Appendix A

Plan and Policy Review

Appendix A: Plan and Policy Review

This summary of federal, state, regional and local plans, policies, and programs is an important first step to ensure that the State of Hawaii's Statewide Pedestrian Master Plan: builds effectively on previously adopted plans, policies, and programs; is consistent with federal and state requirements and considers regional and local plans, policies, and programs; and has guidance and structure for the development of project alternatives and solutions.

Introduction

The plan, policy, and program framework helps shape the project goals and the conceptualization and definition of project solutions. The project team reviewed federal, state, regional and local plans, policies, and programs relevant to the development of the Statewide Pedestrian Master Plan. This memo provides a summary of the relevant content of these documents and is intended to provide general guidance in developing the Statewide Pedestrian Master Plan (Plan), and not prescriptive instruction on the methodology.

Federal Plans, Policies, and Programs

Federal transportation policy and planning programs generally provide direction and funding mechanisms for statewide or regional plans or programs. Federal transportation planning policies are intentionally broad to allow states and regions the flexibility to tailor policy implementation that works for their geography and population.

The following plans, policies, and programs were examined:

- Moving Ahead for Progress in the 21st Century (MAP-21)
- Federal Highway Administration (FHWA) Transportation Alternatives Program (TAP)
- FHWA Safe Routes to School Program (SRTS)
- FHWA Recreational Trails Program (RTP)
- American Recovery and Reinvestment Act (ARRA)
- Americans with Disabilities Act of 1990 (ADA)
- US DOT Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations (Complete Streets)

Moving Ahead for Progress in the 21st Century (MAP-21)

Purpose and Content:

MAP-21 is the current Federal transportation legislation, adopted on July 6, 2012. It is a long-term highway authorization Act and guides transportation policy at the federal level. The Act includes funding for fiscal years 2013 and 2014, and outlines national goals and transportation performance targets. MAP-21 also condenses and

streamlines transportation funding programs from the previous 90 into roughly 30. The Act builds on and refines many of the highway, transit, bike, and pedestrian programs and policies established in 1991.

MAP-21 represents a transition to a performance and outcome-based state highway program. Performance measures in MAP-21 provide guidance for states to most efficiently invest Federal funds. These measures refocus investments to align with national transportation goals, increasing the accountability and transparency of the federal-aid highway program and improving project decision making.

States shall establish performance targets in coordination with metropolitan planning organizations (MPOs) and public transit operators (in areas not represented by MPOs). States may also develop targets specific to urbanized areas or rural areas.

State and metropolitan plans, including long-range plans, must describe these performance measures and targets used to assess system performance. Plans must also include how program and project selection will help achieve targets, once they are set (expected in March 2014) by the US Department of Transportation. MAP-21 includes the following national performance goals for system management:

a) **Safety** – significantly reduce traffic fatalities and serious injuries on all public roads

b) **Infrastructure Condition –** maintain highway infrastructure assets in state of good repair

c) **Congestion Reduction** – significantly reduce congestion on the National Highway System

d) **System Reliability** – improve the efficiency of the surface transportation system

e) **Freight Movement and Economic Vitality** – improve freight networks, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development

f) **Environmental Sustainability** – enhance transportation system performance while protecting and enhancing the natural environment

g) **Reduce Project Delivery Delays** – reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

MAP-21 changes the way program funding is distributed to individual states. Previously, core highway programs were able to distribute funds to states using different individual formulas. With new legislation, formulas have been eliminated and a lump sum has been authorized to fund the core programs including the National Highway Performance Program (NHPP), the Surface Transportation Program (STP), Highway Safety Improvement Program (HSIP) including Rail-Highway Crossings, Congestion Mitigation and Air Quality Improvement Program (CMAQ), and Metropolitan Planning.

A lump sum is then distributed to states proportionally (based on 2012 distributions received under the prior transportation authorization bill, the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)). States are able to distribute funds internally (using MAP-21 guidance on the percentage distribution) to core programs. States also have the flexibility to transfer up to 50 percent of funds from one program to another (exceptions include no transfers of Metropolitan Planning funds or funds allocated to areas based on population) to make progress towards achieving performance target goals.

Findings related to the Statewide Pedestrian Master Plan:

To streamline federal highway transportation programs under MAP-21, a new program called the Transportation Alternatives Program (TAP) was established to provide for a variety of alternative transportation projects that were previously eligible activities under separately funded programs. The Safe Routes to School Program (SRTS), Transportation Enhancements Program (TE), and Recreational Trails Program (RTP) are consolidated under TAP.

The TAP is funded via set asides from the National Highway Performance Program (NHPP), the Surface Transportation Program (STP), the Highway Safety Improvement Program (HSIP), the Congestion Mitigation and Air Quality Program (CMAQ), and Metropolitan Planning. TAP funds are administered by the HDOT and obligated for eligible projects submitted by eligible entities, such as local governments, transit agencies, natural resource or public land agencies, and schools statewide.

Potential use in developing:

Project Purpose and Criteria:

Purpose and criteria development should be consistent with MAP-21 in order to ensure maximization of funding opportunities.

Project Alternatives and Solutions:

Alternatives and solutions should be consistent with the general guidance outlined in MAP-21.

FHWA Transportation Alternatives Program

Purpose and Content:

To streamline federal highway transportation programs under MAP-21, a new program called the Transportation Alternatives Program (TAP) was established to provide for a variety of alternative transportation projects that were previously eligible activities under separately funded programs. The Safe Routes to School Program (SRTS), Transportation Enhancements Program (TE), and Recreational Trails Program (RTP) are all consolidated under TAP. TAP funds may be used for projects or activities that are related to surface transportation and fall under the description of "Transportation Alternatives" [23 USC 101(a)(29)]:

- Planning, design, and construction of on-road and off-road trail facilities for pedestrians, bicyclists, and other nonmotorized forms of transportation;
- Planning, design, and construction of infrastructure-related projects and systems that will provide safe routes for nondrivers, including children, older adults, and individuals with disabilities to access daily needs;
- Conversion and use of abandoned railroad corridors for trails for pedestrians, bicyclists, or other nonmotorized transportation users;
- Construction of turnouts, overlooks, and viewing areas;
- Community improvement activities, including –
    - inventory, control, or removal of outdoor advertising;
    - historic preservation and rehabilitation of historic transportation facilities;
    - vegetation management practices in transportation rights-of-way to improve roadway safety, prevent against invasive species, and provide erosion control; and

- archaeological activities relating to impacts from implementation of a transportation project eligible under 23 USC.

- Any environmental mitigation activity, including pollution prevention and pollution abatement activities and mitigation to—
  - address stormwater management, control, and water pollution prevention or abatement related to highway construction or due to highway runoff; or
  - reduce vehicle-caused wildlife mortality or to restore and maintain connectivity among terrestrial or aquatic habitats. [1]

Projects funded under the TAP (excluding projects funded under the Recreational Trails Program set aside) shall be considered projects on a federal-aid highway. [23 USC 213(e)]

Transportation Enhancement (TE) activities used to be a subset of federal Surface Transportation spending, which was authorized through prior legislation.

Findings related to the Statewide Pedestrian Master Plan:

The State of Hawaii received an average apportionment of approximately $3.7 million each year from 2005-2012.[2] Major pedestrian-related projects that are/were funded by TE and included in the FY 2011-2014 STIP are listed in Table 1.

Table 1 - Pedestrian-Related STIP Projects (Revision #5) funded by TE

OS69	Leeward Bikeway Phase I, Waipio Pt. Access Road to Hawaiian Railway Society Train Station	Construction	STP Enhancement
OS70	Leeward Bikeway, Phase II, Hawaiian Railway Society Train Station to Lualualei Naval Road	Design, Preliminary Right-of-Way, Right-of-Way	STP Enhancement
HC2	Alii Drive (Route 186) Road Improvements Along Oneo Bay, From Hualalai Road (Route 1880) to Walua Road (Route187)	Design, Right-of-Way, and Construction	STP Enhancement
MS2	Haleakala Crater Road, (Route 378), Bikeway Pull-Out Areas	Construction	STP Enhancement
KC1	Ahukini To Lydgate Park Bike/Pedestrian Path - (Phase IV of the Lihue-Anahola Coastal Bike Path, Bike Plan HI, April '94)	Design and Right-of-Way	STP Enhancement
KC8	Kuna Bay to Anahola Bike/Pedestrian Path - (Phase V of the Lihue-Anahola Coastal Bike Path, Bike Plan HI, April '94)	Design	STP Enhancement
KC9	Lydgate Park to Kapaa Bike/Pedestrian Path - (Phase III of the Lihue-Anahola Coastal Bike Path, Bike Plan HI, April '94) Phase B & C	Construction (Phase B); Planning, Design, Right-of-Way; and Construction (Phase C)	STP Enhancement
KC10	Nawiliwili to Ahukini Bike/Pedestrian Path (Phase VI of the Lihue-Anahola Coastal Bike Path, Bike Plan HI, April '94) Phases A & B	Design	STP Enhancement

[1] http://www.fhwa.dot.gov/map21/tap.cfm (May 2013)

[2] TE Activities Apportionments for FY 1992-2012. http://www.fhwa.dot.gov/environment/te/apportionments.htm (May 2013)

Potential use in developing:

Project Purpose and Criteria:

The project purpose and criteria development should be consistent with the TAP whenever possible.

Project Alternatives and Solutions:

Alternatives and solutions should be consistent with the general guidance outlined in the TAP.

FHWA Safe Routes to School Program

Purpose and Content:

The Safe Routes to School (SRTS) Program has three primary purposes, which are to: 1) enable children to walk/bike to school, 2) make bicycling and walking to school a safer and more appealing transportation alternative, thereby encouraging a healthy and active lifestyle from an early age, and 3) facilitate planning and implementation of projects that will improve safety, reduce traffic, and fuel consumption and air pollution in the vicinity (approximately 2 miles) of primary and middle schools (grades K-8). State Departments of Transportation (DOTs) cannot apply for the funding. Instead the SRTS Program provides funding to DOTs, and DOTs are responsible for administering the program (which consists of local/state partnerships). The Federal SRTS Program has been funded at about $978 million through fiscal year 2011.

Under the current Federal transportation legislation, MAP-21, the SRTS program remains eligible under the Transportation Alternatives Program (TAP). Local governments, schools, and transit agencies can propose projects to the State DOT. Nonprofits are not eligible as direct grant recipients of the funds, however, they can partner with an eligible partner.

Findings related to the Statewide Pedestrian Master Plan:

The SRTS Program provides guidance and grant resources to local, regional, and state organizations to encourage and promote pedestrian safety and activities, especially among school-aged pedestrians. The program also supports the planning and development of projects that enable walk/bike accessibility for pedestrian users with disabilities.

The SRTS program in Hawaii is administered by the HDOT. The purpose of the SRTS program is to promote walking and bicycling to school, encourage elementary and middle school aged children to be physically active, and prevent childhood obesity. The SRTS program can receive proposals from local governments, transit agencies, natural resource or public land agencies, and schools statewide for infrastructure and non-infrastructure projects within approximately 2 miles of an elementary or middle school. From FY2005 to 2011 the program was funded at approximately $1 million/year. Seventy percent of the funding can be awarded to infrastructure projects and 30 percent can be awarded to non-infrastructure projects. The Hawaii SRTS Program received a total apportionment of funding of $7.2 million between 2005-2011.[3] Under MAP-21, HDOT has the option to continue eligible SRTS program activities.

[3] Safe Routes to School Apportionments (May 2013). http://safety.fhwa.dot.gov/saferoutes/funding/

Potential use in developing:

Project Purpose and Criteria:

Criteria relating to project priorities should emphasize safe connections with schools. SRTS supports the rationale in establishing the need for providing improvement projects related to pedestrian and bicycle safety in elementary and middle school areas.

Project Alternatives and Solutions:

Project alternatives and solutions should consider safe and connected routes to school as important components of the pedestrian transportation system. SRTS is an eligible program under the TAP funding source for projects.

FHWA Recreational Trails Program

Purpose and Content:

The Recreational Trails Program (RTP) provides funds to states to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trails uses. RTP funds come from the Federal Highway Trust Fund and are distributed to States by legislative formula: half of the funds are distributed equally among all States, and half are distributed in proportion to the estimated amount of non-highway recreational fuel use in each State. The program is administered by each State DOT although in most States, the Governor has designated a State resource agency to administer the program rather than the DOT. In Hawaii, that agency is the Department of Land and Natural Resources. The RTP provides accessibility, design, and financial management guidance for groups and DOTs seeking to develop and maintain recreational trail projects. The RTP also provides engineering and equipment guidance for US National Park Service and US Forest Service trail development and maintenance.

To streamline federal highway transportation programs under MAP-21, the Transportation Alternatives Program (TAP) was established to provide for a variety of alternative transportation projects that were previously eligible activities under separately funded programs. The Safe Routes to School Program (SRTS), Transportation Enhancements Program (TE), and Recreational Trails Program (RTP) are all consolidated under TAP. MAP-21 requires each State to set aside a portion of its TAP funds for projects relating to recreational trails under 23 USC 206. [23 USC 213(f)-(g)]

- The amount to be set aside is equal to each State's FY 2009 RTP apportionment.
- 1% of the set-aside funds are to be returned for FHWA administration of the RTP.
- A State may opt out of this set-aside if the Governor notifies the Secretary no later than 30 days prior to the start of a fiscal year. A State opting out may not use TAP funds for RTP administrative costs for that fiscal year.
- If the State does not opt out of the RTP, the RTP provisions and requirements remain unchanged.

Findings related to the Statewide Pedestrian Master Plan:

In 2009, Hawaii received over approximately $850K for recreational trail improvements.[4] The RTP supports plan implementation strategies identified in Bike Plan Hawaii because the RTP and TAP are the only federal programs

[4] RTP Apportionments and Rescissions FY 2009. http://www.fhwa.dot.gov/environment/rectrails/recfunds_2009.htm

that allow funding exclusively for recreational use. Approximately $1.4 million has been included in the Statewide Transportation Improvement Program (STIP) to cover construction costs from 2008 to 2013.[5]

Potential use in developing:

Project Purpose and Criteria:

Criteria relating to project priorities could include reference to linkages to off-street trail facilities. This may be relevant especially for areas where state highway systems link with federal systems (e.g. on the Big Island).

Project Alternatives and Solutions:

The RTP is a potential funding source for priority projects identified in the Statewide Pedestrian Master Plan, in regards to connectivity and coordination with trail connections within the HDOT's right-of-way. It expected that most projects identified in the Plan will be within existing HDOT right-of-way and not on trails for recreational use.

American Recovery and Reinvestment Act

Purpose and Content:

The American Recovery and Reinvestment Act of 2009 (ARRA) is an economic stimulus package intended to create jobs and promote investment and economic recovery through a host of funding mechanisms including federal tax cuts, education spending, health care spending, infrastructure/energy sector spending, and other areas. However, aside from health care, the core series of federal funding within ARRA is directed at transportation/energy infrastructure and a supplemental list of specific federal agencies (i.e. Bureau of Indian Affairs, Bureau of Land Management, National Forest Service, National Park Service, etc.). There are five key purposes identified in the Act:

1. to preserve and create jobs and promote economic recovery,
2. to assist those most impacted by the recession,
3. to provide investments needed to increase economic efficiency by spurring technological advances in science and health,
4. to invest in transportation, environmental protection, and other infrastructure that will provide long-term economic benefits, and
5. to stabilize State and local government budgets, in order to minimize and avoid reductions in essential services and counterproductive state and local tax increases.

ARRA allocated about $81 billion toward transportation and energy infrastructure development, with a portion of funding focused toward the development and maintenance of high speed rail and transit system projects.

Findings related to the Statewide Pedestrian Master Plan:

The State of Hawaii Department of Transportation, Highways Division (HDOT-HWY), received $125,746,380 in ARRA funds under the Highway Infrastructure Investment Program. The HDOT-HWY worked with the four counties

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[5] STIP: Revision #3 – FY 2008-2013 (FFY 2012-2013 Informative Only). Effective April 14, 2008. http://www.state.hi.us/dot/stp/stip/080414-08-13-stip-rev3-appvd.pdf

to prioritize projects to utilize the ARRA funds. Projects were selected based on project readiness to be constructed, ability to meet fiscal funding requirements, location in economically distressed areas, and the equitable geographic distribution of funds. The HDOT-HWY selected projects that spanned several construction trades instead of selecting only repaving and preventive pavement maintenance projects. Projects using ARRA funds are listed on the STIP. The projects listed in Table 2 received ARRA funds and are assumed to include pedestrian facilities such as sidewalk or crosswalk facilities unless otherwise noted in design documentation specific to the project. Table 2 does not include power facilities or highway resurfacing projects that received ARRA funding.

Table 2: Summary of Hawaii ARRA Grant Awards

Federal Award ID	STIP ID	Project/Program Title	Award Amount
0831042	OS64	Kamehameha Highway Bridge Replacement, South Punaluu Stream Bridge	$15,298,510
0001036	OC13	Traffic Signals at Various Locations, Phase 10	$3,407,221
0300112	OC10	Traffic Improvements at Various Locations, Harding Avenue at 5th and 11th Avenue	$2,456,715
7139001	OC14	Waipio Point Access Road Improvements	$3,585,927
0951001	OC34	Kalaeloa Blvd, Widening and Reconstruction, Phase 1 - OR&L ROW to Lauwiliwili Street	$6,773,817
3405002	MC49	Market Street Improvements, Phase 2	$2,421,990
0501036	KS20	Kaumualii Highway Improvements, Lihue Mill Bridge to Rice Street	$22,724,979
700049	KC9	Lydgate Park to Kapaa Bike/Pedestrian Path, (Phase III of the Lihue-Anahola Coastal Bike Path)	$4,120,000
1880001	HS46	Ane Keohokalole Highway and Palani Road Intersection Improvements	$34,818,329
0191042	HC16	Waimea ADA Sidewalk and Ramps, Mamalahoa Highway	$1,006,432

Source: *ARRA: Official State of Hawaii ARRA Website*. http://hawaii.gov/recovery/dot-1/highways/department-of-transportation-highways

Potential use in developing:

Project Purpose and Criteria:

Not applicable.

Project Alternatives and Solutions:

The development of project alternatives and solutions will take the ARRA-funded project list into consideration, so as to not duplicate efforts.

Americans with Disabilities Act of 1990

Purpose and Content:

The Americans with Disabilities Act of 1990 (ADA) falls under Title 42 of the US Code Chapter 126. The purpose of the Act is to:

> (1) provide a clear and comprehensive national mandate for the elimination of discrimination against individuals with disabilities;
>
> (2) provide clear, strong, consistent, enforceable standards addressing discrimination against individuals with disabilities;
>
> (3) ensure that the Federal Government plays a central role in enforcing the standards established in this chapter on behalf of individuals with disabilities; and
>
> (4) invoke the sweep of congressional authority, including the power to enforce the fourteenth amendment and to regulate commerce, in order to address the major areas of discrimination faced day-to-day by people with disabilities.

Title II of the ADA prohibits disability discrimination by all public entities at the local (i.e. municipal, city, county) and state level; and applies to public transportation provided by public entities through regulations by the U.S. Department of Transportation.

The ADA is further enforced by the Hawaii Revised Statutes (HRS) §103-50, which requires all plans and specifications for the construction of public buildings, facilities, and sites to conform to ADA Accessibility Guidelines (as required by Title 36 in the Code of Federal Regulations, Part 1191) and the Federal Fair Housing Amendments Act of 1988 (as established in Title 24 Code of Federal Regulations, Part 100, Subpart D). HRS §103-50 is available at http://www.capitol.hawaii.gov/hrscurrent/Vol02_Ch0046-0115/HRS0103/HRS_0103-0050.htm.

Findings related to the Statewide Pedestrian Master Plan:

The ADA provides regulatory policy that prohibits discrimination on the basis of disability. Therefore, the policy requires that state transportation facilities include design measures that allow access for persons with disabilities including, but not limited to, mobility, visual, hearing, cognitive, or other impairments. Examples of such design measures include ADA wheelchair ramps at crosswalks, audible crosswalk guides, or Braille translation on signs.

Potential use in developing:

Project Purpose and Criteria:

The purpose and criteria developed for the Statewide Pedestrian Master Plan will address the ability of the state highway system to accommodate persons with disabilities.

Project Alternatives and Solutions:

Project alternatives and solutions will ensure consistency with ADA design standards and guidelines. Alternatives will reflect the safety and connectivity needs for persons with disabilities.

USDOT Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations (Complete Streets) - 2010

Purpose and Content:

The United States Department of Transportation (USDOT) has provided a Policy Statement to reflect the Department's support for the development of fully integrated active transportation networks. It is also known as the Complete Streets policy. The USDOT recognizes that the establishment of well-connected walking and bicycling networks is an important component for livable communities, and their design should be a part of Federal-aid project developments. Walking and bicycling foster safer, more livable, family-friendly communities; promote physical activity and health; and reduce vehicle emissions and fuel use. Legislation and regulations exist that require inclusion of bicycle and pedestrian policies and projects into transportation plans and project development. Accordingly, transportation agencies should plan, fund, and implement improvements to their walking and bicycling networks, including linkages to transit.

In addition, USDOT encourages transportation agencies to go beyond the minimum requirements, and proactively provide convenient, safe, and context-sensitive facilities that foster increased usage by bicyclists and pedestrians of all ages and abilities, and utilize universal design characteristics when appropriate.

USDOT policy is to incorporate safe and convenient walking and bicycling facilities into transportation projects. Because of the numerous individual and community benefits that walking and bicycling provide — including health, safety, environmental, transportation, and quality of life — transportation agencies are encouraged to go beyond minimum standards to provide safe and convenient facilities for these modes.

Findings related to the Statewide Pedestrian Master Plan:

The Policy encourages state DOTs to consider the inclusion of pedestrian facilities on state routes and transportation facilities, and integrate pedestrian facilities into transportation systems as an incentive to meet federal funding eligibilities. In 2009, Hawaii Governor Lingle signed SB 718 into law (Act 54). The Complete Streets Act requires transportation agencies to adopt a complete streets policy and the HDOT to convene a statewide task force to review design standards and determine new policy needs to implement a Complete Streets policy. In 2010, the HDOT convened a comprehensive Complete Streets Task Force, of agencies and advocates, to develop a statewide Complete Streets policy. The HDOT has administratively adopted a Complete Streets policy.

Potential use in developing:

Project Purpose and Criteria:

The purpose and criteria will reflect principles included in the USDOT Policy Statement on Bicycle and Pedestrian Accommodation.

Project Alternatives and Solutions:

Project alternatives and solutions may be funded as a result of policy direction included in the USDOT policy statement.

State Plans, Policies, and Programs

Statewide transportation policy and planning documents primarily address statewide transportation networks, and some cover all modes. Statewide plans and policies provide a general policy framework for transportation planning and provide direction for project and program implementation (including guidelines and standards) for Hawaii state roadway facilities. The plans, policies, and programs can also serve as examples for counties and cities within the state for the development of their own policies, guidelines, and standards.

The Statewide Pedestrian Master Plan purpose comes from statewide policy direction identified in the Hawaii Strategic Highway Safety Plan and the Hawaii Statewide Transportation Plan that calls for improving safety and mobility on the state highway system.

State modal plans provide goals that are mode specific, such as improving bicycle, pedestrian, or rail facilities. The Statewide Pedestrian Master Plan is a modal plan that will be designed to be consistent with statewide policy direction.

The following statewide plans, policies, and programs were examined:

- Hawaii Statewide Transportation Plan 2011
- Statewide Long-Range Land Transportation Plan (ongoing, 2011)
- Hawaii Strategic Highway Safety Plan 2007 thru 2012
- Bike Plan Hawaii 2003
- HDOT Complete Streets Policy
- Hawaii Statewide Transportation Improvement Program (2010)
- Walk Wise Hawaii
- Hawaii Local Technical Assistance Program
- Healthy Hawaii Initiative
- Na Ala Hele Trails and Access Program

Hawaii Statewide Transportation Plan 2011

Purpose and Content:

The Hawaii Statewide Transportation Plan (HSTP) links broad policy goals with specific action items. It provides the foundation that connects these action items with the transportation planning done at the regional and county levels. The plan is a product of collaboration with the HDOT and its three operating divisions as well as with the transportation planning partners at the county levels. The HSTP is *not* a listing of specific transportation projects at either the statewide or local level. Rather, the HSTP sets the stage and provides the context for the development of transportation programs that, when implemented, will help achieve one or more of Hawaii's transportation goals. It identifies transportation directions and the range of key elements to be considered in the development, management, and operation of Hawaii's transportation systems. The primary purpose of the HSTP is:

- To establish a framework for the development, integrated management, and operation of Hawaii's multi-modal transportation systems, programs, and facilities; and

- To provide a foundation and identify the parameters within which the search for solutions can begin.

