportunities

Hawaii 2050 also proposes a “Sustainability Council,” a quasi-governmental organization whose resources would be charged with carrying forward the Hawaii 2050 plan, measuring results, and building a publicly accessible bank of knowledge about sustainability.

2.1.5 *Hawaii Strategic Safety Plan 2007 thru 2012, State of Hawai'i, Department of Transportation (2007)*

The passage of SAFETEA-LU (Safe, Accountable, Flexible Efficient Transportation Equity Act – A Legacy for Users) requires all states to develop and implement a highway safety plan. As a result the State Department of Transportation lead the development of a five-year Strategic Highway Safety Plan (SHSP) which had as its goal to reduce the number of traffic-related deaths from an annual average of 135 to 100 or fewer within five years (<http://hltap.eng.hawaii.edu/shsp/SHSP2007-2012.pdf>).

A Core Committee of about 30 individuals consolidated the 22 AASHTO emphasis areas related to roadway safety into seven emphasis areas that were particularly pertinent and pressing in Hawai'i:

- Aggressive Driving
- Impaired Driving
- Vehicle Occupants
- Pedestrian and Bicyclists
- Motorcycle and Moped Safety
- Facility Design (Roadway and Intersection Operations)
- Data and Safety Management

Work groups for each emphasis area developed a list of prioritized strategies, and each strategy is part of a multi-faceted solution to improve traffic safety and reduce the number of traffic fatalities and injuries in Hawai'i.

Those emphasis areas with strategies highlighting the impact on bicycling Hawai'i included: Aggressive Driving, Building Safer Roadways by Design, and Improving Data and Safety Management Systems.

The SHSP aims to elevate the safety of pedestrians and bicyclists to the same level as motorists. In doing so, the SHSP “will begin to acknowledge walking and biking as viable transportation options that also improve health and quality of life”. The SHSP

references recent legislation addressing pedestrian safety and funding earmarked for bikeways.

Data included in the SHSP shows that Hawai'i:

- Had the second highest average annual fatality rate for bicyclists (4.5 deaths/million residents) in the country from 2001-2005. Nearly twice of the rest of the States
- There were 29 deaths from 2001-2005, representing 4 percent of all traffic-related fatalities
- Though there was no trend in the annual number of fatal injuries, the number of bicyclists involved in non-fatal crashes generally increased, from 280 to 329 in 2005.

Sixteen strategies were identified by the working group for Safeguarding Pedestrians and Bicyclists were categorized as follows:

- Legislation and Funding
- Enforcement
- Data Needs
- Transportation and Land Use Planning
- Education and Community Action

Specific strategies worth highlighting include:

- Improve data collection systems to facilitate creation and dissemination of standardized data set to track bicycle and pedestrian activity, use levels, injuries and fatalities
- Update zoning codes and streets design standards to support best practices for pedestrian and bicycle facilities and safety
- Identify and prioritize bike and pedestrian facilities requiring upgrades and improvements in accordance with Bike Plan Hawaii 2003 and AASHTO guidelines, and begin phased implementation
- Incorporate designs that accommodate walking and bicycling in land use planning and development policies and practices
- Increase the visibility of bicyclist and pedestrian through use of lighting, signage, and advanced technology at intersections and crosswalks

A voluntary Core Committee will continue to act as a clearinghouse related to the SHSP, disseminating information to decision makers at all levels and overseeing implementation, monitoring and evaluation.

2.1.6 Bikes on TheBus

The City & County of Honolulu's 525 buses and 6 community access vehicles have at least a 2-position bike rack on the front. 55 buses have a 3-position bike rack installed. The 3-position bike racks were found to be too heavy and interfere with the windshield wipers when certain bikes were placed on the rack. As a result, TheBus stopped purchasing them and are currently changing to a lighter 3-position model. On average TheBus carries 1,000 bicycles per month (J. Burke, Personal Communication).

2.2 Policies

The City and County of Honolulu's planning guidance comes from three major sources: the Charter, the General Plan, and the eight sustainable community plans (SCP) and development plans (DP). Each are reviewed below followed by an acknowledgment of the recent safety resolutions passed by many of O'ahu's Neighborhood Boards.

2.2.1 Revised Charter of Honolulu (RCH)

The RCH is the governing document for the City & County of Honolulu. The 2005-2006 Charter Commission placed 12 questions before voters including Charter Question #8: Pedestrian- and Bicycle-Friendly Honolulu; Bikeways (<http://www.co.honolulu.hi.us/chc/question8.htm>). The proposed amendment received strong (72%) support of the voters. The approved RCH revision is as follows (underscored text is new):

Amend RCH Section 6-1703:

Section 6-1703. Powers, Duties and Functions --

The director of transportation services shall:

- (a) Plan, operate and maintain transportation, including transit and bikeway, systems to meet public transportation needs, in accordance with the general plan and development plans, and advice on the design and construction thereof.
- (b) Locate, select, install and maintain traffic control facilities and devices.
- (c) Provide educational programs to promote traffic safety.
- (d) Promulgate rules and regulations pursuant to standards established by law.

Add new section to RCH Article VI Chapter 17:

Section 6-17. Pedestrian and Bicycle Friendly City –

It shall be one of the priorities of the department of transportation services to make Honolulu a pedestrian- and bicycle-friendly city.

2.2.2 Honolulu General Plan

The Honolulu General Plan

(<http://www.honoluludpp.org/planning/OahuGenPlan.asp>) provides a comprehensive set of objectives and policies which set forth the long-range aspirations of O'ahu's residents, and strategies and action steps necessary to achieve them. The transportation objectives and policies address the need for a balanced system for the pedestrian, bikeway, public transportation, and the automobile. Relevant policies are summarized below:

Transportation and Utilities Objective A:

To create a transportation system which will enable people and goods to move safely, efficiently, and at a reasonable cost; serve all people, including the poor, the elderly, and the physically handicapped; and offer a variety of attractive and convenient modes of travel.

Policy 1: Develop and maintain an integrated ground-transportation system consisting of the following elements and their primary purposes:

- c. Bikeways-for recreational activities and trips to work, schools, shopping centers, and community facilities; and
- d. Pedestrian walkways for getting around Downtown and Waikiki, and for trips to schools, parks, and shopping centers.