Findings related to the Statewide Pedestrian Master Plan:

The Statewide Pedestrian Master Plan must be consistent with the policy direction in the HSTP. Goals, objectives, strategies, and examples of implementing actions should be referenced as lower level plans are updated or prepared (system master plans and facility master plans such as the Statewide Pedestrian Master Plan) and as specific projects and programs are considered for development and implementation. Consistency with the HSTP must be maintained in order to best achieve the transportation system's overall mission. The HSTP policies related to the Statewide Pedestrian Master Plan are listed below and reflect the 2011 HSTP goals and objectives.

- Goal 1: Create and manage an integrated multi-modal transportation system that provides mobility and accessibility for people and goods.
  - Objective 1: Preserve and maintain the existing air, water, and land transportation systems, including motorized and non-motorized modes and measures in good condition or better, and give comparable consideration to funding preservation capital projects as is given to expansion projects.
  - Objective 2: Ensure the provision of essential and critical air, land, and transportation operations and services for all communities throughout all islands.
  - Objective 3: Ensure multi-modal and inter-modal connections for passengers and commodities on the air, land, and water systems; and formulate a program of multi-modal and inter-modal projects, including bicycles and walking options.
  - Objective 4: Address the special needs of Hawaii's underserved populations, including the elderly, disabled, and Title VI/Environmental Justice populations.
- Goal 2: Enhance the safety of the air, land, and water transportation systems.
  - Objective 1: Enhance system and user safety at transportation facilities both motorized and non-motorized, with the use of proper equipment, technology, and physical hazard reduction; and implement priority safety projects for each mode.
  - Objective 4: Use and consider a full range of transportation design techniques to improve personal safety for all travelers.
- Goal 4: Protect Hawaii's unique environment and quality of life and mitigate any negative impacts.
  - Objective 3: Assess sustainability and livability for air, land, and water transportation facilities and operation practices.
  - Objective 5: Encourage transportation systems that improve the quality of life, public health, and welfare of Hawaii's people, and that are consistent with land use plans.
- Goal 5: Ensure the air, land, and transportation facility systems support Hawaii's economy and future growth objectives.
  - Objective 1: Support the multi-modal transportation needs in the military, tourism, agriculture, health, education, energy, and technology sectors of Hawaii's economy; and identify sector needs, current and projected, as they relate to the movement of people and goods.
  - Objective 4: Create modern air, land, and water transportation systems that are part of a positive visitor experience.

Potential use in developing:

Project Purpose and Criteria:

The project purpose will be consistent with the HSTP. Criteria developed will consider the goals and objectives identified in the HSTP.

Project Alternatives and Solutions:

Project alternatives and solutions will be developed and prioritized with consideration of HSTP policy direction and project development direction.

Statewide Long-Range Land Transportation Plan (on-going, 2011)

Purpose and Content:

The Statewide Long-Range Land Transportation Plan (SLRLTP) will guide land transportation policy and programs within the State and is currently under development (2012). However, goals and objectives for the Plan have been finalized and were reviewed for their relevance to the Statewide Pedestrian Master Plan.

Findings related to the Statewide Pedestrian Master Plan:

The SLRLTP goals and objectives that are relevant to the Statewide Pedestrian Master Plan are listed below:

- Goal 2.1: Provide a Complete Streets transportation system of motorized and non-motorized options.
  - Objective: Create transportation facilities that support all modes of travel that result in a well-connected system-wide network for travel between transport modes and between communities.
  - Objective: Promote education and understanding of the benefits of bicycling and walking and laws applicable to each group.
- Goal 2.2: Promote efficient travel between modes by creating connections and removing barriers.
  - Objective: Promote design and development of complete, integrated multi-modal street systems for all users (including freight, motorists, pedestrians, bicycles, transit, etc.) of all ages and abilities.
  - Objective: Encourage transportation infrastructure and transportation service concurrency with land development.
- Goal 2.3: Promote safe connections between modal alternatives.
  - Objective: Provide transportation modal options and connections that address safety considerations of all users, especially at-risk population segments (children, elderly, disabled).
- Goal 8.1: Maintain a safe transportation system for all land transportation modes.
  - Objective: Address transportation safety through a mixture of education, enforcement and engineering solutions.
  - Objective: Reduce the number of traffic related fatalities.
  - Objective: Reduce the number of collisions and crashes involving serious injuries and fatalities for all land transportation modes.

Potential use in developing:

Project Purpose and Criteria:

The project purpose and criteria will be consistent with the goals and objectives in the SLRLTP.

Project Alternatives and Solutions:

Project alternatives and solutions will be developed and prioritized with consideration of SLRLTP goals and objectives.

Hawaii Strategic Highway Safety Plan 2007-2012

Purpose and Content:

The Hawaii Strategic Highway Safety Plan (HSHSP) addresses issues related to improving traffic safety data collection, increasing traffic safety awareness, and other crucial traffic safety issues. The Statewide Pedestrian Master Plan is identified as a key strategy for improving highway safety in the HSHSP. The goal of the plan is to reduce the number of traffic-related fatalities from an average of 135 a year (from 2001 to 2005) to 100 or fewer by 2012. The HSHSP identifies seven emphasis areas that are particularly pertinent and pressing in Hawaii, including: aggressive driving, impaired driving, occupant protection, pedestrians and bicyclists, motorcycle and moped safety, facility design (roadway and intersection operations), and data and safety management. The HSHSP provides a background on these seven issues and suggests key policy strategies that address them through legislation and funding, enforcement, data needs, transportation and land use planning, education and community action, and engineering strategies.

Findings related to the Statewide Pedestrian Master Plan:

Hawaii had the fifth highest pedestrian fatality rate from traffic crashes in the United States from 2001-2005. The HSHSP acknowledges that senior pedestrians incur the highest rate of fatal injuries, and that young pedestrians (5-19 years old) incur the highest rate of non-fatal crashes.[6] Some of the key strategies in the HSHSP are to safeguard pedestrians and bicyclists by:

- Revising and strengthening existing pedestrian and bicycle laws and supporting the passage and implementation of new laws. *(Legislative & Funding Strategy)*
- Providing funding for law enforcement to meet the current shortage of personnel, including a shortage of more than 200 personnel at Honolulu Police Department. *(Legislative & Funding Strategy)*
- Improving data collection systems to facilitate the creation and dissemination of standardized data set(s) to track bicycle and pedestrian activity, level of use, and injuries and fatalities. *(Data Needs Strategies)*
- Updating zoning codes and street design standards to support best practices for pedestrian and bicycle facilities and safety. *(Transportation and Land Use Planning Strategy)*
- Developing a pedestrian plan that is commensurate with the Bike Plan Hawaii 2003. *(Transportation and Land Use Planning Strategy)*

Potential use in developing:

Project Purpose and Criteria:

The project purpose is derived from the HSHSP. Criteria developed to identify areas of concern will include safety considerations, as will the criteria developed to prioritize projects and programs.

6 Strategic Highway Safety Plan (2001-2012). Page 18.

Project Alternatives and Solutions:

Alternatives and solutions developed for the Statewide Pedestrian Master Plan will include projects intended to address the safety issues identified in the HSHSP. Proposed solutions would include design elements or features that comply with required safety design standards.

Bike Plan Hawaii 2003

Purpose and Content:

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. The purpose of the bike plan is to establish a long-term strategy for bicycle facility improvements, enable better coordination between transportation and land-use planning, increase the ability to leverage funds for bicycle facilities, and provide a mechanism to achieve community consensus.

Findings related to the Statewide Pedestrian Master Plan:

Bike Plan Hawaii defines the types of bicycle facilities maintained by state, county, and local jurisdictions as bike lanes, bike routes, and shared use paths. By definition in Bike Plan Hawaii, bike lanes and bike routes consist of pavement markings or signage on a roadway and do not allow for pedestrian access. However, it defines a shared use path as "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". Many of the shared use paths used by bicyclists and pedestrians are not located on state highway facilities. Existing shared-use paths on state facilities are listed in Table 3 below.

Table 3 – Existing, Underway and Recommended Shared-Use Paths on State Facilities

Facility Location (Island)	Path Length (miles)	Priority
Existing/Under Construction Facilities		
Kunia Road – Honowai St to Farrington Hwy (Oahu)	0.4	N/A
Fort Weaver Road – Farrington Hwy to Iroquois Point Rd (Oahu)	3.8	N/A
Kamehameha Highway – Likelike Hwy to Koolau View Dr (Oahu)	1.1	N/A
Nimitz Highway – Radford Dr to Puuloa Rd (Oahu)	3.6	N/A
Nimitz Highway – Puuloa Rd to Middle St (Oahu)	0.8	N/A
Pearl Harbor Bike Path – Lehua St to Waipio Pt Access Rd (Oahu)	1.5	N/A
Pearl Harbor Bike Path – Waipio Point Access Rd to Waipahu Depot St (Oahu)	0.4	N/A
Puunene Avenue – Hookele St to Hansen Rd (Maui)	0.6	N/A
Mokulele Highway – Hansen Rd to Vicinity of Kealia Pond Drive (Maui)	5.9	N/A
Leeward Bikeway – Waipio Pt Access Rd to Lualualei Naval Rd (Oahu)	10.9	N/A
Queen Kaahumanu Highway – Makala Rd to Palani Rd (Hawaii)	0.6	N/A

Facility Location (Island)	Path Length (miles)	Priority
Recommended Facilities		
Old Pali Road – Pali Lookout to Pali Rd (Oahu) – 77a	1.2	II
Kuilhelani Highway – Puunene Ave to Honoapiilani Hwy (Maui) – 15b	5.3	III
Future Honoapiilani Greenway – Maalaea-Papalaua State Wayside (Maui) – 65a	5.0	IV
Future Honoapiilani Greenway – Ukumehame Beach Park to Front St (Maui) – 73	7.6	IV
Old Volcano Trail – Volcano Hwy, S. Glenwood Rd, Kahikopele St, Puhula St to Olaa Rd (Hawaii) - 35	12.5	I
Separate path adjacent and parallel to Queen Kaahumanu Highway – Makala St to Keahole Airport (Hawaii) – 81a	6.2	I
Separate path adjacent and parallel to Queen Kaahumanu Highway – Keahole Airport to Akoni Pule Hwy (Hawaii) – 81b	26	II
Future Waimea Highway Bypass – Path (Hawaii) - 101	3.9	IV

Source: Bike Plan Hawaii (2003), Appendices C-E, and HDOT

Potential use in developing:

Project Purpose and Criteria:

The project purpose will align with the purpose of Bike Plan Hawaii, but focus on pedestrian safety and access. Project criteria may reflect priorities identified in Bike Plan Hawaii relating to shared use path facilities.

Project Alternatives and Solutions:

The project alternatives and solutions will consider the facilities or projects included in Bike Plan Hawaii, particularly the provision and safety of shared use pathways. Alternatives and solutions could consider how shared-use improvements may or may not suit identified needs and issues of pedestrian travel on or near state route facilities.

HDOT Complete Streets Policy

Purpose and Content:

A statewide Complete Streets Policy helps incorporate a more comprehensive approach to roadway facilities than is employed at present. It helps to improve the quality of life, environment, and livability of Hawaii's communities, as well as meet the HDOT's mission of improving roadway safety and mobility for all travelers. Complete streets provide an ease of use and access to destinations by providing an appropriate path of travel for all users, and enhance the ability to move people and goods throughout the state and its counties. Additionally, complete streets principles help contribute to a clean and secure energy future for Hawaii by offering flexibility and better accommodation for safe transit, walking, bicycling, and alternate fuel vehicles that together will decrease demand for imported oil.

The Complete Streets Policy serves as a framework for implementing complete streets throughout Hawaii to allow the State and County systems to better serve all transportation users. This policy is based on direction from

the Complete Streets Task Force, as well as guidance from complete streets best practices across the country, the provisions of Act 54, and HRS §264-20.5. As Act 54 requires that the State Department of Transportation, the City and County of Honolulu (CCH), and the Counties of Hawaii, Maui, and Kauai adopt a Complete Streets Policy, these agencies are encouraged to collectively adopt this proposed policy as a way to achieve statewide consistency for complete streets.

The purpose of the policy is to formally adopt complete streets principles to guide and direct comprehensive and balanced planning, design, and construction of State and County transportation systems throughout Hawaii. [7]

Findings related to the Statewide Pedestrian Master Plan:

The HDOT added the Complete Streets Policy to their Highways Procedures Manual in March 2012. The Complete Streets principles are:

- ***Safety*** – Plan, design, and construct transportation facilities and land developments to create an environment that reduces risk and supports the safe movement of people and goods by all modes.
- ***Flexible design (Context Sensitive Solutions [CSS])*** – Design transportation facilities using best practices that integrate community values and recognize the importance of the surrounding context and environment.
- ***Accessibility and mobility for all*** – Plan and design transportation facilities for ease of use and access to destinations by providing an appropriate path of travel for all users, and enhance the ability to move people and goods throughout the state and its counties.
- ***Use and Comfort of all users*** – Ensure all users of all abilities including bicyclists, pedestrians, transit riders, and drivers feel comfortable and safe using the transportation system.
- ***Consistency of design standards and guidelines*** – Encourage consistent use of national best practices to generate consistency in the application of striping and pavement markings for all users on all islands. References of national best practices include the Manual on Uniform Traffic Control Devices (MUTCD) and A Policy on Geometric Design of Highways and Streets (American Association of State Highway and Transportation Officials [AASHTO] Green Book).
- ***Energy efficiency*** – Plan, design, and construct a transportation system that offers transportation choices for residents and visitors and reduces reliance on single-occupant vehicles to improve energy efficiency in travel, and mitigates vehicle emissions.
- ***Health*** – Recognize the health benefits in providing alternative mode choices, while acknowledging that some routes may be healthier than others.
- ***Appropriate funding*** – Support a jurisdiction's ability to secure funding for multimodal facilities and provide a framework to consider and pursue funding sources and opportunities.
- ***Building partnerships with organizations statewide*** – Build partnerships among the HDOT, the Counties, other governmental agencies, and stakeholders to implement complete streets throughout the state.
- ***Green Infrastructure/Streets*** – Use trees and landscaping as integral components of a Complete Street to provide both human and ecosystem benefits, such as shade, to reduce the urban heat island effect, vegetation for carbon sequestration, reducing/filtering non-point source pollution and sediments, retaining stormwater, increasing groundwater recharge, and providing wildlife habitat.

[7] Complete Streets Task Force – Final Complete Streets Legislative Report, November 2010

The Complete Streets principles and practices shall be considered on all public highways, roadways, streets statewide, and all planning efforts and project alternatives, as well as development, capital improvement, and maintenance projects.

Potential use in developing:

Project Purpose and Criteria:

The purpose and criteria developed for the Statewide Pedestrian Master Plan should be consistent with the HDOT's Complete Streets policy and principles.

Project Alternatives and Solutions:

Project alternatives and solutions should be consistent with the HDOT's Complete Streets policy and principles.

Hawaii Statewide Transportation Improvement Program

Purpose and Content:

The Hawaii Statewide Transportation Improvement Program (STIP) is a multimodal transportation program that provides a multi-year listing of state and county projects identified for federal or special funding or regionally significant projects requiring action by the FHWA or FTA. The STIP is developed by drawing from existing transportation plans and policies, and current highway, transit, and transportation planning processes. It is prepared by the HDOT in cooperation with the Oahu Metropolitan Planning Organization (Oahu MPO), City and County of Honolulu, County of Hawaii, County of Maui, and County of Kauai. To qualify for funding, STIP projects must be consistent with each county's long range plan and/or the Statewide Transportation Plan. In addition, STIP projects can only be located on roadways with a functional classification greater than a collector road; local neighborhood roads are not eligible for STIP funding.

Findings related to the Statewide Pedestrian Master Plan:

As of December 2010, twenty seven pedestrian or bicycle related improvement projects were included in the latest revision of the STIP (Revision # 5). Most of these projects are funded through the Surface Transportation Program. There are other projects on the FY 2011-2014 STIP that have pedestrian improvements, however, those improvements are not the primary purpose of the project.

Table 4 - Pedestrian-Related STIP Projects (Revision #5)

S1	Bikeway Improvements at Various Locations, Statewide	Design, Right-of-Way, and Construction	STP Flexible
S8	Pedestrian Facilities and ADA Compliance at Various Locations	Design and Construction	STP Flexible
S10	Safe Routes to School (SR2S) Program, Non-infrastructure and infrastructure	Planning and Design (Non-infrastructure); Planning, Design, and Construction (Infrastructure)	Safe Routes to School
S12	Statewide Countdown Pedestrian Signal Head Upgrade, Phase 2	Construction	STP Flexible
S24	Statewide Planning	Planning	FTA Section 5304

OS69	Leeward Bikeway Phase I, Waipio Pt. Access Road to Hawaiian Railway Society Train Station	Construction	STP Enhancement
OS70	Leeward Bikeway, Phase II, Hawaiian Railway Society Train Station to Lualualei Naval Road	Design, Preliminary Right-of-Way, Right-of-Way	STP Enhancement
OC1	Alapai Transit Center Multi-Use Path	Construction	STP Flexible
OC3	Bicycle Projects	Right-of-Way, Planning, Design, and Construction	Local and STP Flexible
OC11	Traffic Signals at Various Locations	Planning, Design, Construction, and Equipment	Local and STP Flexible
OC12	Upgrade Pedestrian Signals at Various Locations	Design and Construction	Local and STP Flexible
OC26	Traffic Signal Optimization	Design	STP Flexible
HS2	Akoni Pule Highway (Route 270), Bicycle Improvements, Mahukona Wharf Access Road to Hawi Road	Design	STP Flexible
HS25	Kuakini Highway Bicycle Improvements - King Kamehameha III Highway to Mamalahoa Highway	Construction	STP Flexible
HS32	Puainako St (Rte 2000) Widening and Realignment, Kanoelehua Ave (Rte 11 Modern Komohana St (Rte 1940), Phase I - Komohana to Kawili (Rte 2770)	Preliminary Right-of-Way, Right-of-Way	STP Flexible, Earmark-High Priority (HI02)
HC2	Alii Drive (Route 186) Road Improvements Along Oneo Bay, From Hualalai Road (Route 1880) to Walua Road (Route 187)	Design, Right-of-Way, and Construction	STP Enhancement
HC8	Kamehameha Avenue (Route 1910) Resurfacing, Wailoa Bridge to Ponahawai Street	Construction, Advance Construction	STP Flexible
HC9	Kawailani (Rte 2760)/Pohakulani/Ainaola (Rte 2750) & Kawailani (Rte 2760)/Iwalani (Rte 2770) Intersection Improvements Phase 2	Design, Construction	STP Flexible
MS2	Haleakala Crater Road, (Route 378), Bikeway Pull-Out Areas	Construction	STP Enhancement
MS17	Puunene Avenue (Route 3500) Bicycle Improvements - Kaahumanu Avenue (Route 32) to Kuihelani Highway (Route 380)	Construction	STP Flexible
KS20	Kuhio Highway (Route 56), Mailihuna Road Intersection Improvements and Kapaa Stream Bridge Rehabilitation	Design and Right-of-Way	Bridge-On System
KC1	Ahukini To Lydgate Park Bike/Pedestrian Path - (Phase IV of the Lihue-Anahola Coastal Bike Path, Bike Plan HI, April '94)	Design and Right-of-Way	STP Enhancement
KC3	Hanapepe Bridge Repairs and Pedestrian Bridge Repairs/Replacement	Design and Construction	Bridge-Off System

KC7	Kapahi Bridge Replacement	Construction	Bridge-Off System
KC8	Kuna Bay to Anahola Bike/Pedestrian Path - (Phase V of the Lihue-Anahola Coastal Bike Path, Bike Plan HI, April '94)	Design	STP Enhancement
KC9	Lydgate Park to Kapaa Bike/Pedestrian Path - (Phase III of the Lihue-Anahola Coastal Bike Path, Bike Plan HI, April '94) Phase B & C	Construction (Phase B); Planning, Design, Right-of-Way; and Construction (Phase C)	STP Enhancement
KC10	Nawiliwili to Ahukini Bike/Pedestrian Path (Phase VI of the Lihue-Anahola Coastal Bike Path, Bike Plan HI, April '94) Phases A & B	Design	STP Enhancement

Potential use in developing:

Project Purpose and Criteria:

The project purpose and criteria will be consistent with the goals and objectives identified in the Hawaii Statewide Transportation Plan. The STIP will be important to review during the identification and prioritization of project solutions.

Project Alternatives and Solutions:

Review of the STIP will be important to give a full picture of existing planned improvements on state facilities. All improvements identified as priorities as a result of the Statewide Pedestrian Master Plan will need to be consistent with STIP format.

Walk Wise Hawaii

Walk Wise Hawai'i (WWH) is an HDOT public education program that works through community partnerships, presentations, and the media to educate pedestrians and drivers on safe walking and driver awareness. The program operates with grants from the National Highway Traffic Safety Administration and currently has partnerships with key businesses and organizations in Hawai'i, including AAA-Hawai'i, AARP, DTRIC Insurance, Kama'āina Kids, Longs Drugs, Tesoro Hawai'i, and Farmers Insurance. The program also has public partnerships with the City & County of Honolulu's Department of Transportation Services, the City & County of Honolulu's Elderly Affairs Division, the State Department of Health, and the Honolulu Police Department.

WWH conducts a number of activities to improve pedestrian safety for senior citizens, school children, and the general public. These activities include coordinating a Speaker's Bureau, orchestrating a Pedestrian and Driver Pledge program, running a "Hot Spots" program, and distributing a "Step to Safety" brochure. As part of the Speaker's Bureau, WWH speakers visit elementary, middle and high schools, community centers, senior centers, and businesses to educate people about pedestrian and driver habits that increase pedestrian safety. After each presentation, the audience is asked to take a pledge to increase pedestrian safety and share what they have learned with at least one family member. The "Hot Spots" program targets key locations with focused events to build pedestrian safety awareness. The "Step to Safety" brochure includes tips for good pedestrian habits and is printed in many languages. WWH is currently working on developing an additional brochure aimed at providing drivers with pedestrian awareness safety tips. Other efforts by WWH include running Public Service Announcements (PSAs) at movie theaters and handing out brightly colored tote bags and wrist bands. The

program has been cited as a model program by the NHTSA (National Highway Traffic Safety Administration) Western Region. Recently, the program designated August as Pedestrian Safety Month.

Website: http://hawaii.gov/dot/highways/safe-communities/walkwisehawaii

Potential use in developing:

Project Purpose and Criteria:

The purpose and criteria development for the Statewide Pedestrian Master Plan should consider public education programs as a way to increase pedestrian safety awareness.

Project Alternatives and Solutions:

Project alternatives and solutions will consider educational and enforcement programs, in addition to any infrastructure needs.

Hawaii Local Technical Assistance Program

The Local Technical Assistance Program (LTAP) is a program of the Federal Highway Administration (FHWA). Hawaii LTAP's mission is to develop and deliver a broad range of quality training, technology transfer, and information sharing through cooperative relationships that promote best practices throughout the statewide transportation system. It focuses on providing technical assistance to the transportation community in the areas of safety, workforce development, infrastructure management, value delivery, and environmental quality.

Hawaii LTAP operates out of the Department of Civil and Environmental Engineering at the University of Hawaii at Manoa. It consists of a partnership among local chapters of national engineering and transportation organizations (such as the American Public Works Association (APWA), the Institute of Transportation Engineers (ITE), the American Society of Civil Engineers (ASCE), and the Hawaii Society of Professional Engineers (HSPE)), as well as with local non-profit organizations, such as People's Advocacy for Trails Hawaii (PATH).

In 2008, the HDOT, Hawaii LTAP, and the Federal Highway Administration (FHWA) hosted a five day Pedestrian Safety Action Plan workshop. Attendees from various Federal, State, County, advocacy, and community organizations actively learned from national experts, representing the FHWA and the Pedestrian and Bicycle Information Center (PBIC).

In 2009, Hawaii LTAP provided a Complete Streets design course workshop for local engineers and planning professionals in a sponsored partnership with PATH, AARP Hawaii, and the Hawaii Bicycling League. The workshop provided technical guidance for participants to integrate the Complete Streets concepts into current planning and design efforts.

Website: www.eng.hawaii.edu/~hltap/

Potential use in developing:

Project Purpose and Criteria:

The purpose and criteria development for the Statewide Pedestrian Master Plan should consider education and training as a way to increase pedestrian safety awareness and incorporate innovative pedestrian design.

Project Alternatives and Solutions:

Project alternatives and solutions will consider educational programs, in addition to any infrastructure needs.

Healthy Hawaii Initiative

Start Living Healthy Program

For ten years, the Hawaii Department of Health's Healthy Hawaii Initiative (HHI) has been supporting healthy lifestyles by implementing policies and programs to create sustainable changes in Hawaii's communities, schools and workplaces. HHI is a statewide effort focused on reducing three core behaviors that contribute to chronic disease: smoking, inactivity, and poor diet. HHI has made significant strides in helping Hawaii's residents lead healthy lives, and it has been recognized for its success as a comprehensive public sector prevention program.

The Start Living Healthy Program is a HHI health promotion campaign that is funded through Tobacco Settlement funds. The program focuses on providing public health information primarily related to walking, tobacco-free living, and healthy eating. Through the "Step It Up" media campaign, the Start Living Healthy Program encourages 30 minutes of daily activity through television and mall advertisements and walking posters that contain information about the health benefits of walking and exercise. The program also sponsors activities and education events.

Website:
http://www.healthyhawaii.com/about_hhi/about_start_living_healthy/about_the_healthy_hawaii_initiative.htm

Hawaii Nutrition & Physical Activity Coalition

The Hawaii Nutrition & Physical Activity Coalition (NPAC) is a program funded by the State of Hawaii Department of Health's Healthy Hawai`i Initiative (HHI) and Hawaii Department of Health. The program aims to increase physical activity and improve nutrition among Hawaii residents. The Hawaii NPAC has six task forces that advocate for policy and environmental change to meet the program's goals, including a School Task Force, Worksite Wellness Task Force, Healthcare Task Force, Built Environment Task Force, and Rural Outreach Task Force. The Built Environment Task force advocates for Complete Streets policies, Safe Routes to Schools, and Pedestrian & Bicycle Safety and Accessibility. Additionally, coalitions are in place in every county throughout the state, implemented through a contract with the Office of Public Health Studies at the John A. Burns School of Medicine at the University of Hawai`i at Manoa.

Website: www.npachawaii.org/

Potential use in developing:

Project Purpose and Criteria:

The purpose and criteria development for the Statewide Pedestrian Master Plan should consider sustainability changes and the built environment in Hawaii's communities.

Project Alternatives and Solutions:

Project alternatives and solutions will consider sustainable solutions and the built environment to encourage physical activity.

Na Ala Hele Trails and Access Program

Na Ala Hele Trails and Access Program is a state program administered by Department of Land & Natural Resources (Division of Forestry & Wildlife) under HRS, Chapter 198D and HAR, Title 13, Chapter 130. It is primarily funded by the FHWA Recreational Trails Program. Na Ala Hele Trails and Access Program regulates activity for specific trails and access, conducts trail access inventory and classification, examines legal issues associated with trail access, and manages the construction and restoration of recreational & non-motorized trails in partnership with community organizations.

Website: http://hawaiitrails.ehawaii.gov/info.php

Potential use in developing:

Project Purpose and Criteria:

The purpose and criteria development for the Statewide Pedestrian Master Plan should consider pedestrian connections to recreational trailheads.

Project Alternatives and Solutions:

Project alternatives and solutions will consider access and connections to popular recreational trailheads.

Regional and Local Plans, Policies and Programs

Regional and local plans, policies, and programs are more specific than federal or statewide plans, policies, and programs in that they address a smaller geography and define specific projects for specific community contexts. Hawaii has four counties for which plans and programs were reviewed: Kauai, Maui, Hawaii, and Oahu. City and community development plans and policies are not reviewed in this document; however relevant city and community development plans were reviewed once the relevant areas of concern were identified.

The regional and local plans and policies reviewed are generally consistent with statewide policy direction. Some of the local plans outline specific pedestrian transportation improvement projects. These regional and local plans will be used to inform the development of the Statewide Pedestrian Master Plan. The following regional and local plans and policies were reviewed:

- County of Hawaii General Plan (2005)
- Hawaii Long Range Land Transportation Plan (1998)
- Oahu General Plan (2006)
- Oahu Regional Transportation Plan 2035 (2011)
- Draft Oahu Bike Plan (2009)
- County of Maui General Plan 2030 – Countywide Policy Plan (2010)
- Joint State/County Maui Interim Transportation Plan (2002) – (Maui ITP)
- Maui Long Range Land Transportation Plan (1997)

- Maui Island Plan (2009 draft – not yet adopted)
- County of Maui Bus Routes and Bus Route Assessment (2008)
- County of Kauai General Plan (2000)
- Kauai Long Range Land Transportation Plan (1997)
- County of Hawaii Department of Public Works
- City and County of Honolulu Police Department

County of Hawaii General Plan (2005)

Purpose and Content:

The County of Hawaii General Plan specifies goals and policies for various elements that are considered community assets, such as: Natural Resources, Historic Resources, Public Facilities and Utilities, Recreational Resources, Economic Resources, Housing, Transportation, and Land Use. The General Plan includes the Countywide Capital Improvement Project list, existing conditions, and identified deficiencies for each general district area in the County of Hawaii, including Puna, South Hilo, North Hilo, Hamakua, North Kohala, South Kohala, South Kona, North Kona, and Ka'u. The General Plan encourages, but does not mandate, the creation of Community Development Plans for each district area. Once the areas of concern for the Pedestrian Master Plan are determined, the relevant Community Development Plans were reviewed to inform the development of project solutions. The General Plan calls for submitting an annual report to the County Council with the purpose of reconciling the capital and operating budgets, and prioritizing and assessing competing community needs from a Countywide perspective.

Findings related to the Statewide Pedestrian Master Plan:

Policy 13.1.3(e) encourages the development of a multi-modal transportation plan for the island that includes the identification and location of bicycle and pedestrian systems in accordance with the appropriate federal and state agencies. Chapters 12 and 13 of the Plan identify several policies that recognize the development of pedestrian access trails that connect major parks and destinations across the island. The policies identified in Chapter 12 support a series of recreational goals to maintain the beauty of recreation areas and provide a diversity of environments for active and passive pursuits. The policies in Chapter 13 support general transportation goals that guide the maintenance and development of a multi-modal system. The specific policies are listed below in Table 5.

Table 5 – Policies that Recommend or Encourage Pedestrian Access in Each County District

District	Policy
Puna	12.5.1.2(e) - Develop the expanded Isaac Hale Beach Park recreation area. Provide trail access to Keahialaka Spring and Pond and Mahinaakaka Heiau.
South Hilo	12.5.2.2(c) - Encourage the development of a park along both sides of the Wailuku River in the central business district of Hilo and provide major viewpoints with pedestrian walkways and benches.
South Hilo	12.5.2.2(f) - Expand the depth of coastal recreation areas. Park areas should be connected with trails to increase public access.
South Hilo	12.5.2.2(l) - Provide trail and access systems to recreational areas.
South Kohala	12.5.6.2(j) - Develop trail systems linking residential areas to Waimea's urban center.
South Kohala	12.5.6.2(l) - Encourage development of Waimea Trails & Greenways and Waimea Nature Park (Ulu Laau).

District	Policy
North Kona	12.5.7.2(b) - Encourage the development of Alii Drive within the Kailua Village area as a pedestrian mall with open space areas for passive recreation.
North Kona	12.5.7.2(k) - Encourage the development of historic trails.
North Kona	13.2.5.8(p) - Work with the State and the adjacent landowners in establishing the old railroad right-of-way as a pedestrian and bicycle right-of-way.
General Transportation Goal Countywide	13.1.3(e) - Develop a comprehensive, islandwide multi-modal transportation plan that identifies the location and operation of automobile, mass transit, bicycle and pedestrian systems, in coordination with appropriate Federal and State agencies.
General Transportation Goal Countywide	13.1.4(b) - Transportation facilities and systems shall conform to the requirements of the Americans with Disabilities Act (ADA).
General Transportation Goal Countywide	13.2.3(f) - Consider the development of alternative means of transportation, such as mass transit, bicycle and pedestrian systems, as a means to increase arterial capacity.
General Transportation Goal Countywide	13.2.3(l) - Adopt street design standards that accommodate, where appropriate, flexibility in the design of streets to preserve the rural character of an area and encourage a pedestrian-friendly design, including landscaping and planted medians.
General Transportation Goal Countywide	13.2.3(o) - Explore means and opportunities to enhance the shared use of the island's roadways by pedestrians and bicyclists, in coordination with appropriate government agencies and organizations.

Source: County of Hawaii General Plan; Chapters 12-13.

A series of maps in the General Plan present existing and future proposed highway or arterial roadway facilities. It is assumed that sidewalk facilities would be present on proposed arterial facilities unless otherwise noted on engineering design documentation (i.e. plan sheets, cross-sections, etc). Sidewalks are not assumed to be present on existing or proposed highway facilities unless otherwise noted on existing design documentation (such as as-builts or design cross-sections).

Potential use in developing:

Project Purpose and Criteria:

The project purpose and criteria will reflect the goals and policies in the County of Hawaii General Plan.

Project Alternatives and Solutions:

Alternatives and solutions will reflect the context of the County of Hawaii, and will account for the projects and priorities already identified in the Plan.

County of Hawaii Long Range Land Transportation Plan (1998)

Purpose and Content:

The purpose of the County of Hawaii Long Range Land Transportation Plan (LRLTP) is to identify major land-transportation improvements needed to support the Big Island's projected growth through the year 2020. It

consists of a series of goals and objectives that reflect community interests including transportation issues related to transit and non-motorized systems. However, much of the alternatives and recommendations in the LRLTP are based on travel demand modeling scenarios and consist of roadway circulation improvements, such as recommended lane widening, street extensions, development of new arterial streets, and revisions to transit routes. The LRLTP recognizes that the County "may wish to consider adopting a policy to specifically foster bicycle-usage and pedestrianism, setting target levels for increased use and target levels for reduction of vehicle-involved injuries and fatalities to bicyclists and pedestrians."[8]

Findings related to the Statewide Pedestrian Master Plan:

The LRLTP identifies system deficiencies among roadway and transit facilities, and also identifies a need for additional non-motorized facilities. Potential non-motorized corridors are discussed for Hilo, Kona, Waimea, Puna, and other smaller roadway areas. Conceptual "non-motorized roadways" are specifically depicted in a series of figures for the Hilo, Kailua-Kona, Waimea, and Puna areas. However, the non-motorized corridors are not included in the "Recommended Cost Feasible Plan" (County CIP) and funding has not yet been identified for these conceptual corridors in the LRLTP. The conceptual non-motorized roadways are not located on state route facilities. In addition, goals and objectives related to the development of pedestrian facilities are listed in Table 6 below.

Table 6 – Policy Objectives Related to Pedestrian Facilities in County of Hawaii

2-1	Provide programs which emphasize person trip planning other than by car.
2-2	Provide bikeways and safe crossings from residential areas to schools.
2-3	Support a safe pedestrian orientation in town centers by building by-passes for through vehicular traffic.
2-4	Create a series of trails and greenways that can be used for transportation; include both trails on roads and trails on their own right of way.
4-4	Encourage walkways, telecommuting, and other non-polluting modes.
4-5	Encourage safe and convenient transportation that is low-cost, energy efficient, and non-polluting.
5-4	Provide sidewalks, bikeways, and bicycle storage facilities at transportation terminals and work centers.
6-1	Ensure that transportation projects meet Federal and State standards, so they are eligible for Federal and State funding.
6-5	Apportion transportation funds for enhancements including pedestrian provisions and bikeways, scenic easements, historic highways, landscaping, and mitigation due to runoff.

Source: County of Hawaii LRLTP (1998), Chapter 3.

A list of highway capacity enhancements, such as widening and extension projects, is included in the LRLTP. However, projects specific to the development of pedestrian facilities are not included.

[8] County of Hawaii Long Range Land Transportation Plan. 1998. Pg. 73.

Potential use in developing:

Project Purpose and Criteria:

The project purpose and criteria will reflect the goals and policies in the County of Hawaii LRLTP.

Project Alternatives and Solutions:

Alternatives and solutions will reflect the context of County of Hawaii, and will account for the projects and priorities already identified in the Plan. The project alternatives should be consistent with current roadway design guidelines and standards.

Oahu General Plan (2006)

Purpose and Content:

The General Plan for the City and County of Honolulu is a comprehensive statement of objectives and policies intended to establish the long-range aspirations of Oahu's residents and the strategies and actions to achieve them over a 20-year horizon. The General Plan consists of eleven subject areas that provide the framework for the policies and objectives. The transportation policies and objectives address the need for a balanced system for pedestrians, bikeways, transit, and vehicles.

Findings related to the Statewide Pedestrian Master Plan:

Development of the transportation system on Oahu is driven by two main objectives that each serve as an umbrella for policies that guide specific development or enhancement of system facilities. There are two policies focused on the provision and improvement of transportation facilities in the Ewa, Central Oahu, and Pearl City-Hawaii Kai corridors. Policies related to the development of pedestrian facilities are listed in Table 7 below.

Table 7 – Policy Objectives Related to Pedestrian Facilities in Oahu

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: (d) Pedestrian walkways-for getting around Downtown and Waikiki, and for trips to schools, parks, and shopping centers.
Policy 4	Improve transportation facilities and services in the Ewa corridor and in the trans-Koolau corridors to meet the needs of Ewa and Windward communities.
Policy 8	Make available transportation services to people with limited mobility: the young, the elderly, the handicapped, and the poor.
Policy 11	Make public, and encourage private, improvements to major walkway systems.

Source: Oahu General Plan (2006), Section V.

A listing of transportation improvement projects are listed in the Oahu Regional Transportation Plan and Transportation Improvement Program (TIP). Pedestrian-related projects included in the TIP include shared-use bike path projects also found in the Oahu Bike Plan and Bike Plan Hawaii. The shared-use projects included in the TIP are listed in Table 8 below.

Table 8 – Shared-Use TIP Projects

TIP Project No.	Project Name and Description
S-82	Leeward Bikeway, Phase 2, Hawaii Railroad Society Train Station to Lualualei Naval Road
S-09	Fort Barrette Road, Widening, Farrington Highway to Barber's Point Gate
S-03	Farrington Highway, Bridge Rehabilitation, Kaupuni Stream Bridge

Source: FYs 2008-2011 Transportation Improvement Program Project Listing as of Revision #3, Oahu MPO 2008-2011 TIP. http://www.oahumpo.org/tip_docs/TIP08-11/TIP08-11Revis/TIP_Proj_List-as-of-Rev3.pdf

Potential use in developing:

Project Purpose and Criteria:

The project purpose and criteria will take into consideration the pedestrian-related transportation policies in the Oahu General Plan.

Project Alternatives and Solutions:

Project alternatives should consider the programmed shared-use projects from the Oahu TIP and Oahu Bike Plan.

Oahu Regional Transportation Plan 2035

Purpose and Content:

The Oahu Regional Transportation Plan 2035 (ORTP 2035) is a blueprint intended to serve as a guide for the development of an urban transportation system that addresses mobility issues and transportation needs on Oahu. It is a multifaceted plan that integrates planned growth patterns and reflects available financial resources over the next 25 years. It includes a vision and goals, identifies projects, and provides an implementation program for mid- and long-range transportation investments across Oahu. Any future transportation improvement for Oahu that receives federal transportation funds must be consistent with the ORTP in order to be eligible for these funds. The ORTP 2035 identifies the City and County of Honolulu and the unincorporated area of Kapolei as the primary growth centers of Oahu and designates these areas for targeted growth over the next 25 years. The Plan is a multi-modal plan that focuses on improving safety and addressing congestion through improvements to the vehicular, transit, and non-motorized (bicycle and pedestrian) systems.

Findings related to the Statewide Pedestrian Master Plan:

The ORTP 2035 incorporates the Oahu elements of Bike Plan Hawaii and the "Priority One" projects identified in the Honolulu Bicycle Master Plan. This provides Honolulu with an integrated network of on-road bike lanes and off-road shared-use paths to link people with their favorite destinations. In past plans, pedestrian facilities were shared with bicycle facilities. Several projects related to pedestrian access are included in the ORTP 2035 and they are listed in Table 9. Policy goals in the ORTP 2035 that are relevant to the Statewide Pedestrian Master Plan are listed in Table 10.

Table 9 – Pedestrian-related Projects in the ORTP 2035

Project #	Name and Description	Estimated Cost (Millions $)
2	Bike Plan Hawaii – Oahu (2011-2020) – Implement Oahu elements of the State of Hawaii's Bike Plan Hawaii	$47.3
3	Oahu Bike Plan (2011-2020) – Implement City and County Bike Projects (Priority One)	$18.6
4	Enhancement Projects (2011-2020) – Implement enhancement projects, including but not limited to projects from the Transportation Enhancement Program for Oahu.	$8.7
10	Kalanianaole Highway, Safety & Operational Improvements: Olomana Golf Course to Waimanalo Beach Park – Construct safety and operational improvements between the Olomana Golf Course and Waimanolo Beach Park. Specific safety and operational improvements include construction of turning lanes, sidewalks, wheelchair ramps, bike paths or bike lanes, traffic signal upgrades, utility relocation and drainage improvements	$47.6
11	Kamehameha Highway, Safety Improvements: Haleiwa to Kahaluu - Construct safety improvements along Kamehameha Highway, from Haleiwa to Kahaluu. Safety improvements include turn lanes, guardrails, signage, crosswalks, etc. to improve safety. Widening of Kamehameha Highway will only be in areas where needed for storage/turn lanes safety improvements.	$19.3

Source: *Table 1 – Oahu Regional Transportation Plan 2035*, June 2010. Oahu Metropolitan Planning Organization.

Table 10 – Pedestrian-related Policy Goals in the ORTP 2035

Policy Area	Goal	Pedestrian-Related Objective
Transportation Facilities	Provide an inclusive, multi-modal transport system whose connectedness provides efficient means for users desiring to move about this island by bicycle, freight carrier, pedestrian facility, road, transit service, and intermodal connectors.	▪ Develop, operate, and maintain alternative transportation facilities, including bikeways, walkways, and other accessible pedestrian, bicycle, and environmentally-friendly elements. ▪ Enhance the integration and connectivity of the regional transportation system. ▪ Provide rehabilitation, renewal, and modernization of facilities in sufficient magnitude to ensure system preservation and continued, effective operation.
Transportation Operations & Services System	Develop and maintain Oahu's island-wide transportation system to ensure efficient, safe, convenient and economical movement of people and goods.	▪ Promote planning, design, operation, maintenance, and construction of transportation facilities and systems to support economic development and vitality. ▪ Ensure that Oahu's transportation system is planned, designed, constructed, maintained, and operated in an integrated and cost-effective manner. ▪ Ensure user and community safety, and practical systems for the disabled by incorporating the priorities, programs, physical design and operation of transportation facilities, and other improvements, consistent with the *Hawaii Strategic Highway Safety Plan* and *Americans with Disabilities Act Accessibility Guidelines*.

Policy Area	Goal	Pedestrian-Related Objective
Human Environment and Quality of Life	Develop, operate, and maintain Oahu's transportation system in a manner that supports community-wide values related to health, safety, and civil rights.	▪ Maintain and upgrade existing facilities and design future transportation facilities in a manner that complies with local urban design policies and regulations. ▪ Encourage innovation in planning, design, construction, operation, and maintenance of transportation services and facilities.
Land Use and Transportation Integration	Develop, operate, and maintain Oahu's transportation system in a manner that integrates effective land use and transportation with established sources of funding in a fair and equitable manner.	▪ Support land use development policies, such as Transit-Oriented Development, that capitalize on the efficient use of the transportation system and reduce vehicular trip-making and vehicle miles traveled.

Potential use in developing:

Project Purpose and Criteria:

The Statewide Pedestrian Master Plan purpose and criteria will be consistent with goals listed in the regional transportation plan as applicable.

Project Alternatives and Solutions:

Alternatives and solutions will reflect the context of Oahu, and will account for the projects and priorities already identified in the Plan.

Draft Oahu Bike Plan (2009)

Purpose and Content:

The Draft Oahu Bike Plan provides a strategy for better integrating bicycling into the City and County of Honolulu's transportation system. It provides policy and program recommendations and identifies an integrated network of on-road bike lanes and routes, and off-road shared use paths that link people with destinations. The Draft Oahu Bike Plan updates and expands the 1999 Honolulu Bicycle Master Plan and provides recommendations for the development of a regional network where bicycle linkages at specific locations complement the bicycle network in the statewide Bike Plan Hawaii.

Findings related to the Statewide Pedestrian Master Plan:

The Draft Oahu Bike Plan defines the types of bike facilities that make up the network. Most of the recommended bikeways are within existing street rights-of-way. However, the Draft Oahu Bike Plan distinguishes shared-use paths as being located outside street right-of-ways. The recommended shared-use path locations within state owned right-of-way are listed in Table 11.

Table 11 – Proposed Shared-Use Paths within State-owned Right-of-Way

Project ID	Name	Description	Owner	Length (miles)	Cost ($ 1,000)
1-6	North-South Road	Farrington Highway to Essex Road	State	3.72	N/A
1-20	Aloha Tower Path	Aloha Tower to Waterfront Park	State/County	0.99	282
1-35	Waianae Coast Path	Lualualei Navel Road to Makaha	State/County	8.16	7,520
2-7	Farrington Highway (Waipahu)	Fort Weaver Road to Kamehameha Highway	State	2.89	3,004
2-10	Kamehameha Highway (Mililani)	Meheula Parkway to Ka Uka Blvd	State	2.76	130
2-11	Kamehameha Highway (Waipio)	Waipio Uka Street to Waipahu Street	State	0.91	54
2-40	Coral Sea Road-Saratoga Avenue	Around Barbers Point Airfield	State	5.51	N/A
2-42	Farrington Highway Bike Path	Kapolei Golf Course to North-South Road	State	1.10	1,014
2-45	Fort Weaver Road	Kolowaka Drive to end of public road	State	2.93	2,542
2-54	Leeward Bikeway (Phase 2)	Lualualei Naval Road to Philippine Sea Road	State	9.06	6,075
2-93	Haleiwa-Waialua Beach Park	Kaika Bay and Haleiwa Beach Park	State/County	2.07	1,503
2-135	Pearl Harbor Bike Path (Arizona Memorial)	Kamehameha Hwy to Arizona Memorial	State	0.75	545
2-150	Waterfront Park	UH Medical College to Ala Moana Shared Use Path	State	0.71	516
3-34	H-1 Makai Bike Path	North South Road to Kunia Road	State	2.63	2,424
3-35	H-1 Mauka Bike Path	Makakilo Drive to Kunia Road	State	2.67	2,461
3-75	Old Pali Road	Pali Lookout to Old Pali Highway	State	1.50	336

Source: Draft Oahu Bike Plan (2009), Table 5.

Potential use in developing:

Project Purpose and Criteria:

The project purpose and criteria will reflect the policies and goals of the Draft Oahu Bike Plan as appropriate.

Project Alternatives and Solutions:

The project alternatives will account for the shared-use projects within HDOT jurisdiction that are identified in the Draft Oahu Bike Plan.

County of Maui General Plan 2030 – Countywide Policy Plan (2010)

Purpose and Content:

The Maui Countywide Policy Plan was adopted on March 24, 2010. It is the first component of the decennial General Plan update, which provides a policy framework for the goals and policies that reflect the identified values of the County of Maui and future growth. The Countywide Policy Plan also serves as an overarching umbrella framework for the Maui Island Plan and Maui's nine Community Development Plans (which will be updated during the 2010 – 2018 timeframe). In terms of transportation, the Countywide Policy Plan acknowledges that diversification of the County's transportation network is essential to building capacity within the existing overtaxed transportation system. The plan encourages coordination among the county, state and federal governments to provide equal access and many options, including bikeways and pedestrian corridors, to move safely around the islands. Implementation of the Countywide Policy Plan is broken out into eleven key strategies that provide a basis for the goals and policies that guide county/island-wide development.