Policy 9: Promote programs to reduce dependence on the use of automobiles.

Policy 10: Discourage the inefficient use of the private automobile, especially in congested corridors and during peak-hours.

Policy 11: Make public, and encourage private, improvements to major walkway systems.

2.2.3 Development and Sustainable Community Plans

The City and County of Honolulu's Development Plan (DP) program managed by the Department of Planning and Permitting provides a framework for implementing General Plan objectives and policies for the growth and development of O'ahu at a regional level. The DP program establishes eight geographical planning areas, six of which are designated Sustainable Communities Plan (SCP). These plans articulate conceptual, long-range visions, and policies for regional land use, public facilities and infrastructure investment, and include land use maps intended to illustrate the policy statements articulated in the DPs and SCPs. The ongoing DP/SCP revision status is summarized in the following table.

DP/SCP Revision Status

Plan	Adopted	Status
<u>Ko'olau Loa SCP</u>	Adopted Ord. 99-72 Effective 2/14/00	5-year Review underway. Expected to be completed late 2008.
<u>North Shore SCP</u>	Adopted Ord. 00-15 Effective 7/9/00	5-year Review underway. Expected to be completed late 2008.
<u>East Honolulu SCP</u>	Adopted Ord. 99-19 Effective 7/27/99	5-year Review underway. Expected to be completed early 2009.
<u>Ko'olau Poko SCP</u>	Adopted Ord. 00-47 Effective 8/25/00	update schedule pending.
<u>Wai'anae SCP</u>	Adopted Ord. 00-14 Effective 7/9/00	5-year Review underway. Expected to be completed early 2009.
<u>Central O'ahu SCP</u>	Adopted Ord. 02-62 Effective 2/18/03	5-year Review underway. Expected to be completed early 2009.
<u>Ewa DP</u>	Adopted Ord. 97-49 Effective 10/21/97	5-year Review underway. Expected to be completed early 2009.
<u>Primary Urban Center DP</u>	Adopted Ord. 04-14 Effective 6/21/04	update schedule pending

The table on the following pages represents a compilation of bicycle-related information contained in the DPs and SCPs. The table includes relevant excerpts of planning principles, guidelines, and maps of existing and future bike plans, paths and bikeways, and/or bicycling in general. The 'Sections' column lists which section of the Plans is dedicated to bikeways or bicycles (if one exists).

Common themes include development of paths/lanes for bicycle travel, safe lanes on roadways for inclusion of bicycles, and creating access to and linkages between and within communities, commercial areas, and recreation areas.

2.2.4 Neighborhood Board Bicycle Related Resolutions

O'ahu's 35 Neighborhood Boards act in advisory capacity to City agencies and Legislators and form an important interface for citizen involvement in County government. Due to the concerted effort of a group of concerned citizens led by Ms. Natalie Iwasa, Bicycle Safety Resolutions have recently been passed by a number of O'ahu's Neighborhood Boards.

Summary of SCP and DP Guidelines, Policies, Planning Principles, and Facility Recommendations

Document	Sections	Guidelines	Policies	Figures
<u>Ko'olau Loa SCP</u>	Section 4.1.1.3 Bikeway System (p.4-2)	Provide an integrated system of bikeways as a means of transportation (p.3-16).	Biking is encouraged as an ecologically compatible outdoor recreational opportunity (p.P-5)	<u>Public Facilities Map</u> shows proposed bike path following Kam highway the entire length of the moku
		Roadways should create an inviting environment for biking (p.3-2).		
		Develop and provide for accessible pathways to facilitate bicycle access to and between new or existing parks, commercial areas, residential areas, consider use of the OR&L tracks where feasible (pp 3-16, 3-17).		
		Commercial Areas should be designed and also provide facilities which promote bicycle access, including secure and visible bicycle parking (p.3-34).		
<u>North Shore SCP</u>	4.1.3 Bikeway system lists current State Bike Plan from '94 (p.4-3)	Provide and promote an integrated system of pedestrian paths/bikeways linking the parks, schools, recreation areas, and town centers (p.3-37).	Enhance opportunities for a wide range of recreational activities by securing convenient public access, including bikeways (p.1-2).	Exhibit 3.3 (p.3-38) shows Proposed Waialua-Haleiwa Pedestrian Bikeway System
		Bicycle travel should be encouraged, particularly to reach neighborhood destinations such as schools, parks and convenience stores (p.3.45).	Bicycle and Pedestrian-Oriented Residential Streets: Residential areas should provide safe streets for walking and biking between and within communities (p.3.45).	Exhibit 4.1 North Shore Bikeway System: existing and proposed bike lanes, route, paths, and ways (p.4-5).

Document	Sections	Guidelines	Policies	Figures
		Utility corridors and greenways located in settlement areas serve as pedestrian or bicycle routes. Permit the use of utility easements for pedestrian and bicycle routes (p.3-18).	Commercial area site design should take into account bicycle access (p.3-57).	
		North Shore bikeway system includes the Ke Ala Pupukea Bike Path; a coastline route with links to Central Oahu, the Koolauloa District, and around Kaena Point to Waianae; a route through Haleiwa Town; a leg along the Joseph P. Leong Highway; and along Haleiwa and Waialua Roads. Additional potential bikeways, including one along Paalaa Road in Haleiwa, and three in Waialua are envisioned (p.4-4).	Transportation system should provide opportunities and support for convenient and safe pedestrian and bicycle travel. Bikeway development should be coordinated with private landowners. (p.4-7).	<u>Public Facilities Map</u> shows existing and proposed bikeways for entire moku
<u>Ko'olau Poko SCP</u>	Koolaupoko Trail Complex is a proposed 15-mile system of interconnected trails, with opportunities for mountain biking (p.3-2).	Transportation system improvements should be directed towards alternative travel modes, including bicycle facilities (p.2-14).	All uses should encourage bicycle travel, particularly to reach neighborhood destinations such as schools, parks, and convenience stores (p.3-31).	<u>Public Facilities Map</u> shows existing and proposed bikeways for entire moku
	Section 4.1.3 Bikeway System (pp.4-3 - 4-4).	Reduce sprawl and help bicycling be a feasible and attractive form of transportation (p.2-20).	Pedestrian and bicycle access should be provided at parks, and at Neighborhood Commercial Centers and Community Commercial Centers (pp.3-24, 3-37).	Figure 4-1:Existing and Proposed Bikeways in Koolaupoko (p.4-5)
		Open Space Shoreline Areas should have secured bicycle racks where the access point adjoins an existing or planned bikeway (p.3-8).	Neighborhood/Community commercial areas, Regional Town centers, Military Uses should design and place bicycle racks to provide security and be visible and readily accessible from the street entry (pp.3-40, 3-41, 3-45, 3-47).	