Findings related to the Statewide Pedestrian Master Plan:

The Maui Countywide Policy Plan includes several goals and policies that identify and encourage the development of pedestrian facilities in order to meet the established goals and strategies of implementing the General Plan. Capital Improvement Projects for the County of Maui are identified in the Maui Island Plan. Capital Improvement Projects for Molokai and Lana'i will be identified in the Molokai and Lana'i Community Plans (to be updated during 2010-2012. Goals and policies in the Maui Countywide Policy Plan that identify a need for pedestrian facilities or encourage their development are listed in Table 12.

Table 12 – Transportation Policies that Recommend or Encourage Pedestrian Access

Strategy	Policy
H – Diversify Transportation Options	County of Maui will have an efficient, economical, and environmentally sensitive means of moving people and goods.
1.d	Increase route and mode options in the ground-transportation network.
1.k	Provide and encourage the development of specialized transportation options for the young, the elderly, and persons with disabilities.
2.a	Make walking and bicycling transportation safe and easy between and within communities.
2.b	Require development to be designed with the pedestrian in mind.
2.c	Design new and retrofit existing rights-of-way with adequate sidewalks, bicycle lanes, or separated multi-use transit corridors.
2.d	Support the development of a countywide network of bikeways, equestrian trails, and pedestrian paths.
2.e	Support the reestablishment of traditional trails between communities, to the ocean, and through the mountains for public use.
2.f	Encourage educational programs to increase safety for pedestrians and bicyclists.

Source: County of Maui General Plan 2030, Countywide Policy Plan. Section IV. 2010.

Potential use in developing:

Project Purpose and Criteria:

The purpose and criteria for the Statewide Pedestrian Master Plan should consider the goals, policies, and action plan items that are identified in the County of Maui General Plan and Maui Island Plan.

Project Alternatives and Solutions:

Alternatives and solutions will reflect the context of Maui, and will account for the projects and priorities already identified in the Plan. The projects and alternatives would reflect the goals and policies in the County of Maui General Plan. Funded roadway improvement projects that include sidewalk or other pedestrian features would be considered as future projects.

Joint State/County Maui Interim Transportation Plan (2002)

Purpose and Content:

The purpose of the Joint State/County Maui Interim Transportation Plan (Maui ITP) is a joint effort between County of Maui and the Hawaii Department of Transportation (HDOT) to develop and provide interim solutions for traffic congestion and safety in Maui while long-term solutions are being developed. Discussion of non-motorized modes, transit, or other modes is not included in the Plan. The Maui ITP is also intended to consolidate efforts from the West Maui Traffic Action Committee and the Mayor's Transportation Action Committee to provide mitigation alternatives for traffic congestion solutions.

Findings related to the Statewide Pedestrian Master Plan:

The collaborative efforts of the agencies and groups that were involved in formulating this plan were driven by a need to fulfill a legislative mandate to update transportation program improvements under SAFETEA-LU requirements. The Maui ITP focuses primarily on congestion generated by increased vehicular traffic and associated operational impacts because the transportation plans generated prior to SAFETEA-LU were not required to consider multi-modal surface transportation improvements. Therefore, multi-modal solutions that include pedestrian facilities are not included in the Maui ITP. Recommended actions and alternatives discussed in the Maui ITP strictly consist of traffic operational improvements, parking strategies, development of alternative routes, and some discussion of increased transit mode share. Pedestrian-related projects are not included in this plan. The analysis of traffic congestion in the Maui ITP focuses in on the Central, East (Upland), West, and Southern areas of Maui.

Potential use in developing:

Project Purpose and Criteria:

The project purpose and criteria could consider the focal areas of traffic congestion discussed in the Maui ITP, as it relates to pedestrian safety criteria.

Project Alternatives and Solutions:

Alternatives and solutions will reflect the context of Maui, and will account for the projects and priorities already identified in the Plan as it relates to safety. Funded roadway improvement projects that include sidewalks should be considered as future projects.

Maui Long Range Land Transportation Plan (1997)

Purpose and Content:

The Maui Long Range Land Transportation Plan is intended to provide an update of the long-range land transportation plan for the County of Maui up to year 2020. The plan contains a financial element (Table 5) that identifies both current and potential future sources of revenue that may be available for implementing the plan. Although the primary purpose of the plan is to update and augment the previous plan, the 1997 long range land transportation plan was developed to fulfill the requirements of the 1991 Intermodal Surface Transportation Efficiency Act (ISTEA). The plan includes a discussion and list of long range transportation improvements which were identified through a travel demand forecasting model.

Supplemental to the long range land transportation plan is the inclusion of the short-range improvement program for the Kihei residential area. The purpose of including the analysis and discussion of this area is to identify and recommend improvements for the Kihei area with the goal of implementing them either within a ten-year timeframe or before 2005.

Findings related to the Statewide Pedestrian Master Plan:

The 2020 County of Maui Long Range Land Transportation Plan consists of two elements, the Highway Element and the Bikeway Element. The highway element consists of major highway improvements and the bikeway element includes all elements of Bike Plan Hawaii 2003 that are relevant to the County of Maui. Bike path projects included in Bike Plan Hawaii are assumed to function as shared use facilities unless otherwise stated in the Plan. However, specific pedestrian, shared-use, or bikeway facility projects are not listed or included as improvement projects in the 1997 County of Maui Long Range Land Transportation Plan.

Potential use in developing:

Project Purpose and Criteria:

The project purpose and criteria will consider the highway and bikeway element of the Maui LRLTP as it relates to safety or circulation on state owned shared-use facilities.

Project Alternatives and Solutions:

Project alternatives and solutions will take Maui roadway design into account. Projects and alternatives could consider pedestrian-related improvements in special improvement districts or private development projects where development is vested and private funding has been contributed, such as in the Kihei residential area.

Maui Island Plan (2009 Draft – Not Yet Adopted)

Purpose and Content:

The Maui Island Plan establishes a directed growth strategy for the Island of Maui through the identification of nine community development plans which the County of Maui has identified as areas appropriate for future urbanization and revitalization. The Maui Island Plan is intended to serve as the central layer of framework that supports the County of Maui General Plan. The Maui Island Plan is broken out into a series of goals, objectives, policies, and action plan items for each element of the Plan.

Findings related to the Statewide Pedestrian Master Plan:

The Capital Improvement Plan (CIP) primarily consists of the action plan items listed for each element throughout the Maui Island Plan. The CIP outlines alternative funding strategies for various transportation and park-related actions and projects that are listed throughout the Plan. The alternative funding strategies range from public-private partnerships to benefit assessment districts. Sidewalks are not assumed to be present in the design of the highway improvement projects included in the CIP and therefore are not included in the list below. Most of the specific actions or projects related to pedestrian facilities listed in the CIP do not currently have an identified funding source. Pedestrian-related actions included in the CIP are listed in Table 13 below.

Table 13 – Pedestrian Related Actions listed in the Maui Island Plan CIP

Land Use	7.3.3-Action 3	Establish standards and priorities for streetscape beautification, public amenities, pedestrian and bicycle circulation, parking, redevelopment target areas, transit amenities, sense of place and building form/design guidelines.	2010-2015	0	N/A
Land Use	7.3.3-Action 5	As part of the Community Plan Updates, prepare streetscape, pedestrian circulation, bikeway and greenway master plan elements.	2010-2021	100	County
Infrastruc-ture	6.4.3-Action 1	Adopt and amend County regulations to incorporate design standards for roadways, transit, and pedestrian facilities.	2010-2015	TBD	County
Infrastruc-ture	6.8.2-Action 2	Amend the Zoning and Subdivision Regulations to require development within the vicinity of public facilities to provide bike/pedestrian-friendly infrastructure and traffic calming features.	2010-2015	N/A	N/A

Source: Appendix C – Maui Island Plan 2030 Implementation Program Schedule. *Draft Maui Island Plan,* 2009

Potential use in developing:

Project Purpose and Criteria:

The project purpose and criteria will reflect the goals and policies, and pedestrian-related action items in the Maui Island Plan. The plan will be also be used to develop project criteria related to funding availability on Maui.

Project Alternatives and Solutions:

The project alternatives would seek consistency with the Maui Island Community Development Plans as appropriate, and would account for projects and priorities already identified. This will be further explored later in the project as areas of concern are identified.

County of Maui Bus Routes and Bus Stop Assessment (2008)

Purpose and Content:

The purpose of the Maui Bus Routes and Bus Stop Assessment is twofold. First the Assessment identifies areas where a need for improved service exists. Second, the Assessment identifies future improvements to system infrastructure and selects appropriate locations for future bus stops. This is relevant for the Statewide

Pedestrian Master Plan, because most transit riders need to walk to their stops (or to the side of the road for transit service) – and the quality and location of the pedestrian system and linkages to transit stops affect transit ridership. To address future growth and increased ridership, the Assessment specifically inventories and identifies deficiencies among the Maui Bus transit system's seven bus routes and its bus stops, and makes recommendations and provides specific guidelines and general design standards to address existing and future deficiencies.

The Assessment includes a list of estimated costs of future improvements to bus stops and transit facilities that would enhance the Maui Bus transit routes.

Findings related to the Statewide Pedestrian Master Plan:

The Maui Bus Routes and Bus Stop Assessment recognizes the regulatory requirements of the American with Disabilities Act of 1990 (ADA) and provides design requirements for pedestrian landings at bus stops. Sidewalk deficiencies are discussed briefly in the assessment; specific missing sidewalk locations are not identified.

A full list of pedestrian deficiencies at transit stops includes items such as sidewalk obstructions, areas where the sidewalk is not connected to the curb or a pedestrian pad, bus stop areas with missing sidewalks, and areas with missing curb ramp connections. This list can be further explored as the areas of concern are narrowed through the planning process for the Statewide Pedestrian Master Plan.

Potential use in developing:

Project Purpose and Criteria:

Criteria for project prioritization will likely include access to transit. This is also a likely candidate for criteria relating to identification of areas of concern.

Project Alternatives and Solutions:

Project alternatives and solutions will include options for improving bus stop access on Maui and all islands.

County of Kauai General Plan (2000)

Purpose and Content:

The County of Kauai General Plan provides guidance for land use regulations, the location and character of new development and facilities, and for planning county and state facilities and services. It consists of goals and policies that are intended to guide county decision-making by mapping the direction of future development, by describing the type of development that is desirable, and by setting priorities for public improvements. The General Plan also establishes a framework and priorities for future community-level planning and long range planning for public facilities. The General Plan is the primary policy document that directs long-range development, conservation, and the use and allocation of land and water resources in County of Kauai.

The General Plan encourages the role of Community Development Plans in serving as a primary guide for managing future growth and community assets. The Plan also presents three scenarios that identify a range of needed roadway improvements to meet expected traffic demand in 2020.

Findings related to the Statewide Pedestrian Master Plan:

The County of Kauai General Plan identifies a need for improving future circulation patterns. Specifically, the Plan suggests the development of efficient public transit services and facilities to support non-motorized

transportation to improve circulation on the island. Location–specific improvement recommendations related to pedestrian facilities are not specifically included in the list of recommended roadway projects. However, the plan recognizes the walkable character and existing pathways in the Town of Princeville and the historic Town of Kapaa. Pedestrian-related policies in the County of Kauai General Plan are summarized in Table 14.

Table 14 – Pedestrian-related Policies in Kauai

Goal	Policy
6.6.2 (a-1)	To enhance Town Centers, the County should: (1) Provide sidewalks or unpaved pedestrian pathways along the main roads, matching the character of the town.
4.8.3 (b)	Develop ground transportation facilities, pedestrian circulation improvements, and terminal facilities at Nawiliwili Harbor that will accommodate 2,000-passenger cruise ships.
6.4.4.2 (c-2)	Develop a network of pedestrian and bicycle trails connecting Koloa, Poipu, and Kukuiula

Potential use in developing:

Project Purpose and Criteria:

The purpose and criteria development for the Statewide Pedestrian Master Plan will reflect the unique context of Kauai.

Project Alternatives and Solutions:

Alternatives and solutions will reflect the context of Kauai, and will account for priorities expressed in the County of Kauai General Plan.

Kauai Long Range Land Transportation Plan (1997)

Purpose and Content:

The Kauai Long Range Land Transportation Plan is an island-wide regional transportation plan for Kauai that identifies the proposed improvements for the projected future growth over the next twenty-five year period, or up to 2020. The development of the transportation plan is undertaken through the countywide transportation planning process, which is cooperative and comprehensive. In addition to the assessment of roadway conditions and improvements, other modes of transportation, such as public transit and bicycle and pedestrian facilities, are considered and assessed where appropriate in order to mitigate the identified land transportation deficiencies.

Findings related to the Statewide Pedestrian Master Plan:

The Kauai Long Range Land Transportation Plan does not identify specific pedestrian facilities or any location-specific deficiencies. However, through discussion of the different types of bikeways on Kauai, the Long Range Plan implies that deficiencies and recommendations found among existing multimodal bikeway paths would apply to shared pedestrian facilities.

The prioritization of short-term improvements largely consists of roadway widening and intersection improvement projects. Shared-use or multimodal bikeway paths are not included in the prioritization list. The plan also recognizes Citizen Advisory Committee (CAC) comments suggesting that pedestrian and bicycle paths should

be required along all roadways within a one-mile radius from schools. Also, CAC comments suggest that bikeways, including shared use paths, should be developed across the island, share internal and external connections with adjacent communities, and should be required in new developments.

Implementation of the Short-term Improvement Projects is supported primarily by a mix of state and county funding sources, and contributions from private development when applicable. Crosswalks or sidewalks are not assumed to be present at highway facilities unless otherwise stated on existing design documentation (i.e. plan sheets, as-builts, cross-sections, etc). However, crosswalks are present at the short term improvement highway intersection locations in Table 15. The Plan recognizes that shortfalls of funding are expected in each phase of implementation, and private sector funding may need to be pursued to assist in funding regional improvements on a pro-rated basis. [9]

Table 15 – Short Term Improvement Highway Intersection Locations with Crosswalks

Project ID	Project Description
3	Intersection of Kaumualii Highway and Koloa Road
18	Intersection of Kuhio Highway and Haleilio Road

Source: Kauai LRLTP (1997), Appendix C, Figure 1.

Potential use in developing:

Project Purpose and Criteria:

The purpose and criteria development for the Statewide Pedestrian Master Plan will reflect the unique context of Kauai.

Project Alternatives and Solutions:

Alternatives and solutions will reflect the context of Kauai, and will account for priorities and values expressed in the Kauai LRLTP.

County of Hawaii Department of Public Works Programs

The County of Hawaii Department of Public Works (DPW) conducts many activities to help improve pedestrian safety and increase awareness. DPW reaches out to government agencies and non-profit organizations, such as PATH (Peoples Advocacy for Trails Hawaii), to help deliver these programs. Examples of these programs and brief descriptions are provided below:

- **Rules of the Road Brochure & Radio Ads:** This program provides six traffic safety messages targeting motorists and pedestrians in both brochure and radio ad format. The messages will also appear on the agency's improved website.
- **Bus Ads:** Pedestrian safety display cards appear on 75 Hele-On buses.

[9] Kauai Long-Range Land Transportation Plan, 1997. Page VII-3.

- **Halloween Bags**: Reflective Trick or Treat Halloween bags are imprinted with traffic safety tips are distributed to 14,000 public and private elementary school children. Another 10,000 are available at the Kona and Hilo police stations, the Prosecutor's office in Hilo, and at the Public Works Hilo and Kona offices.

- **Stickers and Bookmarks**: Stickers and bookmarks with seven traffic safety messages are distributed to children ages 3-8 with the Halloween bags. These stickers and bookmarks are also distributed at Police Keiki ID programs, during Police Week, at the elementary school DARE presentations, and at Police stations in Hilo and Kona.

Potential use in developing:

Project Purpose and Criteria:

The purpose and criteria development for the Statewide Pedestrian Master Plan should consider pedestrian safety and safety awareness needs and the unique programs underway at DPW.

Project Alternatives and Solutions:

Project alternatives and solutions will consider educational and enforcement programs already in place, and will account for priorities and values expressed at DPW.

City and County of Honolulu Police Department Programs

The Honolulu Police Department conducts many activities to help improve pedestrian safety and increase awareness. Examples of these programs are described below:

- **Aloha No Na Kupuna/Senior Safety Events:** Aloha No Na Kupuna promotes senior safety and celebrates the spirit of giving in the lives of seniors who have been affected by or are at risk of abuse, neglect, or financial hardship. The program is designed to provide senior citizens with safety and crime prevention information. The program provides educational safety presentations on topics such as pedestrian safety, identity theft, and personal safety.

- **Saving Pedestrians and Motorists (SPAM):** The SPAM program is a monthly targeted campaign where officers in plain clothes cross the street and radio uniformed officers when a traffic violation related to pedestrian safety occurs.

- **Safety Information Speaker Events:** The Community Affairs Division of the Honolulu Police Department coordinates a Speaker's Bureau (in conjunction with Walk Wise Hawaii), to provide speakers on a variety of topics, including senior pedestrian safety, bicycle safety, and traffic safety.

- **Public Service Announcements (PSAs):** Thirty-second video PSAs about speeding and pedestrian safety in crosswalks are provided on You Tube and linked to the department's website.

- **Pedestrian and Driver Safety Tips:** Twenty two Pedestrian and Driver Safety Tips are provided in brochure format and also on the department's website.

Website: www.honolulupd.org/community/index.htm

Potential use in developing:

Project Purpose and Criteria:

The purpose and criteria development for the Statewide Pedestrian Master Plan should consider pedestrian safety and safety awareness needs.

Project Alternatives and Solutions:

Project alternatives and solutions will consider educational and enforcement programs, in addition to any infrastructure needs.

Private/Not-For-Profit Programs & Organizations

This section summarizes some private/not-for-profit organizations and groups that promote safe walking and non-motorized activities throughout Hawaii. Review of these programs and organizations will guide the development of the Statewide Pedestrian Master Plan and its efforts to coordinate with public stakeholder groups that currently support and promote pedestrian networks.

Some of the not-for-profit organizations provide technical resources and staff support to implement the federal, state, and local policies that support pedestrian networks. Several of the groups included in this memorandum (such as People's Advocacy for Trails Hawaii and the Hawaii's Opportunity for Active Living Advancement Project) collaborate with the HDOT and other state agencies in initiating, tracking, and developing the grant activity that has funded many of Hawaii's pedestrian, recreational, and non-motorized projects.

The programs and organizations listed below have been important in providing non-motorized safety awareness and education to a wide citizen demographic that includes seniors, children, visitors and residents.

- Peoples Advocacy for Trails Hawaii (PATH)
- Kauai Path
- Hawaii's Opportunity for Active Living Advancement (HO'ALA)
- Waimea Trails and Greenways
- Ho`aloha Aina Organization (Friends of the Land)
- BikeEd Hawaii – Hawaii Bicycle League (HBL)
- Lahaina Bypass Now
- One Voice for Livable Islands Coalition

Peoples Advocacy for Trails Hawaii (PATH)

PATH is a bicycle and pedestrian advocacy organization that focuses on advocating the creation of an interconnected system of pathways and bikeways on Hawaii Island and throughout the state. The organization provides support to non-profits applying for funding for projects under FHWA's Safe Routes to School and Recreational Trails Programs. The PATH organization also provides grant-writing assistance for state and local agencies seeking pedestrian and non-motorized project funding. PATH has identified a series of "priority projects" considered by the organization to be important toward preserving historic trails and completing the non-motorized network on Hawaii Island.

On Hawaii Island, PATH also coordinates an in-school pedestrian education program for students in 1st, 2nd, and 3rd grade as part of its comprehensive traffic safety education program. The goal of the PATH Pedestrian

Education Program (Ped Ed) is to teach children essential pedestrian safety behaviors that they will practice and further develop as they walk along and across streets and parking lots, get into and out of vehicles, and play in areas where motor vehicles are likely to be present. Schools sign up for the program through PATH's Education Coordinator. PATH also provides trainings throughout the State of Hawaii for communities that want to teach Ped Ed. Additional logistical and materials support for scheduling and delivering Ped Ed in local schools is also made available.

Additionally, PATH conducts public awareness campaigns, such as the "Share the Road with Aloha" motorist awareness campaign, to increase driver sensitivity to the presence and characteristics of pedestrians. Campaign activities typically include distributing safety brochures, providing safety information in newspaper columns, and event tabling.

Website: http://ww.pathhawaii.org

Kauai Path

Kauai Path, Inc. is a community organization with the vision of Kauai residents working together to preserve, protect, and extend access island-wide through the design, implementation, and stewardship of non-motorized multi-use paths. Members participate in multiple fundraising activities, volunteer activities, outreach, and participation in citizen advisory committees around the island. Currently, Kauai Path is focusing on the completion of the Ke Ala Hele Makalae trail on the east side, planning for alternatives for a North Shore Path, preservation of the Hapa Trail on the south side, and a west side multi-use path.

Website: http://www.kauaipath.org

Hawaii's Opportunity for Active Living Advancement Project (HO'ALA)

The HO'ALA project is a new school-community-government partnership to fight obesity in Hawaii County. The project is coordinated through a partnership between PATH and the John A. Burns School of Medicine (JABSOM) at the University of Hawaii Manoa. The project's goal is to improve access to active modes of transportation to and from school. The project will work with fourteen elementary schools on Hawai`i Island to help address their traffic safety issues and improve conditions for walking and bicycling to and from school. Eligible schools will receive a comprehensive transportation evaluation from HO'ALA project staff. To qualify, schools must have at least 35 percent of their students eligible for free or reduced-cost lunch. HO'ALA will focus on tracking changes to existing transportation policies and bicycle and pedestrian planning efforts. The program is funded through a grant from the Robert Wood Johnson Foundation as part of the Active Living Research Program. Ho'ala means "to waken" in the Native Hawaiian language.

Website: www.activelivingresearch.org/node/12012

Waimea Trails and Greenways

The Waimea Trails and Greenways project (WTG) is a public-private trail development project being implemented by the Waimea Trails and Greenways Committee of the Waimea Preservation Association. The Waimea Trail on Hawaii Island is intended to serve as a non-motorized corridor along the Waikoloa Stream and provide an accessible connecting pathway between residences, businesses, and schools. The committee is currently negotiating easements with the seven landowners through whose property the trail will extend. The project has qualified for Transportation Enhancement (TE) and Safe Routes to Schools funding.

Website: http://waimeatrails.org/index.html

Ho'aloha Aina Organization (Friends of the Land)

The Ho'aloha Aina Organization is a non-profit volunteer organization focused on the preservation of the South Maui shoreline through the development of the recreational South Maui Coastal Heritage Corridor. The organization has obtained grant-funding to develop the recreational non-motorized corridor under sponsorship from the State Department of Land and Natural Resources, Division of Forestry and Wildlife, Na Ala Hele Trails and Access Program, US Fish and Wildlife Service, and University of Hawaii. The organization coordinates trail building and maintenance events to implement trail expansion and preserve non-motorized safety and access.

Website: www.wix.com/LisBob/South-Maui-Volunteers

BikeEd Hawaii - Hawaii Bicycling League (HBL)

BikeEd Hawaii is a bicycle safety education awareness program implemented by the Hawaii Bicycling League, an advocacy group that promotes cycling for health and transportation benefits. The City and County of Honolulu and HBL have partnered together for the past 23 years to provide the BikeEd program. The program provides hands-on safety education by presenting 45-minute safety education sessions and bringing children onto adjacent public roads. This provides the knowledge and basic skills for bicyclists and pedestrians on how to navigate school neighborhoods safely.

Website: www.hbl.org/bikeed

Lahaina Bypass Now

Lahaina Bypass Now is a volunteer organization of mostly West Maui residents that is committed to work with related agencies toward the development of the Lahaina Bypass as an effort to address traffic circulation through the Town of Lahaina and transportation solutions for Maui. The organization is also working with the State, County, and hotels to develop a continuous, all-weather walkway from 505 Front Street to Honokowai for recreational purposes and an alternative to vehicular traffic.

Website: www.lahainabypassnow.com/index.html

One Voice for Livable Islands Coalition

This coalition is made up of twelve organizations representing a collective membership of over 150,000 Hawaii residents made up of planners, public health professionals, students, bicycle/pedestrian professionals, and concerned citizens. The membership is united behind a shared vision that the islands of Hawaii are comprised of healthy communities where all people can safely walk, bike, or take public transportation to meet their transportation and recreation needs. Member groups include the University of Hawaii, Department of Urban and Regional Planning, AARP Hawaii, Hawaii Bicycling League, Kauai Path, Maui Bicycle Alliance, the Kailua Urban Design Task Force, Lahaina Bypass Now, American Planning Association, Injury Prevention Advisory Committee, Maui Tobacco Free Coalition, the Hawaii Public Health Association, and the Nutrition and Physical Activity Coalition (NPAC).

Other Bicycle, Trail and Non-Motorized Advocacy Groups

There are other groups that support specific visions and goals related to bicycling, non-motorized recreational activities, and/or nature conservation. These groups broadly advocate for bicycle and non-motorized activities, and include the following:

- Sierra Club Hawaii
- Hawaii Pedal Power
- Maui Bicycle Alliance
- South Maui Bicycle Coalition

These groups have all participated in local agency efforts to develop specific non-motorized projects throughout Hawaii.

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Appendix B

Public Involvement Summary

Appendix B: Public Involvement Summary

Public involvement was a key component in the development of the Statewide Pedestrian Master Plan. The public involvement process needs to be comprehensive and flexible to adapt to the diverse communities throughout Hawaii.

Introduction

A public involvement plan was formulated at the beginning of the Statewide Pedestrian Master Plan (Plan) process to ensure that public and stakeholder participation would be integrated into Plan development and help shape the Plan. This appendix provides a summary of the public and stakeholder involvement process, the comments received, and the resulting effect on the final Plan. The public involvement and stakeholder coordination was formulated to be flexible to adapt as appropriate for the range of diverse communities throughout the state. It was important to allow flexibility to meet individual island needs and to reach out to communities that are traditionally underserved. The key principles of the plan are outlined below.

HDOT's Public Involvement Mission Statement

> The HDOT is committed to a comprehensive and fair public involvement process. As stated in the HDOT's 2009 *Public Involvement Policy*, the HDOT "…recognizes the value of public involvement as a programmatic measure that strengthens and solidifies its transportation programs…The HDOT Public Involvement Policy supports and encourages broad-based public involvement in the conception, development, and enhancement of transportation plans, programs, and projects."

Goals of the Public Involvement Plan

The HDOT was committed to an approach that:

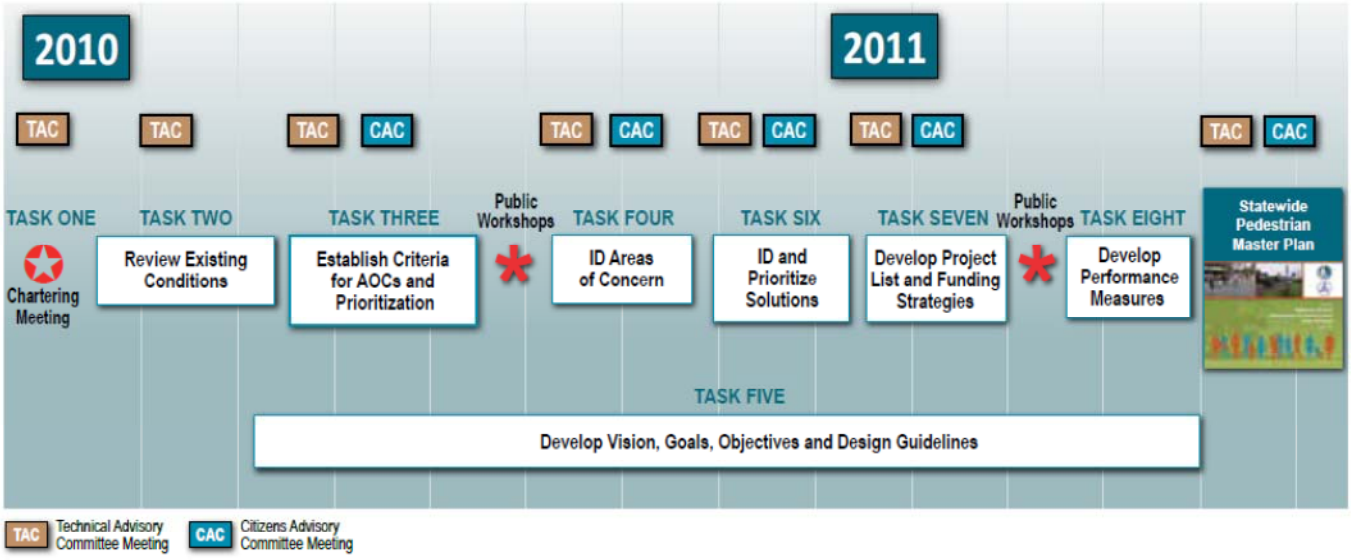
- Increased public awareness and understanding of the transportation planning process in Hawaii.
- Provided an open and transparent decision-making process that was conducted through equitable and constructive two-way communication between the project team and the public.
- Provided early and ongoing opportunities for stakeholders to raise issues and concerns for consideration by the project team.
- Met applicable state and federal laws, regulations, policies, and procedures.
- Proactively informed and encouraged the participation of all stakeholders regardless of race, ethnicity, age, disability, income, or primary language — in accordance with the FHWA Title VI and Environmental Justice guidance. Encouraged broad citizen participation, including citizens who have traditionally been underserved and underrepresented, such as minority and low-income populations.
- Stimulated a broad-based interest in the HDOT's planning activities, and builds widespread community understanding of findings and decisions.

Public Involvement and the Plan Development Process

A key element of the approach was a structured and transparent planning process, or work plan, that clearly identified major tasks and decision points. Thorough and thoughtful consideration of issues during major tasks by all of the project stakeholder groups helped to ensure quality decisions that would not have to be revisited later in the project because something of significance had been omitted or improperly addressed. Public and stakeholder involvement activities, such as meetings and workshops, were integrated into the work plan so that the stakeholder input could shape the decisions made during major tasks in the planning process.

The primary avenues for stakeholder input and discussion were through a Technical Advisory Committee (TAC), a Citizen Advisory Committee (CAC), and general public workshops/meetings. The TAC included staff of federal, state, and local agencies and jurisdictions with interest in the project. The CAC members were selected by the HDOT, after a public announcement for volunteers, to represent a wide range of interests, including affected communities, geographic areas, ages, and diverse populations, as well as a communication link with those interests and communities. The public workshops/meetings were structured in an interactive format so participants were able to share their community values, concerns, and priorities related to walking and the pedestrian environment, as well as validate and provide input on major tasks. Additional outreach avenues included small group meetings, briefings, the project website, and comments submitted through emails and phone calls. The project website provided a venue to facilitate 2-way communication between the public and the project team. Through the website, the project team was able to share key project information, such as involvement opportunities and CAC and public workshop materials, as well as receive comments and feedback. More information on the major tasks and the role of public and stakeholder input in shaping the outcome of the task, as well as concerns expressed by the stakeholders is provided in subsequent sections below. The work plan for the Plan is shown in Figure 1.

FIGURE 1 – STATEWIDE PEDESTRIAN MASTER PLAN WORK PLAN



Chartering Meetings

The first step of the project included kick off meetings with the HDOT to establish critical success factors and lines of communication. Partnering meetings with the stakeholders were conducted to establish the project purpose and context and to outline roles and responsibilities. Goals and objectives for the Plan were also discussed and established.

Validate Existing Conditions

After the project kickoff, the project team developed an inventory of existing conditions. The key decision in this task was to validate the existing conditions work. The TAC and CAC reviewed, validated, and commented on the Existing Conditions work.

Establish Factors and Criteria

The third task included development of two sets of criteria: (1) factors for defining areas of concern for pedestrians on the state highway system; and (2) criteria for project and program prioritization. The factors for defining areas of concern provided a common understanding for how pedestrian issues were identified during the project. The prioritization criteria were used to evaluate projects and programs based on stakeholder values later in the process. Both sets of criteria were reviewed and edited by the TAC and CAC, and discussed at seven public meetings statewide during the first series of public workshops. At this first round of public meetings, the public also helped to validate the review of existing conditions and were asked to share concerns or opportunities on the state's pedestrian system.

Identify Areas of Concern

The fourth major task in the process was the identification of areas of concern. This involved application of the factors selected as part of the previous task to determine which areas to focus on for further study throughout the project. It also included identification of specific issues within those areas of concern. The TAC and CAC reviewed the areas of concern identified and helped to narrow down the list of areas of concern to 31 specific projects and/or programs.

Develop Vision, Goals, Objectives, and Design Guidelines

The fifth major task was a continual process to define and refine the Plan's vision, goals, and objectives. Both the TAC and CAC contributed to the development of the vision, goals, and objectives. The task also included the development of pedestrian design guidelines. The TAC and CAC identified what they wanted to include in a best practice document for pedestrians.

Identify and Prioritize Solutions

The sixth major task developed potential solutions to address the areas of concern issues. The potential solutions were developed by the project team in collaboration with the TAC using best practices from the Hawaii Pedestrian Toolbox, and later validated with the CAC and the general public at six public meetings statewide during the second series of public workshops. The potential solutions were further revised with their input. The task also included the prioritization of the potential solutions by utilizing the prioritization criteria developed early on with the TAC, CAC, and the general public. Prioritization of solutions was shared with the TAC and CAC, and was also discussed during the second series of public workshops.

Develop Project List and Funding Strategies

The seventh major task was to compile the prioritized project list and explore potential funding sources and/or mechanisms. The funding strategies memorandum was reviewed by both the TAC and the CAC for their input.

Establish Performance Measures

For the eighth major task, the TAC and CAC reviewed and recommended performance measures to be used to gauge the success of the Plan goals and objectives over time.

Final Plan Recommendation

The last major task included development of final recommendations for the project. The draft Plan was shared with the TAC and CAC for review and presented at several meetings, including the Hawaii Congress of Planning Officials conference and the Oahu Metropolitan Planning Organization CAC. The draft Plan was also posted on the project website for comments.

Stakeholders and their Involvement

The following sections summarize the specific involvement activities of the TAC, CAC, public workshops, comments submitted through the project's website, emails, phone calls, and small group meetings.

Technical Advisory Committee (TAC)

As noted above, the Technical Advisory Committee (TAC) included staff of federal, state, and local agencies and jurisdictions with interest in the project. Responsibilities of the TAC were to:

- Represent the interests of their agencies or jurisdictions in group deliberations.
- Communicate project progress to their elected or appointed officials, and to agency or jurisdictional colleagues as needed.
- Review recommendations from the public and Project Management Team (PMT), review background materials and make recommendations at the decision points in the project. Provide recommendations to the HDOT.
- Review and comment on technical memorandums and the Plan.

The TAC met seven times throughout the process to assist with gathering data and information to help the technical analyses, help establish factors to determine statewide areas of concern and prioritization criteria, identify and prioritize solutions, review policy and design guidelines, and provide comments on work products throughout the project. TAC members were identified by the HDOT and the counties, and invited by the HDOT Director of Transportation. Invitees included public works and planning staff from all the counties, HDOT technical staff, a representative from the Federal Highway Administration (FHWA), and transportation services staff from the City and County of Honolulu. Table 1 shows the agencies. Table 2 shows the meeting dates and meeting purposes.

TABLE 1
Technical Advisory Committee Members

Agency
HDOT Project Coordination and Technical Services
HDOT Traffic Branch
HDOT Design Branch
HDOT Highway Safety Branch
HDOT Maui District Office
HDOT Kauai District Office
HDOT Hawaii District Office
HDOT Oahu District Office
County of Hawaii Planning Department
County of Hawaii Department of Public Works
County of Hawaii Mass Transit Agency
County of Kauai Planning Department
County of Kauai Department of Public Works
County of Kauai Transportation Agency
County of Maui Planning Department
County of Maui Department of Public Works
County of Maui Department of Transportation
City and County of Honolulu Department of Transportation Services
City and County of Honolulu Public Transit Division
Federal Highway Administration (ex-officio)
Specialty Resources
HDOT Landscape
HDOT Right Of Way Branch
HDOT Office of Civil Rights, Title VI and Environmental Justice
HDOT Office of Civil Rights, ADA Specialist
Department of Land and Natural Resources
Disability and Communications Access Board (DCAB)

TABLE 2
Technical Advisory Committee Meetings and Purpose

No.	Date	Purpose
1	February 4, 2010 1:30-4:30 p.m.	Build common understanding of project purpose and process Identify project objectives and issues Agree on communication and decision-making protocols.
2	April 29, 2010 1:30-3:30 p.m.	Review Meeting #1 outcomes Review and comment on plan and policy research to date Review and comment on existing conditions to date
3	June 8, 2010 1:30-4:30 p.m.	Review Meeting #2 outcomes Review existing conditions comments Establish areas of concern criteria recommendation Establish project/program prioritization criteria recommendation and criteria weights
4	August 18, 2010 1:30-4:30 p.m.	Review Meeting #3 outcomes Review CAC and public comments on existing conditions, factors for developing areas for concern, and project/program prioritization criteria Identify areas of concern
5	November 30, 2010 1:30-4:30 p.m.	Review Meeting #4 outcomes Review the Plan policies (vision and goals) and measurable objectives Prioritize the areas of concern locations, and possible solutions Discuss outline of topics and review sample excerpts of the design guidelines
6	February 24, 2011 1:30-4:30 p.m.	Review areas of concern solutions Discuss performance measures Review the first draft of the design guidelines
7	August 10, 2011 9:00 a.m.- noon	Examine the prioritized project list Discuss implementation strategies for the project list Review performance measures Provide an overview of the draft Plan

Summaries of the TAC meetings are provided below.

TAC Meeting #1

- **Background and Work Plan Review.** The TAC members discussed the work plan and were asked to give feedback particularly on policies, infrastructure, needs, and connectivity.
- **Project Objectives and Issues.** The TAC discussed elements they would like to see in the Design Guidelines: streetscape/landscape standards; pedestrian interaction with other non-motorized modes; trip purpose and users; new facilities and consistency; definitions about area types; crosswalks; pedestrian overpasses; private property; demographics; bus stops; and school zones.
- **Complete Streets Task Force.** The TAC was briefed on this separate, but related effort.
- **Public Involvement Plan.** The TAC was briefed on the PIP and provided suggestions for types of organizations that could be represented on the CAC to obtain a diversity of views.
- **Existing Conditions.** The TAC recommended materials to review to characterize existing conditions.

TAC Meeting #2

- **Plan and Policy Review.** The TAC provided direction on federal, state, and county policies and plans that should be reviewed to ensure consistency with the Plan.
- **Inventory of Safety, Active Walking Programs.** The TAC provided ideas on organizations that provide these services and how they can tie into the Plan.
- **Existing Conditions.** The TAC reviewed draft data on existing conditions and maps. Members provided comments on data provided, data missing, issues with some data sources, and presentation of data. Additional data needs were discussed, such as pedestrian counts.

TAC Meeting #3

- **Factors for Developing Areas of Concern.** Draft factors, and their measures, for developing areas of concern were presented to the TAC for discussion. Draft factors included pedestrian systems gaps, proximity to schools, proximity to pedestrian-intensive land use context, high pedestrian potential areas, and pedestrian hot spots. The TAC recommended clarifications to some factors and consolidation of some factors.
- **Existing Conditions.** Changes to the existing conditions maps since the last meeting were summarized. The TAC was asked to review the maps prior to the upcoming public meetings and posting on the project website.
- **Prioritization Criteria.** A draft memo on Criteria for Prioritization of both projects and programs was presented to the TAC for discussion. Project criteria included connectivity to pedestrian connectors, pedestrian system gaps, environment, property impacts, cost, availability of funding /resources, and high pedestrian potential areas. Program criteria included pedestrian safety, staffing resources, staff training, community capacity, availability of funding /resources, and high pedestrian potential areas. The TAC recommended changes including adding areas of opportunities. Use of the criteria and the assignment of weights based on input from the TAC, CAC, and public were discussed.

TAC Meeting #4

- **CAC and Public Meetings.** The TAC was given an update on comments and discussions at the first CAC meeting and the first series of public meetings on Kauai, Oahu, Maui, and Hawaii.
- **Factors for Developing Areas of Concern.** The revised factors for developing areas of concern were reviewed by the TAC. The key factors were safety, connectivity, accessibility, and environmental justice. Rankings of the factors by the TAC, CAC, and at the public meetings were compared and discussed with the TAC. Safety was the top ranked factor for the TAC, CAC, and all the counties except for Kauai.
- **Areas of Concern.** The draft maps showing areas of concern were reviewed by the TAC and their input was sought to reduce the list to 30 locations statewide. The TAC requested more time to review the information with staff.
- **Prioritization Criteria.** The prioritization criteria were also ranked by the TAC, CAC, and the public. The rankings by each entity were generally similar. The top three criteria by all groups were pedestrian safety, pedestrian connectivity, and high pedestrian potential (environmental justice). The other criteria included pedestrian system gaps, impacts to environmental resources, availability of potential funding, cost, and property impacts.

TAC Meeting #5

- **Draft Policy Framework.** Input from the TAC, CAC, and public helped shape the vision, goals and objectives. Seven goals and their corresponding objectives were reviewed and discussed by the TAC. Suggestions were made to clarify statements on goals and objectives. A general comment was that performance measures should be presented in a manner that is clearly understood.

- **Areas of Concern.** TAC members were asked to review the draft list of 56 areas of concern based on the analysis of the factors reviewed in past meetings as well as input from the public, CAC, and TAC. The goal was to narrow the list to 30 areas of concern. Prioritization criteria was applied after the list was finalized. In general, the TAC felt that all the counties should have some projects representation.
- **Design Guidelines.** The TAC was given an overview of the purpose and contents of the design guidelines. The TAC provided feedback on the design guidelines outline and draft excerpts.

TAC Meeting #6

- **Areas of Concern.** The TAC was given a presentation of the areas of concern and potential solutions for review and comment. The design guidelines helped to guide the proposed solution development.
- **Performance Measures.** Based on comments by the TAC and CAC, some of the goals and objectives in the policy framework were revised. The TAC provided comments on the draft performance measures, which are directly related to the goals and objectives in the policy framework.
- **Design Guidelines.** Highlights of the design guideline toolbox were shown on slides. The TAC reviewed and provided comments on the toolbox sections.

TAC Meeting #7

- **Prioritized Project List.** As a result of input from the TAC and CAC, the final list of prioritization criteria includes connectivity, pedestrian safety, environment, property impacts, cost, funding availability, and pedestrian-oriented populations. Worksheets on the evaluation of the areas of concern were reviewed and discussed by the TAC.
- **Implementation Strategies.** Three components of the implementation strategy were discussed: best practices in pedestrian-oriented design (Toolbox), funding strategies, and monitoring performance of the Plan. The TAC provided feedback to clarify points in the strategies, sources of funds, and opportunities for public-private partnerships.
- **Performance Measures.** The updated list of performance measures was given to the TAC for review. A possible monitoring cycle for the Plan was presented. The TAC suggested revisions to the performance measures.
- **Draft Plan.** The TAC was given an overview of the draft Plan by chapter and was asked to provide comments before the Plan goes out for public review.

Citizen Advisory Committee (CAC)

A CAC was formed to provide input on how to improve the walking experience and pedestrian safety, to help link the project and the community and interest groups, and provide information about community ideas and issues related to pedestrians in Hawaii. To populate the CAC, interested stakeholders and community members were invited to apply as volunteers in March of 2010. CAC members were selected by the HDOT to ensure comprehensive community representation, including transportation mode representation, geographic representation, and age representation. The CAC included representatives from minority and disadvantaged (low income) groups consistent with the HDOT's commitment to environmental justice, as well as people with disabilities. Members were asked to be open to different perspectives on walking issues, represent their neighborhood, community, interest group, or advocacy group, and review maps and documents created by the project team to provide feedback on the Plan. Responsibilities of CAC members included:

- Representing their constituents' perspectives during group deliberations.
- Communicating project progress with their constituents.

- Providing feedback at key milestones throughout the project (i.e. verification of existing conditions, identification of areas of concern, and prioritization of solutions).
- Providing input prior to distribution of key materials at public workshops.
- Providing recommendations to the HDOT.
- Acting as ambassadors for the project.

CAC members and the organizations/interest groups they represented are shown in Table 3. During the course of developing the Plan, there were five meetings with the CAC. Table 4 shows the meeting dates and purposes.

TABLE 3
Citizen Advisory Committee Members

Stakeholder Category	Organization
Pedestrian	Get Fit Kauai
Bicyclist	Peoples Advocacy for Trails Hawaii
Senior	AARP
ADA	Eye of the Pacific Guide Dogs/Hawaii Center for Independent Living
Vehicle	DTRIC Insurance
Transit	Transit Rider
Education	Department of Education
Student	UH Department of Urban and Regional Planning Student
Developer	Land Use Research Foundation of Hawaii
Resident/Neighborhood Board	Maui Resident
Business Owner	Hawaii Chamber of Commerce
Health	Kaiser Hospital
Tourism	Outrigger Hotels
Enforcement	Honolulu Police Department
Cultural Resource	Oahu Aha Moku
General "Public at Large"	American Planning Association
General "Public at Large"	General Public

TABLE 4
Citizen Advisory Committee Meetings and Purpose

No.	Date	Purpose
1	June 10, 2010 8:30-11:30 a.m.	Build common understanding of project purpose and process Develop and agree on communication and decision-making protocols Review existing conditions for the State Highway pedestrian system Discuss and provide recommendations on project criteria
2	August 19, 2010 1:30-4:30 p.m.	Review Meeting #1 outcomes Review TAC and public comments on existing conditions, factors for developing areas of concern, and project/program prioritization criteria Identify areas of concern
3	December 3, 2010 1:30-4:30 p.m.	Review Meeting #2 outcomes Review the Plan policies (vision and goals) and measurable objectives Prioritize the area of concern locations and possible solutions Review the design guidelines outline
4	February 25, 2011 1:30-4:30 p.m.	Review area of concern solutions Discuss performance measures Review the first draft of the design guidelines
5	August 17, 2011 1:30-4:30 p.m.	Examine the prioritized project list Discuss implementation strategies for the project list Review performance measures Provide an overview of the draft Plan

When CAC meetings were held, additional stakeholders ("Friends" of the Plan), who were interested in being updated at milestones in the process, were notified. Contacts were continuously added to the 'Friend' list from public meetings and the project website. Approximately 330 people were included as "Friends" at the end of the process.

Summaries of the CAC meetings are provided below. The project website provided meeting materials and a meeting summary for each of the CAC meetings.

CAC Meeting #1

- **Project Overview.** The CAC reviewed the overall purpose and work plan for the Plan and discussed the Plan is relation to the Strategic Highway Safety Plan and Complete Streets Task Force effort.
- **Project Goals.** The CAC discussed the draft goals of the Plan and recommended revisions. Points raised included the need to address the fundamental issues of safety and reducing the number of pedestrian accidents; whether funding was available and whether it would be fairly allocated; incorporating native Hawaiian culture into the Plan; and integrating healthy living concepts.
- **Roles and Responsibilities.** The CAC had an advisory role to the TAC. The project team kept the CAC informed on results of the TAC meetings. The CAC meetings were open to the public.
- **Factors for Developing Areas of Concern.** Draft factors were discussed for pedestrian system gaps, proximity to schools and pedestrian-intensive land uses, pedestrian hotspots, and Environmental Justice considerations. The CAC recommended changes to the draft factors.
- **Existing Conditions.** The CAC was shown draft maps of existing conditions to review and asked to provide questions or comments. The CAC noted that other existing pedestrian programs should be considered. The connection between state, county roads, and trailheads should be included.

- **Project Criteria.** The CAC recommended changes to the draft criteria, including consideration of positive impacts, quality of life benefits, and cultural effects.

CAC Meeting #2

- **TAC and Public Meetings.** The project team summarized comments from the TAC and public meetings and the CAC discussed their comments.
- **Factors for Developing Areas of Concern.** The CAC was given the results of how the TAC, CAC, and public ranked the key factors of safety, connectivity, accessibility, and environmental justice. The CAC noted that there was a general consistency in the rankings.
- **Areas of Concern.** Draft maps showing areas of concern were presented to the CAC, who provided input on methods to narrow the list to about 30 areas.
- **Prioritization Criteria.** The CAC was given the results of how the TAC, CAC, and public ranked the eight prioritization criteria that would be used to rank projects using transparent methodology.