Document	Sections	Guidelines	Policies	Figures
		Roadways should serve as linear open space features for biking (p.3-2).		
		Provide safe access through golf courses, as necessary, for regional continuity of pedestrian and bicycle systems (p.3-15).	Expand the bikeway network by implementing the proposals in the State of Hawaii bikeway master plan and adding bike facilities along residential streets (p.4-7).	
		Existing bikeway system is discontinuous bike lanes, bike routes and bike paths. Create an interconnected grid through the more populated areas and links to East Honolulu to enhance the potential for bike travel for short commuting and incidental trips (p.4-4).		
<u>East Honolulu SCP</u>	4.1.3 bikeway system (p.4-3).	Create compact development and reduce reliance on the automobile by making bicycling more feasible and attractive as a mode of travel (p.2-3).	Roadways should be attractively landscaped to serve as linear open space features and create a more inviting environment for walking, jogging and biking (p.3-2).	Map A-3 <u>Public Facilities</u> shows existing and future bike lanes and routes
		Provide safe access through golf courses, for regional continuity of pedestrian and bicycle systems (p.3-6).	Link recreational attractions (including the Marina) with surrounding areas through the use of connecting roadways, bikeways, walkways, etc (pp.3-11, 3-16.)	Table 4-2 provides existing and proposed bikeways in East Honolulu (p.4-5).
		Bicycle racks should be designed to provide security and be visible from the street entry (pp.3-30, 3-31, 3-32).	Integrate planned improvements to the drainage system into the regional open space network by emphasizing the use of retention basins, creation of passive recreational areas, and recreational access for pedestrians and bicycles (p.4-13).	Figure 4-1 East Honolulu Bikeway System (p.4-4).

Document	Sections	Guidelines	Policies	Figures
		Community parks, residential areas, and commercial centers should have pathways to facilitate bicycle access (pp.3-19, 3-29).		
<u>Wai'anae SCP</u>		Commercial and town centers should have bike racks at appropriate places (p.3-46).	A thorough study of safety improvements should be undertaken for Farrington Highway in Waianae, including dedicated bike lanes (p.4-4).	<u>Public Facilities Map:</u> conceptual alignment for dedicated bicycle lanes on Farrington Highway; major valley roads designated and improved to accommodate bicycle routes.
		Rural Community Commercial Centers should encourage pedestrian and bicycle circulation (p.3-43).	Encourage plans and programs for other modes of transportation, including bikeways (p.4-6 – 4-7).	A 1 <u>Land Use Map:</u> shows proposed improvements for Farrington Highway, including bikeways
		A safe bicycle route along the entire Waianae Coast, and up some of the major valley roads, at least as far as the concentrations of urban/suburban development (p.4-3).	Consider creative use of existing unutilized transportation corridors such as the old OR&L railroad right-of-way for a multiuse path (p.4-7).	
		Planned drainageway improvements should be integrated into the regional open space network by providing for access for pedestrians and bicycles (p.4-15).		

Document	Sections	Guidelines	Policies	Figures
<u>Central O'ahu SCP</u>	Section 4.1.4 Bikeways (p.4-10).	Establish a network of bicycle paths and designated bicycle routes along major traffic corridors in order to improve safety and convenience and encourage increased use of bicycles and reduce the need for automobile use (p.3-47).	Design parks to link them with surrounding areas through the use of connecting roadways, bikeways, walkways, landscape features or architectural design (p.3-14).	Exhibit 4-1 Central O'ahu Bikeway System shows existing and future bike paths and lanes (p.4-11).
		Connect residential areas, parks, and commercial areas with an open space network of linear greenways with canopy trees to shade bikeways (pp.3-9, 3-61).	Protect historic/cultural resources with 50 ft setbacks from the OR&L right-of-way, unless related to the right-of-way for open space and bikeway purposes (p.3-26).	Map A-1 <u>open space map</u> & Map A-3 <u>public facilities map</u> show Historic Railway/Bikeway Corridor
		Golf course design should take into account trails and bike routes (p.3-8).	Commercial centers should promote pedestrian, bicycle and transit access (p.3-66).	
		Pearl Harbor Historic Trail should include a major bike path east-west along the OR&L right-of-way (with branch routes to the Waipahu Cultural Garden and Leeward Community College). Other major bike paths, to run north-south, should include Kunia Road between Farrington and H-1 Freeway, Managers Drive/Mokuola Street, Waipio Uka Street, and Lanikuhana Avenue between Kamehameha Highway and Meheula Parkway (p.4-10).	Encourage pedestrian and bicycle travel, particularly to reach neighborhood destinations such as schools, parks and convenience stores (p.3-56).	
		Bicycle racks should be designed to provide security and be visible from the street entry (pp.3-67, 3-70).	Provision of supporting facilities and amenities for pedestrian, bicycle, and public transit use. Bicycle racks at commercial centers, bicycle storage facilities at employment centers will be encouraged (p.4-13).	