CAC Meeting #3

- **Draft Policy Framework.** The policy framework was developed from the TAC, CAC, and public's input and is aligned with other statewide transportation plans. The CAC recommended that the vision statement should include safety and that future planning should be comprehensive in considering all modes. The goals and objectives were presented and each was discussed by the CAC who suggested revisions or clarifications.
- **Areas of Concern.** The methodology for identifying areas of concern was discussed with the CAC. Fifty-six areas of concern were initially identified and the CAC was asked to review and validate the list, which needed to be reduced to thirty areas. The CAC agreed that safety was the primary concern and that geographic representation should be considered.
- **Design Guidelines.** The CAC was briefed on the "Toolbox" approach to the design guidelines and asked to provide comments by the next meeting.

CAC Meeting #4

- **Areas of Concern.** The CAC was briefed on the list of the areas of concern and the methodology to determine the list. The areas and proposed solutions were described to the CAC. A summary of the TAC and CAC prior comments on the areas was provided. The CAC was asked to provide additional comments.
- **Performance Measures.** The CAC reviewed draft performance measures that would be used to measure achievement of an objective. The CAC noted that land use was not effectively addressed.
- **Design Guidelines.** The CAC was provided a draft of the Pedestrian Facility Toolbox (toolboxes 1 through 5, with 6 through 10 to follow) and asked to review and provide comments by the next meeting.

CAC Meeting #5

- **Prioritized Project List.** The list and methodology to develop the list was discussed with the CAC. The prioritization criteria were first introduced at CAC Meeting #1 in June 2010. These criteria were developed to be used as a decision-making tool to rank projects and programs. They were established early to avoid any bias toward specific projects or programs. The Criteria for Prioritization Memorandum had been revised and updated based on comments received from both the TAC and the CAC.
- **Implementation Strategies.** Three components of the implementation strategy were discussed: best practices in pedestrian-oriented design (Toolbox), funding strategies, and monitoring performance of the Plan. The CAC urged that the Toolbox be made easily available to everyone. The CAC suggested ways to increase funding and asked if they could help by speaking to decision-makers or providing information.

- **Performance Measures.** The CAC provided suggestions to the process of measuring performance of the Plan.
- **Draft Statewide Pedestrian Master Plan.** The CAC was given an overview of the draft Plan chapter by chapter. CAC members provided revisions and comments. Additional comments were requested before the draft was sent out for public review. The Plan was posted on the project website and presentations were made to the Oahu Metropolitan Planning Organization CAC and the Hawaii Congress of Planning Officials in September. The CAC was asked to email suggestions on other outreach ideas.

Public Workshops

There were two series of public workshops associated with the Plan; the first series was held in July-August of 2010 and the second in March-April of 2011. These workshops were designed to be interactive---participants had the opportunity to learn about the project and to provide input on the task at hand. The two series focused on the following topics:

TABLE 5

Public Workshops and Purpose

Date	Location	Purpose
First Series		
July 19, 2010	Hilo, Hawaii	Inform the community on the Statewide Pedestrian Master Plan and how they can be involved
July 20, 2010	Kona, Hawaii	
July 26, 2010	Wailuku, Maui	Review and validate existing conditions for the State Department of Transportation pedestrian network
July 27, 2010	Lihue, Kauai	
August 9, 2010	Kapolei, Oahu	Learn about the community's values on walking opportunities and issues
August 10, 2010	Kaneohe, Oahu	
August 11, 2010	Honolulu, Oahu	
Second Series		
March 30, 2011	Waianae, Oahu	Inform the community on the Statewide Pedestrian Master Plan's vision and goals
March 31, 2011	Lihue, Kauai	
April 6, 2011	Honolulu, Oahu	Educate the community on Pedestrian Facility Toolbox
April 7, 2011	Wailuku, Maui	
April 13, 2011	Hilo, Hawaii	Provide an update on the identification of the areas of concern and potential solutions
April 14, 2011	Kona, Hawaii	

The two workshop series were advertized in a number of ways, including:

- Public Meeting Ads in local newspapers: Hawaii Tribune-Herald (Hilo, Hawaii), Star Advertiser (Oahu, Kauai, Maui, and Hawaii), The Maui News, The Garden Island (Kauai), and West Hawaii Today (Kailua-Kona, Hawaii)
- Flyers posted on public notice boards and announcements at meetings for neighborhood and community organizations
- Targeted mailers to populations including Environmental Justice populations and Title VI considerations

- Outreach by advocate groups, such as AARP, Hawaii Bicycling League, Peoples Advocacy for Trails Hawaii, Hawaii Nutrition and Physical Activity Coalition, etc.
- Media press release
- Announcement on the project website
- Email to the "Friends" of the project

Public Workshop Series #1 Summary

The first series of seven public workshops gathered public input on the existing conditions, collected additional information that was not captured in the initial data gathering phase, and identified the community's values on walking opportunities and issues. The meeting was also an introduction to the Plan and informed the community of how they could be involved throughout the process. After the initial presentations by the project team, the attendees broke into smaller groups to review the existing conditions maps and then presented their information to all the groups. Attendees talked with project staff and provided written and verbal feedback for the project team to incorporate into the existing conditions analysis. The agenda and presentation materials were posted on the project website. The specific topics covered during the meetings are described below.

- **Project background, goals, scope and schedule.** Attendees were given information on the project's need, work plan, and schedule. The project goals were presented: improve pedestrian safety and mobility; involve the public and stakeholders; develop projects and programs; provide policy and design guidance; and integrate the Plan with other planning efforts.
- **Role of the public and opportunities.** The decision makers and decision-making process were described. Avenues for public involvement were identified: provide input at public meetings; contact CAC members or attend the CAC meetings; visit the project website; and contact the project management team.
- **Definition of pedestrian facilities and overview of existing conditions.** Pedestrian facilities for this Plan were defined and maps specific to each island were presented to illustrate these facilities. Separate maps were shown for pedestrian attractors (land uses that draw pedestrians), bus routes, pedestrian crash locations, land use, and a series of census maps showing areas of environmental justice concerns, such as populations with no access to vehicles, that are under seventeen, elderly, and below the nationally established poverty threshold.
- **Overview of factors for areas of concern and prioritization criteria.** Factors for the areas of concern for the Plan were defined as connectivity, accessibility, safety, and pedestrian-oriented populations. Draft criteria to set priorities among the projects were described as connectivity to pedestrian attractors, pedestrian safety, pedestrian system

  gaps, environment, property impacts, cost, availability of funding/resources, and pedestrian-oriented populations. The public was asked to comment on and rank the areas of concern factors as well as the prioritization criteria in order of importance.
- **Review existing condition maps and report back discussion on small-group findings.** Attendees broke up into groups and were given copies of the maps to examine and correct or add information. Information provided by the public that pertained to county pedestrian facilities was given to the respective counties. Information provided by the public that pertained to state pedestrian facilities were included in the area of concern analysis. Each group presented results to all the groups so everyone was aware of the information shared. Rankings and concerns were tallied and shared with and compared to the rankings by the TAC and CAC.

Subsequent to the public meetings, the project team verified the data received and updated the information on pedestrian facilities. Based on the input received at the public meetings, the methodology for identifying areas of concern was revised to include areas that had comments from three or more members of the public. And the results from the public meetings, such as areas of concern and prioritization criteria, were presented to the TAC and CAC to incorporate into their discussions and recommendations.

Public Workshop Series #2 Summary

The second series of six public workshops discussed the toolbox of pedestrian facilities, the Plan goals and objectives, and validation of the potential solutions for the areas of concern. The meetings began with presentations by the project team followed by an open house format so the public could view poster diagrams of their community's areas of concern and potential solutions as well as discuss their ideas and concerns with the project team. As with series #1, the agenda and presentation materials for series #2 were posted on the project website. The specific topics covered during the meetings are described below.

- **Plan's Vision and Goals.** The Plan's vision and goals were presented to the attendees and provided in a handout. The goals were developed based on input received from all the stakeholders: the TAC, CAC, and the public.
- **Pedestrian Facility Toolbox.** Attendees were introduced to the Plan's design guidelines which will help to (1) promote best practices throughout the state and achieve a broader-scale positive change in pedestrian environment; (2) provide consistency in pedestrian design guidance; and (3) provide comprehensive guidance in a number of pedestrian-related topics, including design for "complete streets." Elements of the design guidelines were used to address areas of concerns and potential solutions for each island.
- **Update on the Area of Concern locations.** Attendees were updated on the existing conditions and areas of concern based on public input during the first series of meetings. The methodology and selection criteria for identifying the areas of concern were shared. The selection criteria included the inclusion of the area of concern factors, TAC input, CAC input, public input, type of projects, and population and geographical representation.
- **Exploration of solutions from the Pedestrian Facility Toolbox.** The draft areas of concern and potential solutions using the Pedestrian Facility Toolbox were presented for the island where the public meeting occurred. The presentation included an analysis of the problem at each area of concern and various strategies, or tools, to address the problem.
- **Areas of Concern "Open House".** Attendees were asked to view the area of concern exhibits around the room and to comment on the locations and potential solutions.

The public's feedback on the potential areas of concern and possible solutions were evaluated by the project team and revisions were made to the Plan. One of the solutions added to the Plan was education because the public felt it was an important solution.

Small Group Meetings

In addition to the TAC and CAC, smaller stakeholder meetings were held to help coordinate the Plan with other ongoing efforts, and to ensure consistency with other agencies and pedestrian efforts. A list and general summary of the meetings is included below.

Between April and June 2011 a series of meetings were held:

- Oahu Metropolitan Planning Organization CAC Presentation (April 20, 2011)
- Department of Education, Safety and Security Branch (May 24, 2011)

- Honolulu Police Department, Traffic Division (June 1, 2011)
- Department of Health – Healthy Hawaii Initiative (June 3, 2011)
- Department of Transportation – Safe Routes to School (June 6, 2011)
- Walk Wise Hawaii (June 6, 2011)

Oahu Metropolitan Planning Organization (OahuMPO) CAC Presentation

The project team shared an overview of the project, along with the areas of concern, Plan's vision and goals, highlights of the Pedestrian Facility toolbox, and ways to get involved. During the meeting issues important to the OahuMPO, such as consideration of those with disabilities, were discussed. Members of the OahuMPO CAC also mentioned issues important to their neighborhoods and how the Plan would address those concerns. Project staff discussed how the prioritization of the areas of concern was conducted, and how it could be integrated with other planning and design efforts.

Department of Education, Safety and Security Branch Meeting

The project team and Department of Education representatives discussed crossing guards, the City and County of Honolulu, School Traffic Safety Committee, Safe Routes to School (SRTS), and other miscellaneous topics at this meeting. In general, on Oahu, there is a shortage of crossing guards, who are employees of the Honolulu Police Department and need to pass background checks. The participation of SRTS varies per school. Principals have autonomy (and their own budget) and will prioritize based on their school's needs. Effective ways to educate school children was discussed. It was also noted that parents will often reinforce bad behavior by having their kids run across the street (outside of the crosswalk) when picking them up after school.

Honolulu Police Department (HPD), Traffic Division Meeting

This meeting focused on enforcement, the community affairs division, and the traffic division within HPD. Enforcement in specific locations by the HPD is based on feedback, complaints, and hot spot analyses. The community affairs division coordinates the outreach and requested speakers for the HPD. Many of the safety goals and programs run by the HPD are consistent with the Plan goal of increasing safety for pedestrians and drivers on Oahu and throughout Hawaii. HPD shared their thoughts on effective programs and the new accident report form, which may lead to better tracking of accidents.

Department of Health – Healthy Hawaii Initiative (HHI) Meeting

HHI helps implement policies and programs to encourage healthy lifestyles, including encouraging active transportation modes. The five components of the HHI were discussed: schools, community programs, public and professional education, research and evaluation, and a nutritional education network. HHI is currently focusing on the islands of Kauai and Maui instead of statewide programs due to funding constraints. Most of the HHI coordination with the state and county occurs at the policy level to help implement organizational changes, with a focus on strategies or recommendations that overlap with other partner agencies. HHI and the Plan have similar goals, and coordination with the initiative could help further recommendations in the Plan.

Department of Transportation – Safe Routes to School Meeting

Safe Routes to School (SRTS) is a federally funded program to encourage students to walk or bike to schools through creating inviting bicycle and pedestrian environments and implementing programs in schools to support behavioral changes in transportation modes.

Many of the recommendations and areas of concern in the Plan are located near schools. SRTS addresses both infrastructure projects and programs to encourage walking and bicycling, and is included as a potential funding source for the Plan. One of the current challenges of the program is the education of the applicants. There are federal regulations and restrictions on how the funds are utilized and any errors would jeopardize the reimbursement.

Walk Wise Hawaii (WWH) Meeting

WWH is a public education program run by the HDOT creating community partnerships, delivering presentations, and coordinating with the media to educate pedestrians and drivers about safe walking practices and increasing driver awareness. This program operates with grants from the National Highway Traffic Safety Administration and currently has partnerships with key businesses and organizations in Hawai'i which include AAA-Hawai'i, AARP, DTRIC Insurance, Kama'āina Kids, Longs Drugs, Tesoro Hawai'i, and Farmers Insurance and public partnerships with the City and County of Honolulu's Department of Transportation Services, the City and County of Honolulu's Elderly Affairs Division, the State Department of Health, and the Honolulu Police Department. The Plan would be supported by WWH, as the goals of the program are consistent with the Plan. The Plan is recommending the use of the WWH program as a potential solution to some of the area of concern locations. WWH is hoping to expand its program to the neighbor islands in the next year.

Environmental Justice/Title VI/Traditionally Underserved Communities Outreach and Compliance

As part of the data gathering effort, the consultant team conducted a review of 2000 Census demographics to understand the general concentrations of low-income, disabled, elderly, and limited-English proficient residents statewide.

The analysis of demographics informed the refinement of the public involvement plan, but, regardless of concentration, members of all of these groups were invited to participate in the planning process. To engage these communities, the project team employed the following strategies:

- Placed Public Meeting Ads in local newspapers: Hawaii Tribune-Herald (Hilo, Hawaii), Star Advertiser (Oahu, Kauai, and Maui), The Maui News, The Garden Island (Kauai), and West Hawaii Today (Kailua-Kona, Hawaii)
- Provided posters to be displayed on public notice boards and made announcements at meetings of neighborhood and community organizations
- Mailed over 400 flyers to organizations with Environmental Justice populations and Title VI considerations
- Used outreach by advocate groups, such as AARP, Hawaii Bicycling League, Peoples Advocacy for Trails Hawaii, Hawaii Nutrition and Physical Activity Coalition, etc.
- Media press release

Project Website

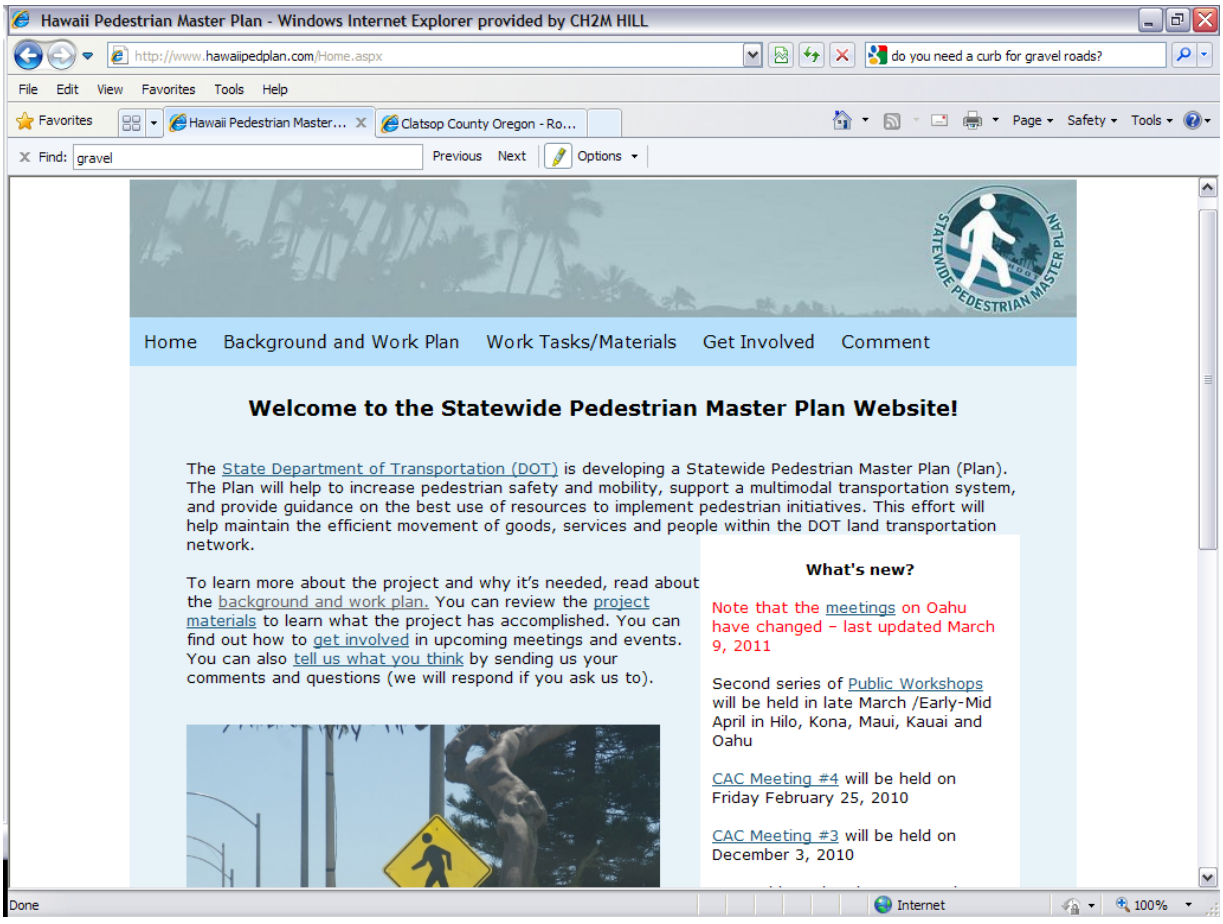
A project website (www.hawaiipedplan.com) was developed to give the public a convenient way to stay informed about the project's progress and meeting schedule. The website included the following information:

- Project overview
- Project schedule
- CAC meeting schedule, agendas, summaries, and materials

- Materials from public workshops open houses including displays and summaries
- Announcements of public meetings
- A form to submit comments and questions
- Responses to Frequently Asked Questions

Comments and questions from the public were taken on the project website. Summaries of the comments were organized by county and statewide perspectives. Each comment was entered into a central comment spreadsheet and reviewed by the team as they developed the Plan. The comments were generally reflective of the comments received at the public meeting, covering such topics as pedestrian safety; interconnections between state and county systems; bicycle use; design issues; desire to maintain a rural feel in rural areas; safe routes to schools, enforcement of laws; and education.

Email updates were used to reach interested parties on the mailing list to direct them to the project website, announce upcoming events, or share important project milestones.



Comment Summary from emails, phone calls, and letters

Over the course of the Plan's development, comments and questions from the public were received through emails, phone calls, and letters. Summaries of the comments were organized by county and statewide perspectives. Each comment was entered into a central comment spreadsheet and reviewed by the team as they developed the Plan. The comments received were similar to the comments received at the public meetings and on the project website.

Comment Tracking

Tracking and responding to comments was important to ensuring that stakeholders felt heard during the process. The project team maintained a spreadsheet of stakeholder comments received outside of a TAC or CAC formal meeting. The comment spreadsheet contains over 550 entries received through the project's public meetings, small-group meetings, website, email, phone calls, and media commentary. For those who requested a response, the spreadsheet made note of the project team's response.

Stakeholder Contact List

The project team developed and maintained a stakeholder contact list which included:

- Private entities and individuals (interest groups, neighborhood groups, businesses, property owners, residents, other citizens)
- Environmental justice mailing lists (including contacts listed in Appendix C – Mailing List for Environmental Justice/Title VI Issues found in HDOT's *Guide for Public Involvement Planning in the Transportation Planning and Programming Process*)
- County Title VI coordinators (e.g. Theresa Spinola-Campbell – Hawaii County)
- Community and private organizations
- Quasi-government organizations
- Public agencies
- Non-profit agencies
- Elected officials

Attendees at public meetings were added to the list. Members of this list received notices of public workshops, CAC meetings, and updates to the project website. The team also developed an email list for distribution of TAC and CAC materials and notices.

News Media Outreach and Coordination

The project team prepared press releases and reached out to members of the media to encourage media coverage at key decision points. The HDOT served as the media contact for the project and all media requests were sent to the HDOT. The Plan was featured on morning and prime time news coverage, as well as the front page of the Star Advertiser.

Appendix C

Existing Conditions Report

Appendix C: Existing Conditions Report

An existing conditions report is critical for the Plan because it creates a baseline and lays the foundation for next steps, which include establishing factors for areas of concern, identifying the areas of concern, and developing and prioritizing projects that address the areas of concern.This existing conditions report summarizes the inventory that was conducted for state land transportation facilities. It includes four parts: physical inventory, Census review, pedestrian safety, and safety and educational programs.

Executive Summary

This memorandum describes the existing conditions for pedestrians along state highways throughout the state of Hawaii. The conditions include:

- physical roadway facilities,
- adjacent land use,
- availability of transit,
- pedestrian attractors,
- roadway functional classifications,
- roadway speeds,
- average annual daily traffic,
- population characteristics,
- pedestrian crashes

All of these conditions affect pedestrians on statewide routes, either by influencing where pedestrians are likely to be found, the physical context of the route, or the types of pedestrians who live nearby. The findings give a general idea of the existing conditions in the entire state of Hawaii, at a high level using available data. Each island is analyzed separately where data allows.

Pedestrian Facilities

The project team reviewed the pedestrian facilities adjacent to the State Highway System. Most of the urban areas statewide have sidewalks on at least one side of the roadway. In rural areas where there are no pedestrian facilities, a paved shoulder is often used as a pedestrian walkway. With a few exceptions, most of the state highways have sidewalks or shoulders, or both. In areas where the roadway is constrained by topography or available right of way, there are narrower shoulders, or an absence of shoulders.

Land Use

Another important piece of the physical context of the State Highway System is the adjacent land use. Land uses affect the roadway design and type of pedestrian usage in a location. Most of the land uses in urban areas are

consistent with city and town centers: commercial, higher density residential, resort, and industrial uses. Dense areas are more likely to attract pedestrians as destinations are closer together, and parking and available streets become more congested. In more rural areas, there are conservation, agriculture, open space, and parkland designations. These do not attract the high numbers of pedestrians, but there are some destinations such as parks and beaches that attract pedestrians, or require a pedestrian trip to access.

Transit

Transit routes are important for understanding the pedestrian system on state highways because transit riders walk to transit stops. Maui, Kauai, Oahu, and Hawaii all have transit service in the form of bus routes, which mainly follow the state highways, connecting cities and towns. Transit on Oahu, Maui, and Kauai has fixed stops. There are no fixed stops on the Big Island, but transit riders are encouraged to utilize designated bus stop zones whenever possible.

Pedestrian Attractors

The project team considered pedestrian attractors for the existing conditions analysis, including a variety of public and commercial facilities that are likely to attract pedestrians. Maps of various public facilities such as parks, schools, libraries, transit centers, and community and neighborhood centers help inform the existing conditions analysis. The analysis also included private attractors, namely shopping centers, and tourist attractors like museums, hotel areas, and ship terminals. These facilities are scattered throughout the state in both urban and rural settings, though there are more attractors within urbanized cities and towns.

Functional Classification

The roadway functional classification, along with the posted speeds and average annual daily traffic (AADT) were an important component of the existing conditions review. Functional classifications guide the design and expected traffic on the highways, while posted speeds and AADT allow for analysis of the roadway usage and the quality of the pedestrian environment. Because state highways are the focus of this Plan, most of the functional classifications are higher order, with higher speeds in the rural areas, slower speeds in the urban areas, and high traffic levels.

Census Characteristics

Census data help determine general demographic and population characteristics. This helps provide an understanding of locations of transit-dependent populations. Detailed data are available at the block group level and are over 10 years old[1], but still provide a general picture of age, poverty level, and residents with no access to vehicles. Generally, the more urban areas have higher percentages of children under age 17, except the City and County of Honolulu. The County of Hawaii has a higher percentage of the population under 17, as do Lanai and the west coast of Molokai than the other counties. The City and County of Honolulu, the east side of Honolulu, and the south central part of Kauai near Waimea have relatively high percentages of the population over 65 years old.

Safety

The project team analyzed the most recent available pedestrian crash data (between 2004 and 2008). Most of the pedestrian crashes occur in the more urbanized areas; however, the island of Oahu and County of Kauai have rural areas along the coast with a number of pedestrian crashes near parks and beaches. Pedestrian fatalities also follow this trend.

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[1] Census 2010 decennial data are not yet available for the State of Hawaii.

Introduction

Background

The Statewide Pedestrian Master Plan (Plan) will help increase pedestrian safety, reduce pedestrian traffic fatalities, and promote and support a connected and accessible multimodal transportation system. This multimodal transportation system will maintain the efficient movement of goods, services and people within the State land transportation network. The Plan will provide guidance on efficient and effective use of federal, state, and local resources to implement pedestrian initiatives.

According to the 2000 Census, only about 6 percent in the State of Hawaii either walked or biked to work while the majority (82 percent) drove to work alone or carpooled. The number of residents who took public transportation to work was 6 percent statewide (Figure 2-1). The Plan, by increasing pedestrian safety and improving and implementing pedestrian facilities, is expected to encourage more people to switch their means of transportation to work to walking, consistent with the vision of the Hawaii Statewide Transportation Plan. According to the 2010 Benchmarking Report written by the Alliance for Biking and Walking, the state of Hawaii ranks 6th in the nation for the number of people who walk to work.

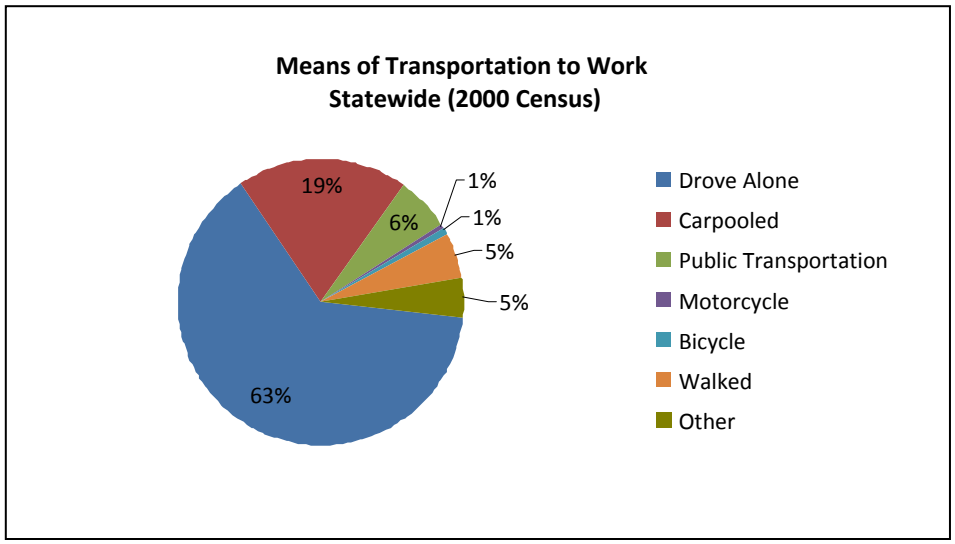


Figure 2-1. Means of Transportation to Work, Statewide, 2000 Census

An existing conditions report is critical for the Plan because it creates a baseline and lays the foundation for next steps, which include establishing criteria for areas of concern, identifying the areas of concern, and developing and prioritizing projects that address the areas of concern.

This existing conditions report summarizes the inventory that was conducted for state land transportation facilities. It includes four parts: physical inventory, Census review, pedestrian safety, and safety and education pedestrian programs. The safety and educational pedestrian programs are discussed in Appendix A, *Plan and Policy Review*.

Existing Conditions Report Methods

The existing condition information was gathered via the following sources:

- GIS Data – The project team obtained information on existing facilities, features, and land use data from the State GIS website and the State Data Clearinghouse. The counties provided GIS data to the project team.
- Census Data – The project team used 2000 Census data to identify areas of potential high pedestrian demand.
- Pedestrian Crash Data – HDOT Highways Division, Traffic Branch provided pedestrian crash data for the years of 2004 to 2007 and part of 2008 (the most recent data available). This was used to evaluate pedestrian safety on state facilities for this report.
- Google and Bing maps – the project team surveyed aerial photographs to correlate and confirm data from GIS.
- HDOT Line Diagrams, 2009
- Validation by TAC, CAC, the public, and site visits

Physical Inventory

The following section focuses on the existing physical facilities and adjacent land use, transit routes, speed limits, and traffic levels along state highways in Hawaii. Pedestrian facilities include sidewalks, crosswalks, and off-street walkways and paths. Land use is important to consider as it shapes the types of activities and potential attractiveness of a given location for pedestrians. Transit routes and other pedestrian attractors also provide information about the likelihood of pedestrians in a given area. Other physical aspects discussed below include the functional classification, speed limit, and average daily traffic. These affect the design of the roadway and will help guide potential improvements at areas of concern.

Rural areas throughout the state tend to have fewer pedestrian facilities such as sidewalks and crosswalks; while the City and County of Honolulu has the most developed sidewalk system in the state. Many state highways have paved shoulders on one or both sides of the highway, providing space for pedestrians to travel along roadways without walking in the travel lanes.

Land use provides additional information on the types of pedestrians and expectations for pedestrians alongside state highways: the more urban commercial areas are likely to have more people crossing and walking alongside the highway, while there are fewer people in the more rural, primarily open space and agricultural lands between the towns and urban centers.

Pedestrian attractors are also clustered in urban areas, with parks and beaches acting as pedestrian attractors in the more rural areas. The highways are generally classified as arterials in the urban areas and collectors and arterials in the more rural areas. Speeds are generally lower in the cities and higher in the rural stretches where the road geometry allows.

Existing Pedestrian System - Sidewalks

Sidewalks are an important part of the state pedestrian system. Sidewalk guidelines from the American Association of State Highway Transportation Officials (AASHTO) suggest sidewalks should be at least 6 feet wide to safely accommodate two-way pedestrian traffic. HDOT standards defer to the AASHTO standards. Other critical pieces of the pedestrian system include other walkways, crosswalks, and shared use paths. Pedestrians tend to use a variety of different facilities to travel including paved and gravel shoulders (although they are not recognized as pedestrian facilities). This existing conditions report will discuss existing sidewalks and shoulders. Examples of sidewalks can be seen in Figure 3-1. Shoulder widths on state highways are described in Section 3.2.

Figure 3-1 Examples of Sidewalks in Hawaii

State highways throughout Hawaii connect towns and cities and move goods and people. In the sparsely populated rural areas, there are few sidewalks or pedestrian facilities as few pedestrians are likely to be traveling. Within the more densely populated urban areas, there are generally at least sidewalks on one side of the highway, if not both. Figures 3-2 through 3-5 show U.S. 2000 Census-designated urban areas on the islands. Areas not highlighted as urban are classified rural according to the Census. In addition to the highway sidewalk system, the Na Ala Hele Trail System provides recreational and educational access to recreational areas statewide. Kauai, Oahu, Molokai, Lanai, Maui and Hawaii islands all have Na Ala Hele trails. The Department of Land and Natural Resources (DLNR) is responsible for the management of the 275 miles of hiking trails and access to state parks and state beaches.

County of Hawaii

There are very few sidewalks on state highways in the County of Hawaii, mostly because they pass through predominantly rural areas. Within Hilo and Kailua-Kona, there are sidewalks along sections of one side of the state highway. The County of Hawaii also has an extensive Na Ala Hele Trail system. Figure 3-6 shows the sidewalk system in the County of Hawaii.

City and County of Honolulu

The City and County of Honolulu has the most extensive sidewalk system of the islands; many highways have sections with sidewalks at least on one side of the road, and many have sidewalks on both sides in the more populated areas in Honolulu on the southern side of the island. Figure 3-7 shows sidewalks on Oahu.

County of Kauai

The County of Kauai is more rural than Oahu, and therefore has few sidewalks. Most of the sidewalks are concentrated on the eastern side of the island, near Kapaa and Lihue, with a few sidewalks on the southwestern side in Waimea and near Hanapepe. Figure 3-8 shows sidewalks in the County of Kauai.

County of Maui

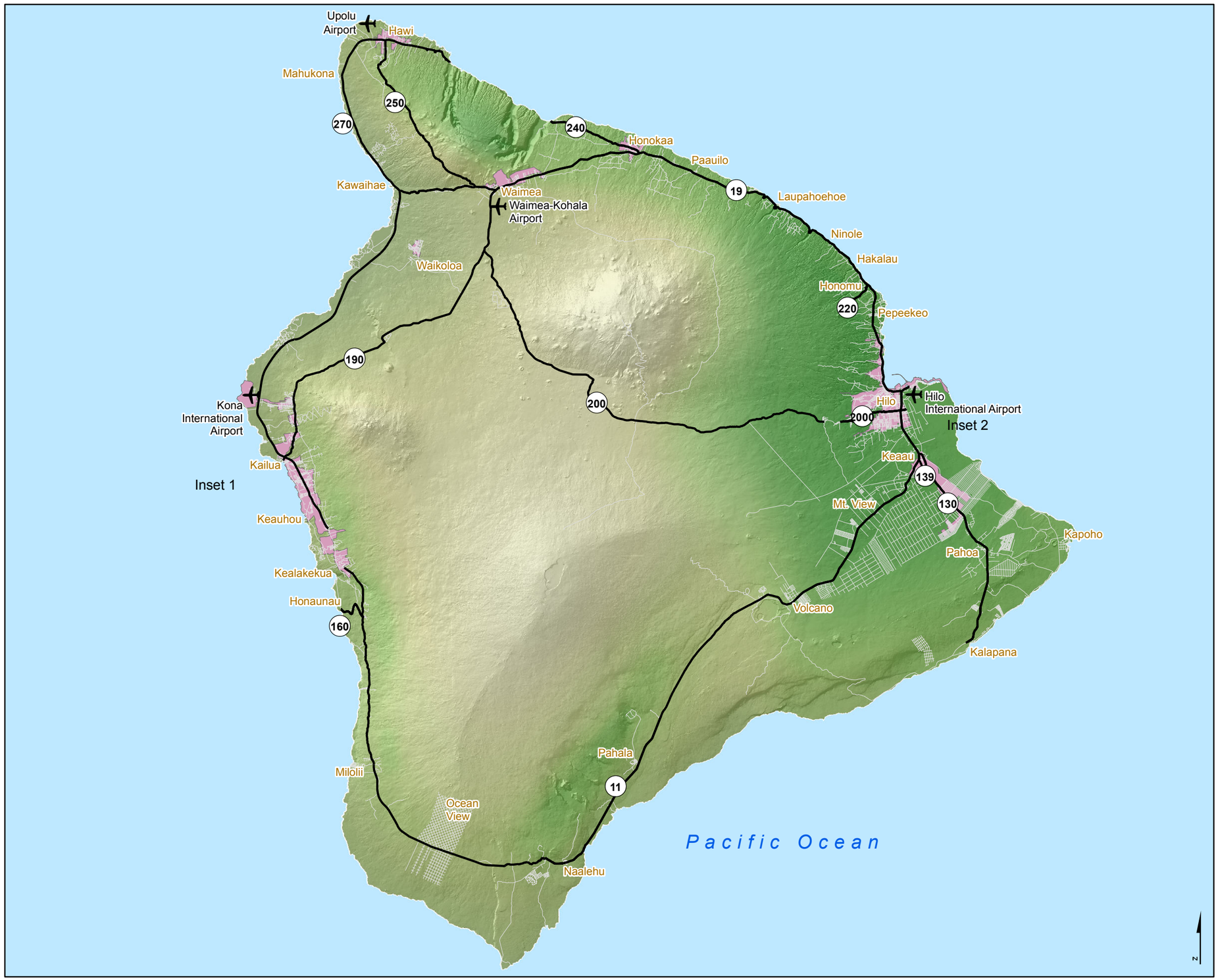
The sidewalks along the state highway in Maui are concentrated near Kahului. There are two other locations where there is a sidewalk on one side of the highway: near Hana on the east side and near Keawakapu north of Makena on the southwest coast. Figure 3-9 shows sidewalks in the County of Maui.

Lanai and Molokai

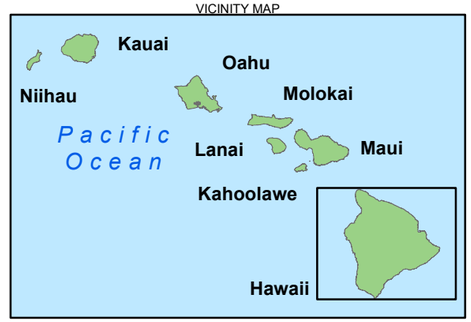
Molokai has a few sections of highway that have sidewalks on one side, and Lanai has no highways with sidewalks. These two islands are the most rural compared to the rest of the state. The insets in Figure 3-9 show sidewalks on Lanai and Molokai.

Existing Pedestrian System - Shoulders

Shoulder width is important to consider because shoulders are used by pedestrians along state highways in Hawaii. However, shoulders are not considered pedestrian facilities. They can serve many functions including providing an area for both pedestrians and bicyclists to travel alongside the highway outside of the travel lanes on a paved surface. Depending on roadway conditions, shoulders can be designed to better accommodate bicyclists and pedestrians. In rural areas, shoulders provide adequate space for pedestrians to travel alongside a roadway. However, in some areas, there is limited room for shoulders. Gravel shoulders may exist along some state highways; however, gravel poses problems for mobility-impaired pedestrians who may have trouble navigating a rougher surface. HDOT design standards defer to the AASHTO guidebook for standards, where standards for roadway shoulders are 6 feet (but can vary depending on the functional classification of the roadway and design speed).



VICINITY MAP



LEGEND

- Airports
- State Highways
- Local Roads
- Census 2000 Urban Areas

Notes:
1. Urban Areas - U.S. Census 2000
2. Roads - Hawaii Department of Transportation
3. City Name - Statewide GIS Program, Hawaii Office of Planning. http://hawaii.gov/dbedt/gis/download.htm

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Miles

FIGURE 3-2
Urban and Rural Areas - Hawaii County
Hawaii Statewide Pedestrian Master Plan

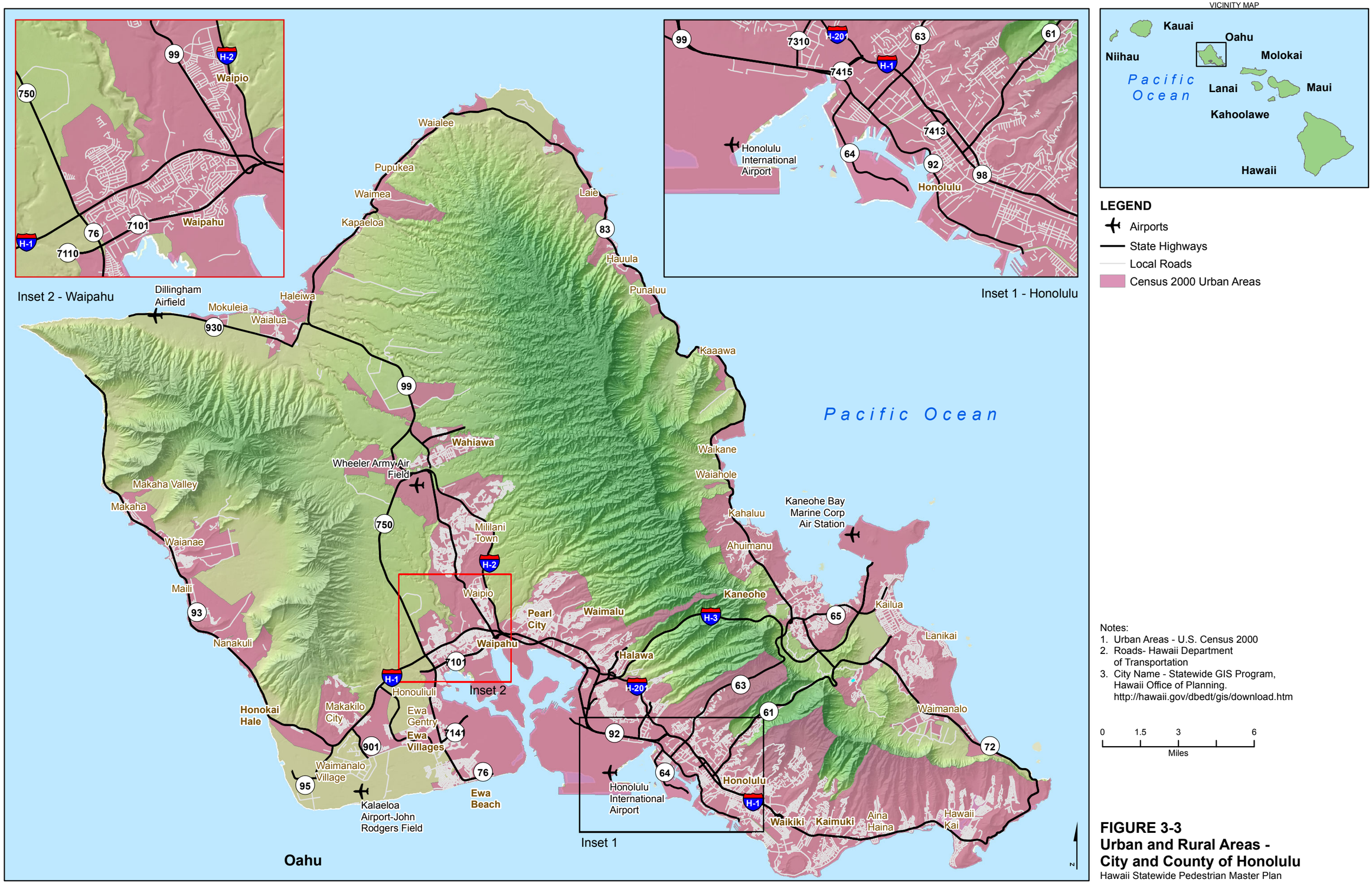
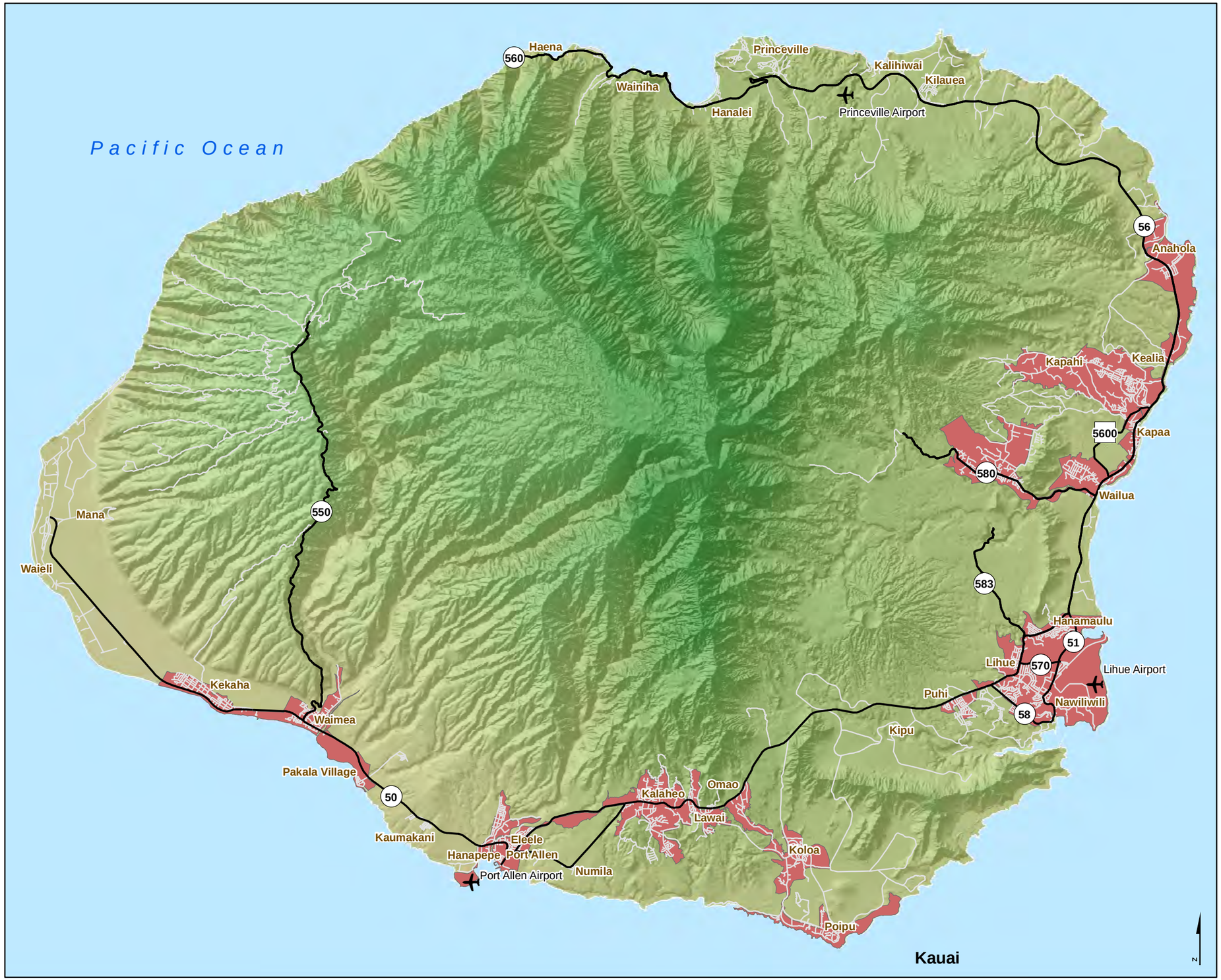
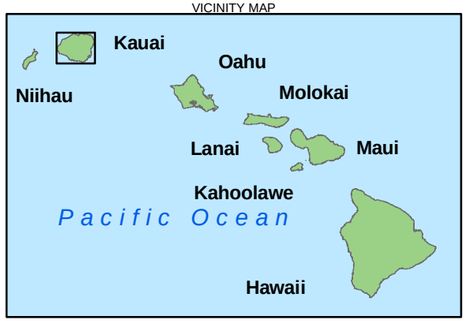


FIGURE 3-3
Urban and Rural Areas - City and County of Honolulu
Hawaii Statewide Pedestrian Master Plan



VICINITY MAP



LEGEND

- Airports
- State Highways
- Local Roads
- Census 2000 Urban Areas

Sources:
1. Urban Areas - U.S. Census 2000
2. Roads - Hawaii Department of Transportation
3. City Name - Statewide GIS Program, Hawaii Office of Planning. http://hawaii.gov/dbedt/gis/download.htm