Document	Sections	Guidelines	Policies	Figures
		<p>Bike lanes should be provided on Waipahu Street, the Village Park connector between Village Park and Waipahu, Hikimoe Street, Waipahu Depot Road, Meheula Parkway, Kilani Avenue, and California Avenue. In addition, Kamehameha Highway, Kunia Road north of H-1, and Wilikina Drive should be designated as bike routes (p.4-10).</p>		
<p><u>Ewa DP</u></p>	<p>Section 4.1.5 Bikeway System (p.4-11).</p>	<p>An open space network will provide access along the entire Ewa coastline by road or a network of pedestrian paths and bikeways (p.2-2).</p>	<p>Bicycle parking facilities should be located as close as possible to entry of commercial, recreation facilities, within view (pp.3-14 3-63, 3-65).</p>	<p>Exhibit 4.1: Ewa Bikeway System Existing and future bike lanes and bike path (p.4-12).</p>
		<p>Ewa will be developed with a transportation system which encourages people to walk and bike, reducing the need for use of the automobile (p.4-10).</p>	<p>OR&L Historic Railway should have a parallel paved bikeway along the length of the rail route, either within or adjacent to the right-of-way, even in those sections where the railroad itself is not operational. New development should be set back a minimum of 50 feet on either side of the OR&L right-of-way, unless it is consistent with the use of the right-of-way for open space and bikeway purposes (p.3-23).</p>	<p><u>Open Space Map</u> shows bikeway corridor</p>

Document	Sections	Guidelines	Policies	Figures
		<p>Exclusive bike lanes should be provided along major roadways within the City, and be connected to the region's bikeway system. The rights-of-way for major arterials and major collector streets should be designed to include bikeways. Major arterials should have separate bike paths, and major collectors should have bike lanes. Suggested width for major arterials, including right-of-way and planting strips, is 120 feet wide and for major collectors is 100 feet wide. Canopy trees should be planted to shade the sidewalk/bike path areas (p.3-56).</p>	<p>Provide safe, easy, and efficient access for bicycle movement between each of the residential districts, the open space areas, and recreational amenities.</p>	<p><u>Public Facilities Map</u> shows existing and future bike lanes and bike paths</p>
		<p>The Kapolei Area Bikeway Plan (1991) establishes a comprehensive bikeway network to serve the Ewa Plain. The network would include 56 miles of bikeway facilities, including bike paths (separated from the roadway), bike lanes (four- to six-foot lanes) and bike routes (shared curbside vehicle lane, with minimum 12-foot width) (p.4-11).</p>		
<p><u>PUC DP</u></p>	<p>3.5.1.5 Bicycles (p.3-57).</p>	<p>Numerous bikeways and pedestrian-friendly streets should connect major parks and open spaces (p.2-2).</p>	<p>Streets should accommodate automobiles along with transit vehicles, bicycles and pedestrians (p.2-6).</p>	<p>Figure 3.16, Bicycle Links I "Lei of Parks Concept Plan (p.3-59).</p>
		<p>The historic OR&L bikeway and promenade links extensive parks (p.2-6).</p>	<p>Pathways should connect existing parks, hiking trails and bikeways between neighborhoods or major land uses (p.3-6).</p>	
		<p>Well-planned bicycle routes make commuting by bicycle safe and convenient, and cyclists can traverse the PUC from Pearl City to Kahala. Bike routes also contribute to increased recreational bicycling as well (p.2-6).</p>	<p>Support development of shared-use paths and parks along canals and streams (p.3-56).</p>	

Document	Sections	Guidelines	Policies	Figures
		Shops, parks and schools are located within walking or bicycling distance of most residents (p.2-2).	Facilitate improvements to bicycle circulation throughout the PUC (p.3-45).	
		The network of streets, shorelines, and streams can become linear extensions of parks to support and promote bicycling (p.3-9).	Improve drainage system into the open space network by creation of recreational access for bicycles (p.4-10).	
		Create livable neighborhoods with business districts, parks and plazas, and walkable streets integrated and encourage alternative forms of mobility (including bicycling) (p.3-15).		
		To encourage bicycle ridership, the City has employed a Bicycle Coordinator, installed bike racks on all its buses and on many of Honolulu's streets, and has planned and partially developed a system of bikeways. There is currently a total of 24.8 miles of bikeways within the Primary Urban Center. The longest is the Pearl Harbor Bike Path, a shared-use pathway that extends from near Aloha Stadium to Waipio Peninsula, also referred to as the Pearl Harbor Historic Trail (p.3-58).		

3. Standards and Guidelines

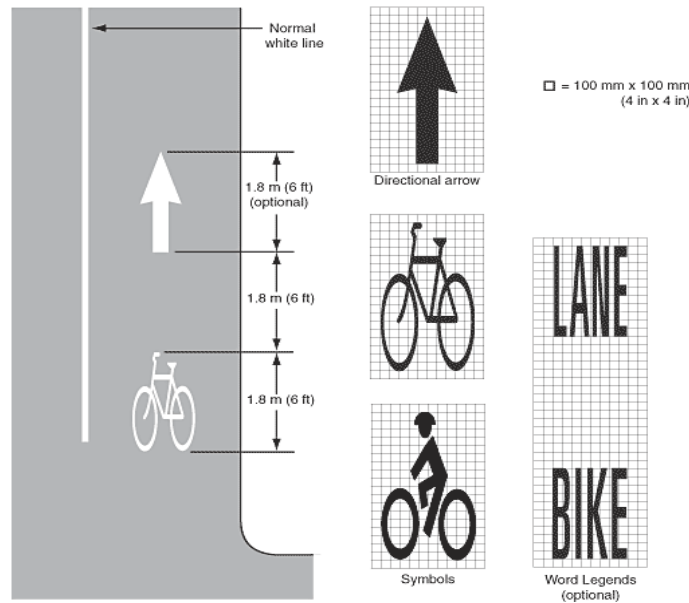
This section review standards and guidelines for bicycle facilities from the following documents: the *Manual on Uniform Traffic Control Devices* and the *Guide for the Development of Bicycle Facilities*.

3.1 Manual on Uniform Traffic Control Devices: 2003 Edition. Federal Highway Administration, US Department of Transportation

The FHWA adopted the current edition of the MUTCD in 2003 (<http://mutcd.fhwa.dot.gov/HTM/2003/html-index.htm>). Part 9 of the Manual (Traffic Controls for Bicycle Facilities) describes signs, signals, and markings for bicycle facilities (including shared use paths). This section was significantly expanded and improved over the 1988 edition with some additional updates over the millennium (2000) edition. Some of the most critical elements of Part 9 include:

- The definitions used in the Manual and the signs and markings are consistent with the 1999 AASHTO Guide for the Development of Bicycle Facilities
- Smaller sign sizes for use on shared use paths (trails)
- The bicycle lane sign no longer includes the diamond symbol
- The bicycle crossing warning sign may be used in conjunction a "Share the Road" plaque

Figure 9C-6. Example of Optional Word and Symbol Pavement Markings for Bicycle Lanes



- The bicycle

crossing warning sign may have a fluorescent yellow-green background color

- All new graphics showing appropriate placement and use of signs and markings
- Guidance on the appropriate use of STOP and YIELD signs at trail/roadway intersections
- Bike lane symbol guidance: diamond symbols cannot be used for bike lanes, but there are two symbols that can be used to mark bike lanes—a bike without a rider and a bike symbol with a helmeted rider. Directional pavement arrows are optional in the marked lane to discourage wrong way riding and to help educate bicyclists on the rules of the road for riding in the street. BIKE LANE word legends are also optional for marking bike lanes (see figure 9C-6). Per Section 9C-04 of the MUTCD, there is no need for bike lane symbols, but if used, they the symbols shall be placed immediately after intersections and at other locations, as needed.
- New guidance on accommodating bicyclists in temporary traffic control areas (Section 6G.05)
- Prohibition on through bike lanes to the right of turn lanes (Section 9C.04), and prohibiting bike lanes with circulating roadways or roundabouts (Section 9C.04)
- On-street bike lanes with multiple right turn lanes are discouraged, and posts or other raised markers should not be used to separate bike lanes from other travel lanes (Section 9C.04)

Much of the new information in the Manual was developed and recommended by the bicycle technical sub-committee of the National Committee on Uniform Traffic Control Devices (NCUTCD). The NCUTCD advises the Federal Highway Administration on the content of the Manual.

Additional information on signs and markings that relate to bicycling can be found throughout the MUTCD Manual. For example, Part 2 of the Manual addresses Guide signs, Warning signs, and Regulatory signs (such as STOP signs). Part 6 covers Work Zones. The principles of work zones signs for other uses may be applied to bicycle-specific signs, e.g. work zone signs use an orange background, and thus any signs created for bicycle detours should also use an orange background (Pedestrian and Bicycle Information Center website).

The MUTDC Manual is in the process of a comprehensive update. A 7-month period is being provided for comments to proposed revisions, which will close on July 31, 2008. The proposed MUTCD text, figures, and tables are also available for public review and comment at http://mutcd.fhwa.dot.gov/resources/proposed_amend/index.htm.

3.2 Guide for the Development of Bicycle Facilities. 1999. American Association of State Highway and Transportation

Officials. Prepared by the AASHTO Task Force on Geometric Design

AASHTO's *Guide for the Development of Bicycle Facilities*

(<http://www.wsdot.wa.gov/Bike/PDF/Bikebook.pdf>) is recognized in almost all literature pertaining to bicycle facilities as one of the premier guides for information on the development of new bicycle facilities. The 1999 edition is an update of an earlier version (1991). The purpose of the Guide is stated below:

“This guide is designed to provide information on the development of facilities to enhance and encourage safe bicycle travel. The majority of bicycling will take place on ordinary roads with no dedicated space for bicyclists. Bicyclists can be expected to ride on almost all road ways, as well as separated shared use paths and even sidewalks, where permitted to meet special conditions.

This guide provides information to help accommodate bicycle traffic in most riding environments. It is not intended to set forth strict standards, but, rather, to present sound guidelines that will be valuable in attaining good design sensitive to the needs of both bicyclists and other highway users.”

In addition, the Guide continues to emphasize the fact that “facilities are only one of several elements essential to a community’s overall bicycle program. Bicycle safety education and training, encouraging bicycle use, and the application and enforcement of the rules of the road as they pertain to bicyclists and motorists should be combined with facilities to form a comprehensive community approach to bicycle use.”

The publication also continues to focus on information pertaining to planning, design, and operation and maintenance of bicycle facilities, taking into account important factors including the bicycle, bicycle user, types of facilities, existing conditions, improvement plans and education programs. The chapter on design is focuses on shared roadways, signed shared roadways, bike lanes, shared use paths and other design considerations that include interchange areas, roundabouts, traffic signals, and parking.

3.3 Complete Streets

Complete Streets (<http://www.completestreets.org/>) is a national coalition to encourage the development of policies at the Federal, State and local levels that promote the following principles:

- Complete streets are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and transit riders of all ages and abilities must be able to safely move along and across a complete street.
- Creating complete streets means changing the policies and practices of transportation agencies.

- A complete streets policy ensures that the entire right-of-way is routinely designed and operated to enable safe access for all users.
- Transportation agencies must ensure that all road projects result in a complete street appropriate to local context and needs

Elements of a sound Complete Streets Policy include:

- Specifies that 'all users' includes pedestrians, bicyclists, transit vehicles and users, and motorists, of all ages and abilities.
- Aims to create a comprehensive, integrated, connected network.
- Recognizes the need for flexibility: that all streets are different and user needs will be balanced.
- Is adoptable by all agencies to cover all roads.
- Applies to both new and retrofit projects, including design, planning, maintenance, and operations, for the entire right of way.
- Makes any exceptions specific, and establishes clear procedure that requires high-level approval for exceptions.
- Directs the use of the latest and best design standards.
- Directs that complete streets solutions fit in with context of the community.
- Establishes performance standards with measurable outcomes.

Implementation of an effective Complete Streets policy should prompt transportation agencies to:

- Restructure their procedures to accommodate all users on every project.
- Re-write their design manuals to encompass the safety of all users.
- Re-train planners and engineers in balancing the needs of diverse users.
- Create new data collection procedures to track how well the streets are serving all users.

Currently, no Complete Streets policies have been implemented nor organized around in the State of Hawai'i. Numerous cities around the country have adopted Complete Streets Policies and Guides ([http://www.completestreets.org/completestreets/Tab1%20Early%20Success%20Stories/Complete Streets Policies.pdf](http://www.completestreets.org/completestreets/Tab1%20Early%20Success%20Stories/Complete%20Streets%20Policies.pdf)).

3.4 Leadership in Energy and Environmental Design

Leadership in Energy and Environmental Design (LEED) is a certification process that rates a building's environmental friendliness. The popularity of the program is growing with a growing number of public and private developers seeking LEED certification every year. Projects are awarded points for their 'green' environmentally friendly attributes, and when enough points are earned, the building attains a LEED rating. One of the LEED sections 'Sustainable Sites,' gives credit for providing "Bicycle Storage and Changing Rooms" (Alternative Transportation Credit 4.2). In order to receive this credit, the project must "provide secure bicycle racks and/or storage (within 200 yards of a building entrance) for 5% or more of all building users (measured at peak periods), AND provide shower and changing facilities in the building, or within 200 yards of a building entrance, for 0.5% of Full-Time Equivalent (FTE) occupants. Or, for residential buildings, provide covered storage facilities for securing bicycles for 15% or more of building occupants in lieu of changing/showing facilities."

4. Laws and Regulations

4.1 Federal

4.1.1 The Safe, Accountable, Flexible, Efficient Transportation Equity Act- A Legacy for Users (SAFETEA-LU)

SAFETEA-LU (<http://www.fhwa.dot.gov/safetealu/index.htm>) was passed into law in August 2005. It continued the programs for bicycling and walking established in earlier federal transportation legislation, added several new directives, increased funding for some programs, and gave other programs more flexibility. Key provisions in SAFETEA-LU regarding bicycling and walking include:

- Provided \$612 million over five years for a new Safe Routes to School (SRTS) program designed to make it safer for children to bike and walk to school
- Increased funding for the Recreational Trails Program (RTP), which requires a minimum of 70 percent of the trails be suitable for bicycling and walking
- Increased Congestion Mitigation and Air Quality (CMAQ) program funding by nearly 26 percent to help communities support less polluting non-motorized transportation modes like bicycling and walking
- Created the new Highway Safety Improvement Program (HSIP) to provide more funding for bicycling and pedestrian safety
- Created a non-motorized transportation pilot program in four separate cities to fund non-motorized transportation infrastructure projects to study the extent to which bicycling and walking can represent a major portion of the transportation solution in certain communities
- Requires that, prior to approval of a TIP, a listing of "investments in pedestrian walkways" and "bicycle transportation facilities" obligated from federal funds during the preceding needs to be made public. This requirement increases accountability of bicycle-related projects and regional priorities and can be used to inform future TIP decisions.

4.1.2 Safe Routes to School (SRTS), FHWA 2005

The SRTS program (<http://safety.fhwa.dot.gov/saferoutes/>) was established with the passage of SAFETEA-LU. The program's purpose is to enable and encourage children, including those with disabilities, to walk and bicycle to school; to make walking and bicycling to school safe and more appealing; and to facilitate the planning, development and implementation of projects that will improve safety, and reduce traffic, fuel consumption, and air pollution in the vicinity of schools.

The Program is funded at \$612 million and provides Federal-aid highway funds to State Departments of Transportation (DOT's) over five Federal fiscal years in

accordance with a formula [hyperlink to formula] specified in the legislation. These funds are available for infrastructure and non-infrastructure projects, and to administer SRTS programs that benefit elementary and middle school children in grades K-8.

Three major initiatives required by SRTS legislation include:

- Implement SRTS Program nationwide – also requires State DOT's to fund a full-time position of coordinator of the State's SRTS program
- Create Clearinghouse – includes grants to national nonprofit engaged in supporting SRTS clearinghouse, developing information and educational program on SRTS and providing technical assistance and strategies for successful SRTS programs [hyperlink to clearinghouse]
- Establish Task Force and submit report to Congress – task force composed of leaders in health, education and transportation to develop a strategy for advancing SRTS nationwide

Funding for SRTS is by contract authority and will remain available until expended. Each year after a \$3 million deduction for administrative expenses, the Secretary will apportion funds to States based on their relative shares of total enrollment in primary and middle schools, but no State will receive less than \$1 million. Funds are administered by State DOT's to provide assistance to State, local, and regional agencies, including non-profit organizations. The Federal share is 100%.

In 2007, the State appointed an interim SRTS Coordinator and has entered in Phase 1 of administering SRTS funds.

Eligible use of funds includes infrastructure related projects such as the planning, design, and construction improvements that will substantially enhance the ability of students to walk and bicycle to school. Infrastructure related projects include: sidewalk improvements, pedestrian and bicycle crossing improvements, secure bicycle parking facilities, etc. In addition, each State must set aside from its SRTS annual apportionment not less than 10 percent and not more than 30 percent of the funds for non-infrastructure related activities to encourage walking and bicycling to school, such as: public awareness campaigns and outreach to press and community leaders, student sessions on bicycle and pedestrian safety, health, and environment and funding for training, volunteers, and managers of SRTS programs.

Implementation of the SRTS Program has been assigned to the FHWA's Office of Safety which will be working in collaboration with FHWA's Offices of Planning and Environment (Bicycle and Pedestrian Program) and the National Highway Traffic Safety Administration (NHTSA) to establish and guide the program.

The National Center for Safe Routes to School (<http://www.saferoutesinfo.org/about/>) is maintained by the University of North

Carolina Highway Safety Research Center with funding from FHWA. It assists communities in enabling and encouraging children to safely walk and bike to school. The Center strives to equip SRTS programs with the knowledge and technical information to implement safe and successful strategies.

4.1.3 Related federal-level policies/laws

Other federal-level policies also relate to bicycle and pedestrian transportation:

Context Sensitive Solutions (CSS). CSS (<http://www.contextsensitivesolutions.org/>) is a national initiative defined as a collaborative, interdisciplinary approach that involves all stakeholders to develop a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility. CSS is an approach that considers the total context within which a transportation improvement project will exist." is to improve the environmental quality of transportation decision making by incorporating context sensitive solution principles in all aspects of planning and the project development process.

National Environmental Policy Act (NEPA). This Act provides protection for the human environment by requiring federal agencies to integrate environmental values into their decision-making processes by considering the environmental impacts of their proposed actions and reasonable alternatives to those actions. To meet NEPA requirements, federal agencies must prepare a detailed statement known as an Environmental Impact Statement (EIS) for all major federal projects.

The Clean Air Act (CAA). This federal legislation (<http://www.epa.gov/air/caa/>) sets requirements for air pollution prevention and control. The improvement of bicycle and pedestrian transportation, as nonpolluting transportation modes, supports many of the objectives of the CAA.

4.2 State and County

4.2.1 Use of Highway Fund for Bikeways Act 286 (§264-18, HRS)

The 2007 Legislature passed Act 286(http://www.capitol.hawaii.gov/hrscurrent/Vol05_Ch0261-0319/HRS0264/HRS_0264-0018.htm) requiring that at least 2% of eligible federal funds, and in addition, other state highway fund moneys as available, shall be expended to:

1. Establish multi-use paths, bicycle paths, and bicycle lanes; and
2. Install signage and safety devices along bikeways;

Act 286 also requires that the State DOT shall include the bicycling community in a public involvement process to determine the location of multi-use paths, bicycle

paths, bicycle lanes, and installation of signage and safety devices along bikeways. In addition, planning for any mass transit system shall include appropriate accommodation for bicycle lanes, bikeways, and bicycle routes, including bicycle racks on mass transit vehicles, to enable mass transit users to connect conveniently by bicycle to transit stations and bus stops.

4.2.2 Statewide Traffic Violations (§291-34, HRS)

No motor vehicle or other power vehicle having an overall width greater than nine feet, including load, shall be operated or moved upon any public road, street, or highway within the State, except as hereinafter provided (maximum vehicle dimensions are an important consideration in the bike facility planning process).

4.2.3 Statewide Traffic Code (§291C, HRS)

Chapter 291C provides all definitions associated with: bicycle, bicycle lane, bicycle path, bicycle route, bikeway, driver, highway, roadway, vehicle, and toy bicycle. Part XIII of Chapter 291C reviews the regulations applying to the operation of bicycles and play vehicles. Basic rights and responsibilities provided in the rules are excerpted below.

- **§291C-142 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...
- **§291C-145 Riding on roadways and bikeways.** (a) Every person operating a bicycle upon a roadway at a speed less than the normal speed of traffic moving in the same direction at such time shall ride as near to the right-hand curb, on the edge of the roadway, or on the shoulder off of the roadway as practicable...

4.2.4 Honolulu Traffic Code, Chapter 15, ROH

The Traffic Code is codified in Chapter 15 of the ROH. The following terms are defined:

- "Bicycle lane" means that portion of a roadway set aside for the use of either one-way or two-way bicycle traffic. (ROH, 15-2.5)
- "Bicycle path" means a pathway for bicycles and pedestrians, physically separated from motor traffic. (ROH, 15-2.5)
- "Bikeway" is a general term including bicycle lanes or bicycle paths. (ROH, 15-2.5)

Section 15-4.6 discusses the use and restrictions of bicycles in Waikiki. Section 15-13.9(d) specifies rules related to traffic lane markings, designations and terminations.

Article 18 covers the Operation of Bicycles and Play Vehicles including Section 18.7 which prohibits bicycle riding on sidewalks within a business district (such as Downtown, and Waikiki). In areas other than business or prohibited districts, bicycles may be ridden on sidewalks provided the speed is less than 10 mph. The bicycle operator must yield the right-of-way to pedestrians, giving an audible signal before overtaking them.

Design of new multiple lane highways or streets constructed after December 31, 1994. Facilities that are designed by the City and County of Honolulu, or other agencies or individuals with the intent of dedicating these facilities to the City and County of Honolulu, must design the curb lane with a width of at least 14 feet. This design width is consistent with guidelines developed by AASHTO to better accommodate both bicyclists and motor vehicles in the same lane.

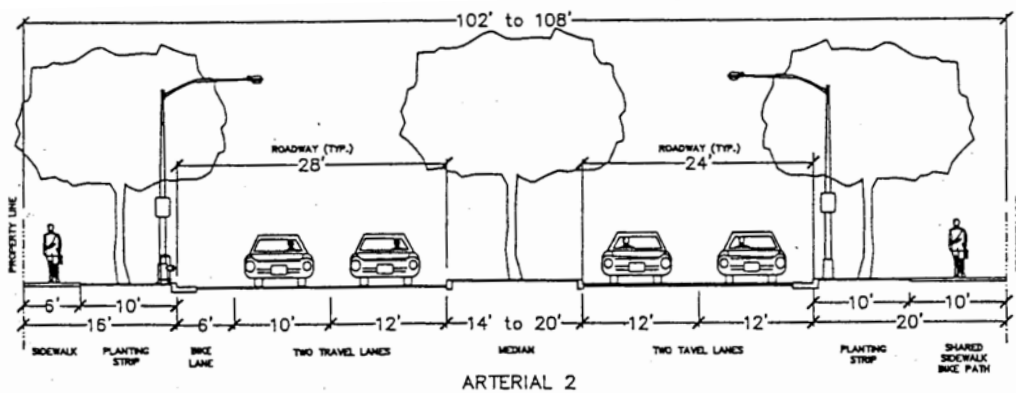
4.2.5 Honolulu Subdivision Rules and Regulations, Chapter 22 ROH

The Subdivision Rules and Regulations of the City and County of Honolulu are codified in Chapter 22 of the ROH. These rules and regulations provide the basis for which land may be subdivided into smaller parcels, or consolidated into larger parcels, and include requirements to provide curbs and gutters for streets, water lines, sewer lines, etc.

Streets are required to be constructed in accordance with standards and specifications of the Director and Chief Engineer of the Department of Public Works and the Director of the Department of Transportation Services (see below).

4.2.6 Honolulu Subdivision Street Standards

The City & County of Honolulu adopted Subdivision Street Standards in 2001 “to promote greener and more people-oriented streets throughout the City, provide a greater variety of street types, and create more opportunities for trees within City rights-of-way and in future developments.” In addition to defining street types, volume and components, the standards indicate what types of streets require bicycle lanes, the width of the required lanes and when bicycle paths may be substituted for bicycle lanes.



4.3 Environmental Regulations

This section reviews the *Hawaii Revised Statutes* (HRS) and the *Revised Ordinances of Honolulu* (ROH) as they apply to environmental assessments and shoreline management.

4.3.1 Environmental Impact Statements (Chapter 343 *Hawaii Revised Statutes*)

Chapter 343, HRS is the State of Hawai'i law that regulates the preparation of environmental impact documents, which includes a listing of the types of projects ("triggers") that require assessment under the Chapter. One administrative category of action which triggers the requirements of Chapter 343, HRS involves the use of state or county lands or funds:

"The use of state or county lands or the use of state or county funds, other than funds to be used for feasibility or planning studies for possible future programs or projects which the agency has not approved, adopted, or funded, or funds to be used for the acquisition of unimproved real property; provided that the agency shall consider environmental factors and available alternatives in its feasibility or planning studies."

Projects which fall under this category must be assessed as to their significance, and a determination must be made as to whether an environmental impact statement (EIS) should be prepared. Implementing rules (Title 11, Department of Health Chapter 200) identifies classes of action which are considered exempt from Chapter 343, HRS, and allows agencies to establish a list of project types which are exempt. In compliance with this section, DTS has a list of projects approved by the State Environmental Council that are considered actions exempt from the requirements regarding the preparation of an environmental assessment, negative declaration or EIS (April 17, 1985, as amended July 16, 1986). The following types of actions, which are considered exempt, are possible types of projects that could result in new bicycle facilities:

- Modernization of an existing highway by resurfacing, widening less than a single lane width, adding shoulders, adding auxiliary lanes for localized purposes (weaving, climbing, speed changes, turning lands or turning pockets) and correcting substandard curves and intersections.
- Minor widening of less than a single lane at intersections, where displacement of residences or businesses will not occur.
- Installation of street lights; directional, informational, and regulatory signs; pavement marks; traffic signals; freeway surveillance and control system; and fire alarm systems.

Exemptions on the list may be inapplicable when the cumulative impact of planned successive actions, in the same place, over time, is significant, or when an action that is normally insignificant in its impact on the environment may be significant in a particularly sensitive environment.

4.3.2 Shoreline Management (Chapter 25 Revised Ordinances of Honolulu)

Chapter 25, ROH, Shoreline Management are regulations that apply to all lands within the County's special management area (SMA). The purpose of the regulations is to preserve, protect, and where possible, restore the natural resources of the coastal zone of Hawai'i. Any projects proposed within the SMA must be reviewed under the provisions of this chapter. Similar to Chapter 343, HRS, projects must be assessed as to their significance, and a determination made as to whether a Chapter 25 ROH environmental document should be prepared. Projects that consist of the repair and maintenance of roads and highways within existing rights-of-way, are not defined as "development," and are not subject to assessment under the chapter.

4.3.3 Shoreline Setbacks (Chapter 23, Revised Ordinances of Honolulu)

The shoreline setback rules and regulations were established to control development within a prescribed area immediately mauka of the certified shoreline. In most instances on O'ahu, the width of the setback area is 40 feet. The primary purposes of the setback regulations are to: (1) protect and preserve the natural shoreline, especially sandy beaches; (2) protect and preserve pedestrian access laterally along the shoreline; and (3) protect and preserve open space along the shoreline. Projects determined to be within the shoreline setback area are either defined as minor shoreline structures or must obtain a shoreline setback variance and be assessed under the provisions of Chapter 343, HRS as to their significance.

4.4 Honolulu High Capacity Transit Corridor Project

The City and County of Honolulu is in the process of implementing a fixed-guideway transit system (<http://www.honolulustransit.org/>). The Honolulu City Council passed Bill 79 in December 2006 (<http://www4.honolulu.gov/docushare/dsweb/Get/Document-57839/202d8smw.pdf>) which selected a fixed-guideway transit system extending from Kapolei to UH Mānoa, with a connection to Waikikī, as the Locally Preferred Alternative (LPA).

“The locally preferred alternative for the Honolulu High-Capacity Transit Corridor Project shall be a fixed guideway system between Kapolei and the University of Hawai'i at Mānoa, with a connection to Waikīkī starting at or near the intersection of Kapolei Parkway and Kalaeloa Boulevard, with an alignment as follows:

- Section I — Saratoga Avenue/North-South Road and Kamokila Boulevard, as determined by the city administration before or during preliminary engineering, to Farrington Highway;
- Section II — Farrington Highway/Kamehameha Highway;
- Section III — Salt Lake Boulevard and Aolele Street as determined by the city administration before or during preliminary engineering;
- Section IV — Dillingham Boulevard; and
- Section V — Nimitz Highway/Halekauwila Street/Kapiolani”

Bill 79 also established a General Excise Tax surcharge of 0.5% to be used for purposes of funding the operating and capital costs of public transportation and reservation of right to select technology. The LPA covers approximately 35 miles of guideway and includes about 35 potential stations.

The City is currently in the process of conducting an EIS for the LPA (public review draft expected in September 2008) and will be initiating preliminary engineering for the “First Project” segment (UH West O'ahu to Ala Moana Shopping Center) later in 2008. The First Project is approximately 20 miles long and potentially includes about 20 stations. Current plans are to have the first 6 miles of the line (UH West O'ahu to Leeward Community College) in operation by 2012, with the rest of the line between LCC and Ala Moana Center operational by 2018. Build out of the rest of the LPA would follow.

Transit Oriented Development Initiative

The Honolulu City Council is currently reviewing a bill submitted by the Department of Planning and Permitting to codify TOD in the land use Ordinance (Chapter 21-9.100 TOD Special Districts). The bill (<http://honoluluodpp.org/planning/TOD/TODFinalBill.pdf>) establishes special districts around each of the planned transit stations “to foster more livable communities that take advantage of the benefits of transit; specifically reducing transportation costs for residents, businesses and workers. While taking advantage of more efficient use of land, TOD can provide more walkable, healthier, economically vibrant communities, safe bicycling environments, convenient access to daily household needs as well as special events, and enhancement of neighborhood character, while increasing transit ridership.”

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