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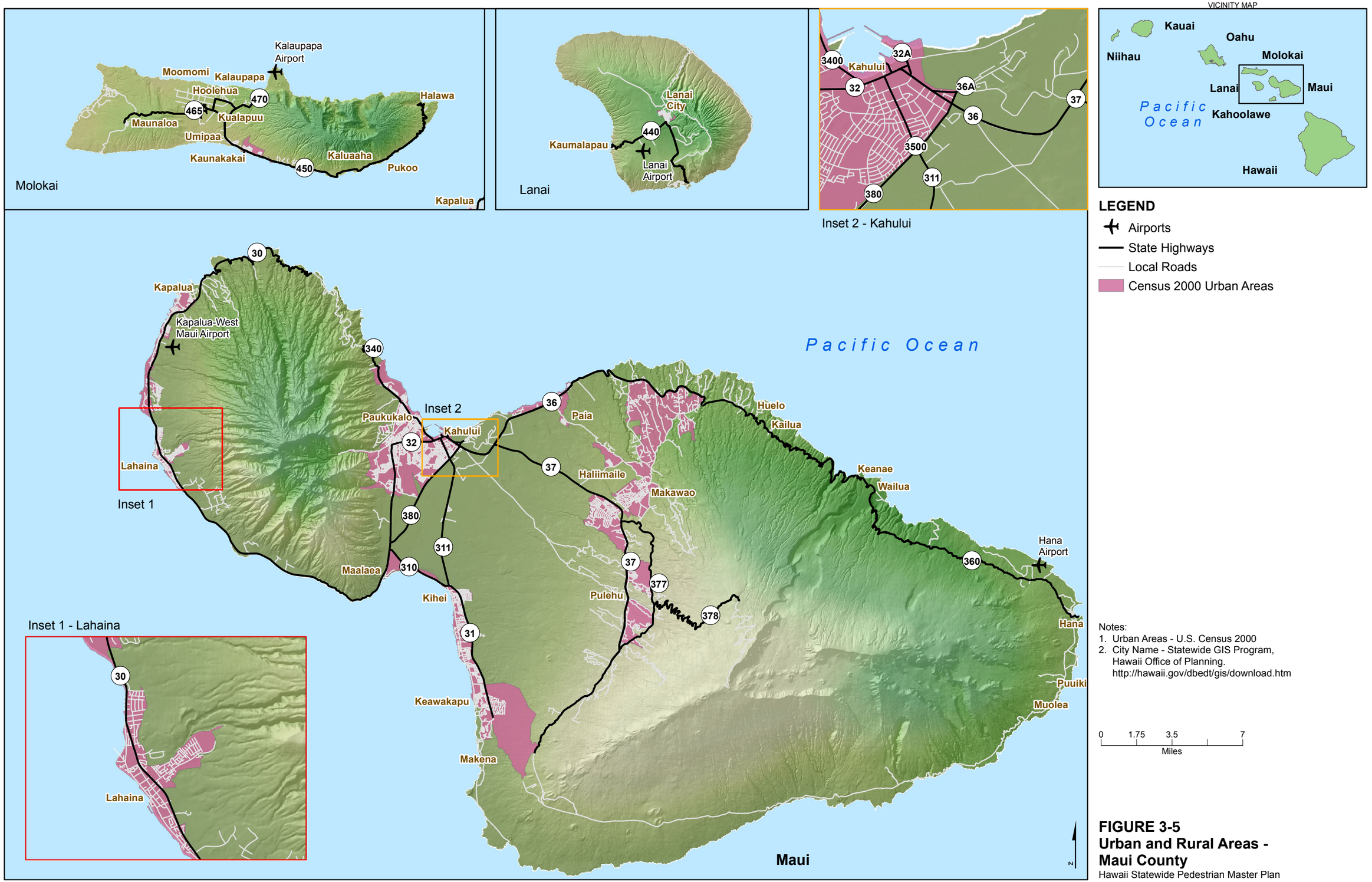
Miles

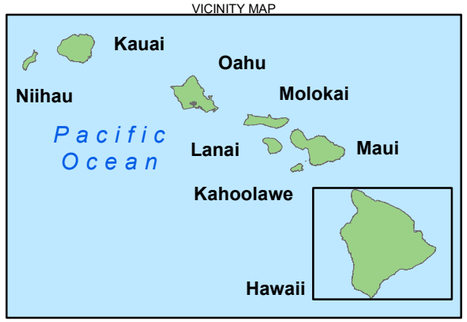
FIGURE 3-4
Urban Areas - Kauai County
Hawaii Statewide Pedestrian Master Plan



Notes:
1. Urban Areas - U.S. Census 2000
2. City Name - Statewide GIS Program, Hawaii Office of Planning. http://hawaii.gov/dbedt/gis/download.htm

FIGURE 3-5
Urban and Rural Areas - Maui County
Hawaii Statewide Pedestrian Master Plan

VICINITY MAP



LEGEND

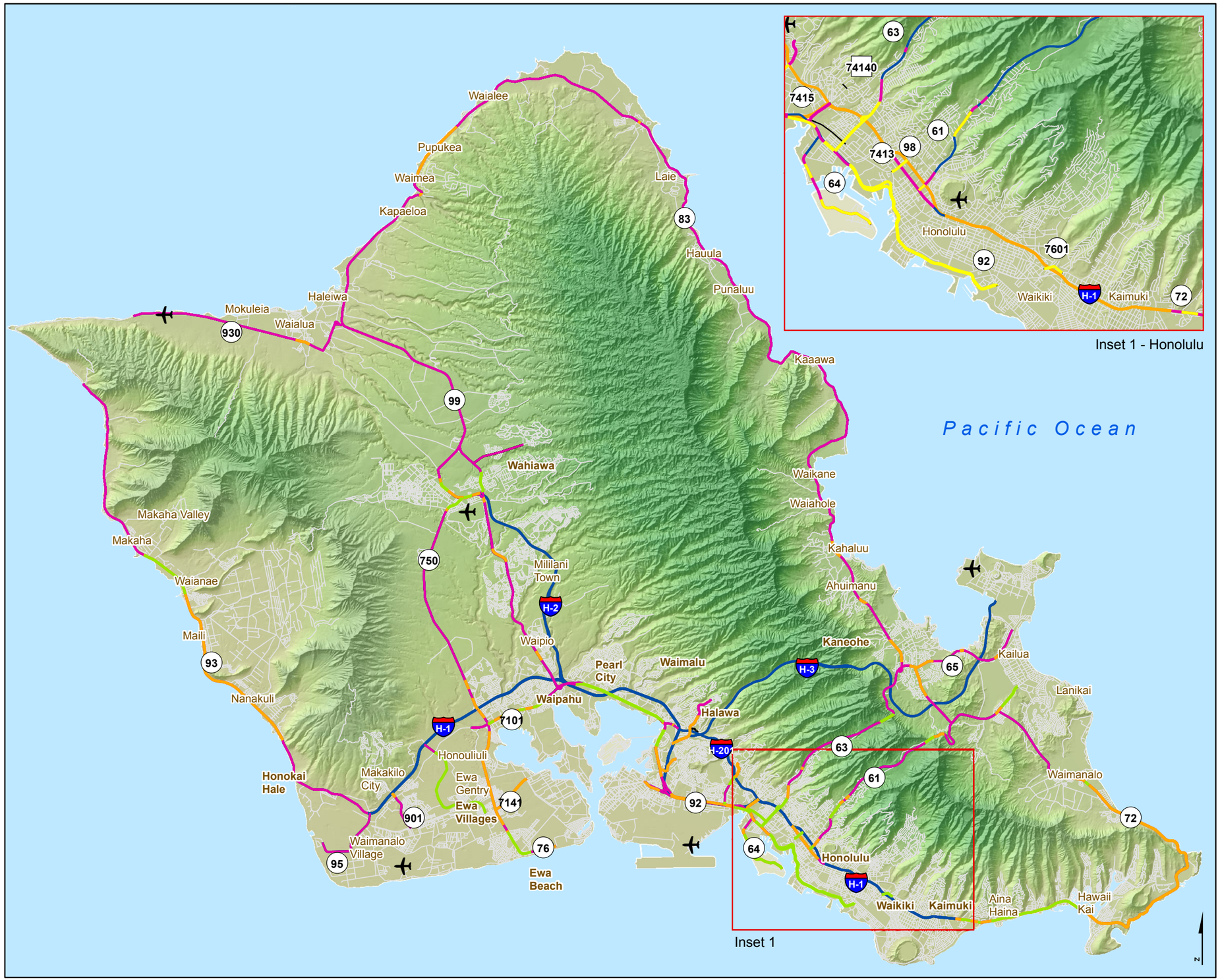
- Airports
- Na Ala Hele Trails
- Public Access Route
- Proposed Arterials (Per General Plan)
- Sidewalk on Both Sides
- Sidewalk on One Side
- No Sidewalk
- State Highways
- Local Roads

Source:
1. Sidewalks, Trails, Routes, City Names - Hawaii County
2. Local Roads - State GIS Website

Notes:
1. Data from Hawaii County (Consistent with General Plan)
2. The sidewalk data were from a shapefile. The data were manually verified and edited to match the State GIS mile point dataset. The data were then spot checked against the HDOT photo log and edited to match.

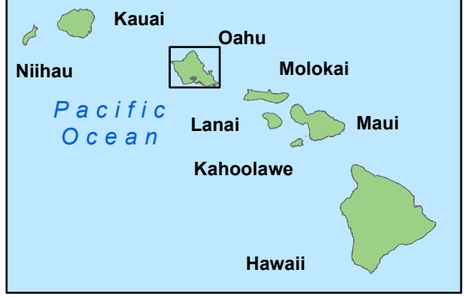
0 3.5 7 14
Miles

FIGURE 3-6
Existing Pedestrian System
Hawaii County
Hawaii Statewide Pedestrian Master Plan



Inset 1 - Honolulu

VICINITY MAP



LEGEND

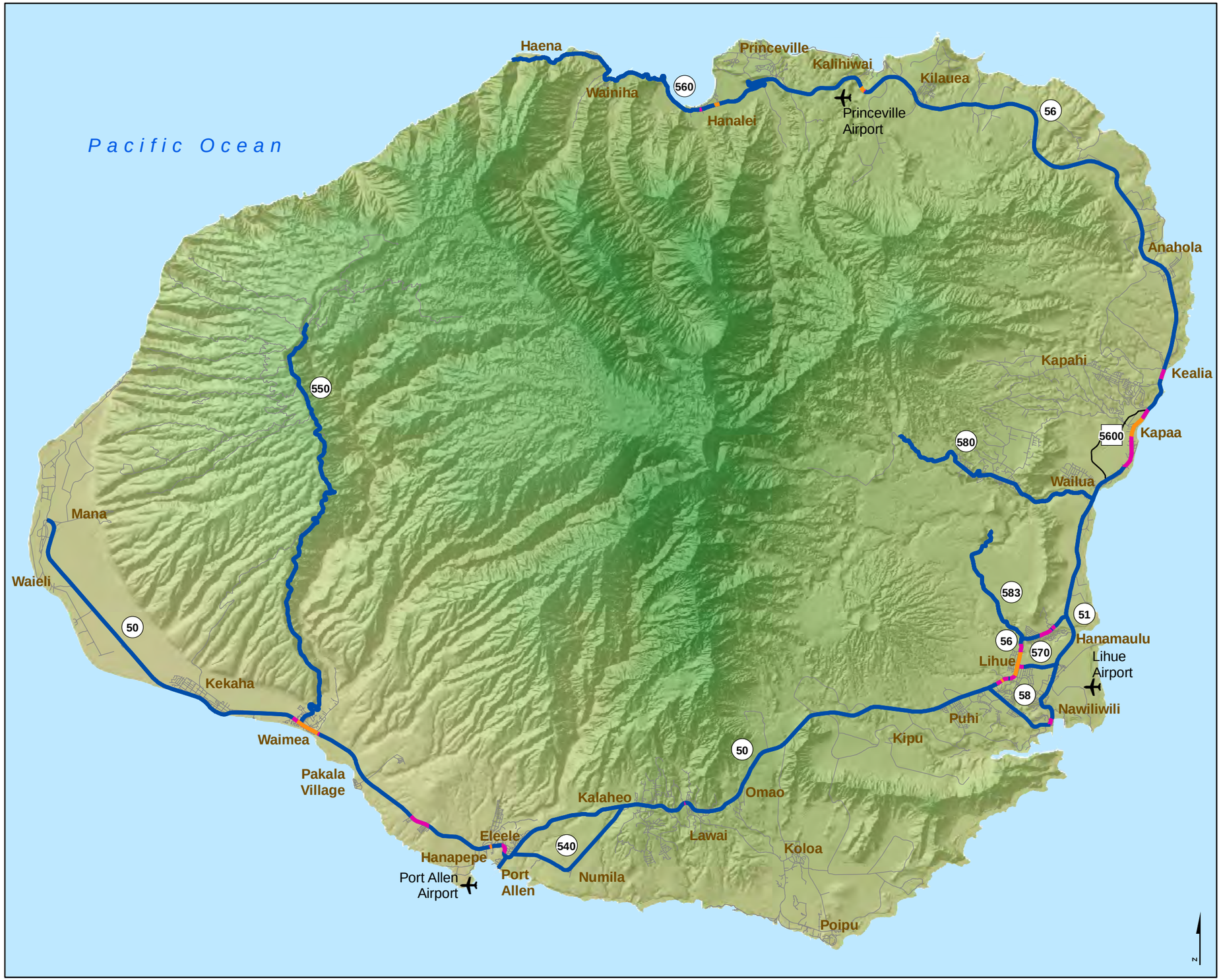
- Airports
- Sidewalk on Both Sides
- Sidewalk on One Side
- No Sidewalk
- Freeway
- Local Roads

Source:
1. Roads and Sidewalks - Hawaii Department of Transportation

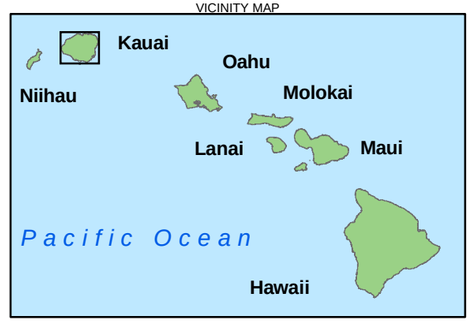
Notes:
1. The sidewalk data were from a shapefile. The data were manually verified and edited to match the State GIS mile point dataset. The data were then spot checked against the HDOT photo log and edited to match.

0 1.5 3 6
Miles

FIGURE 3-7
Existing Pedestrian System
City and County of Honolulu
Hawaii Statewide Pedestrian Master Plan



VICINITY MAP



LEGEND

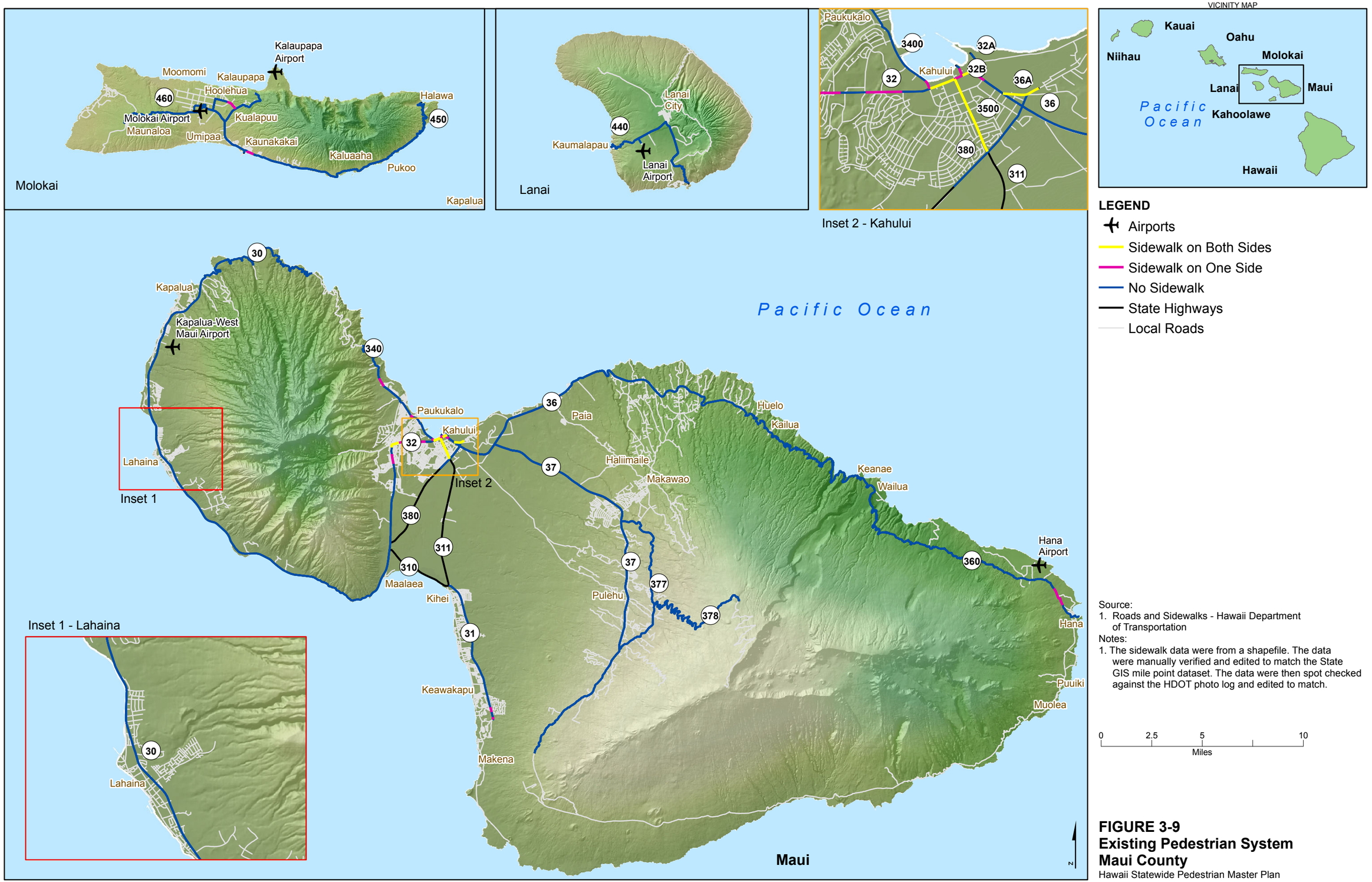
- Airports
- Sidewalk on Both Sides
- Sidewalk on One Side
- No Sidewalk
- State Highways
- Local Roads

Sources:
1. Roads and Sidewalks - Hawaii Department of Transportation

Notes:
1. The sidewalk data were from a shapefile. The data were manually verified and edited to match the State GIS mile point dataset. The data were then spot checked against the HDOT photo log and edited to match.

0 1.25 2.5 5
Miles

FIGURE 3-8
Existing Pedestrian System on State Highways
Kauai County
Hawaii Statewide Pedestrian Master Plan



Source:
1. Roads and Sidewalks - Hawaii Department of Transportation

Notes:
1. The sidewalk data were from a shapefile. The data were manually verified and edited to match the State GIS mile point dataset. The data were then spot checked against the HDOT photo log and edited to match.

FIGURE 3-9
Existing Pedestrian System
Maui County
Hawaii Statewide Pedestrian Master Plan

Figure 3-10 Examples of Rural and Urban paved roadway shoulders

Figures 3-11 through 3-14 show shoulder width for one side of the roadway. Once areas of concern are identified, a more complete study of existing shoulders within those areas will be conducted to understand what kind of opportunities might be available to enhance safety or improve connectivity.

County of Hawaii

In the County of Hawaii, there are generally shoulders along one or both sides of the state highways, varying in width between 1 and 10 feet. There are some stretches without a shoulder on one side, notably along Saddle Road (Highway 200) in the middle of the island where the highway passes through a series of game management areas, and a couple of stretches on the west coast. Figure 3-11 shows shoulder widths in the County of Hawaii.

City and County of Honolulu

The majority of highways in the City and County of Honolulu have paved shoulders on one or both sides of the road varying in width from 1 to 10 feet. The rural areas on the coast have relatively narrow shoulders: 1-2 feet in width. Figure 3-12 shows shoulders on Oahu.

County of Kauai

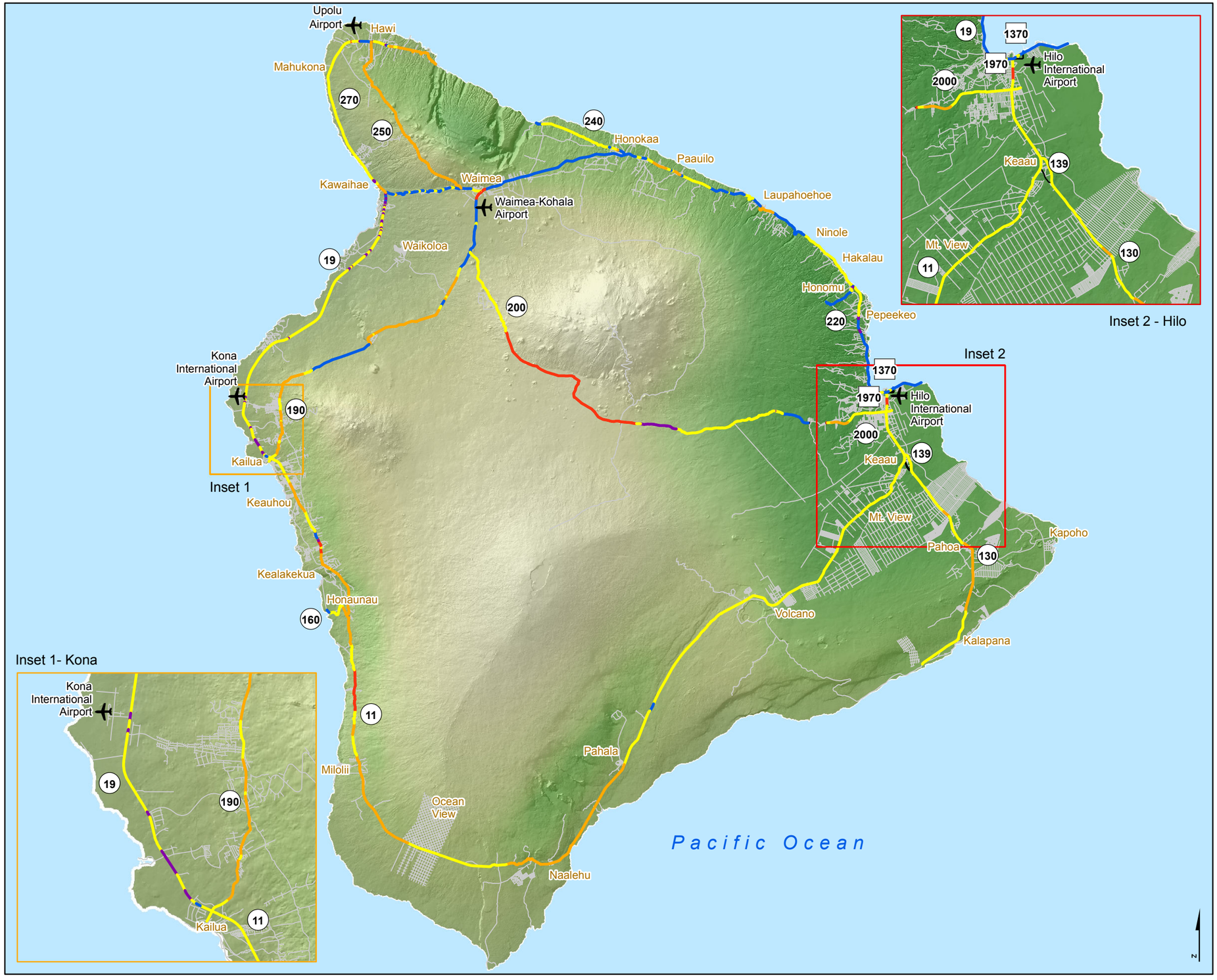
Most of the highways in Kauai have shoulders of at least 1-2 feet, but the majority of the highways have 6-10 foot paved shoulders. In towns where there are no shoulders indicated, there are sidewalks on at least one side of the road. Figure 3-13 shows shoulders in the County of Kauai.

County of Maui

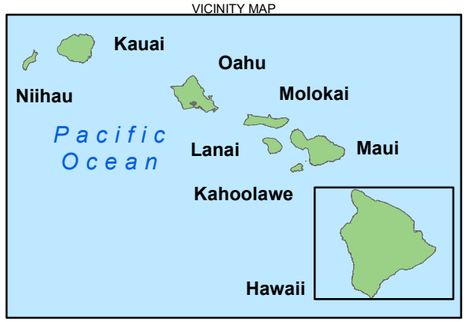
Hana Highway (Highway 360) on the northeast coast of Maui has neither shoulders nor sidewalks. The road is fairly windy and steep and cuts through a sparsely populated area. Most other highways on Maui have at least 1-2 foot shoulders, and many have 6-10 foot shoulders. Figure 3-14 shows shoulders in the County of Maui.

Lanai and Molokai

Lanai has shoulders on its entire state highway, varying in width between 1-2 feet, and 6-10 feet. Some sections of state highways in Molokai do not have shoulders, but Highway 406 on the west side of the island has 3-5 foot shoulders. The insets in Figure 3-14 show shoulders on Lanai and Molokai.



VICINITY MAP



LEGEND

- Airports
- State Highways
- Local Roads

Paved Shoulder Width

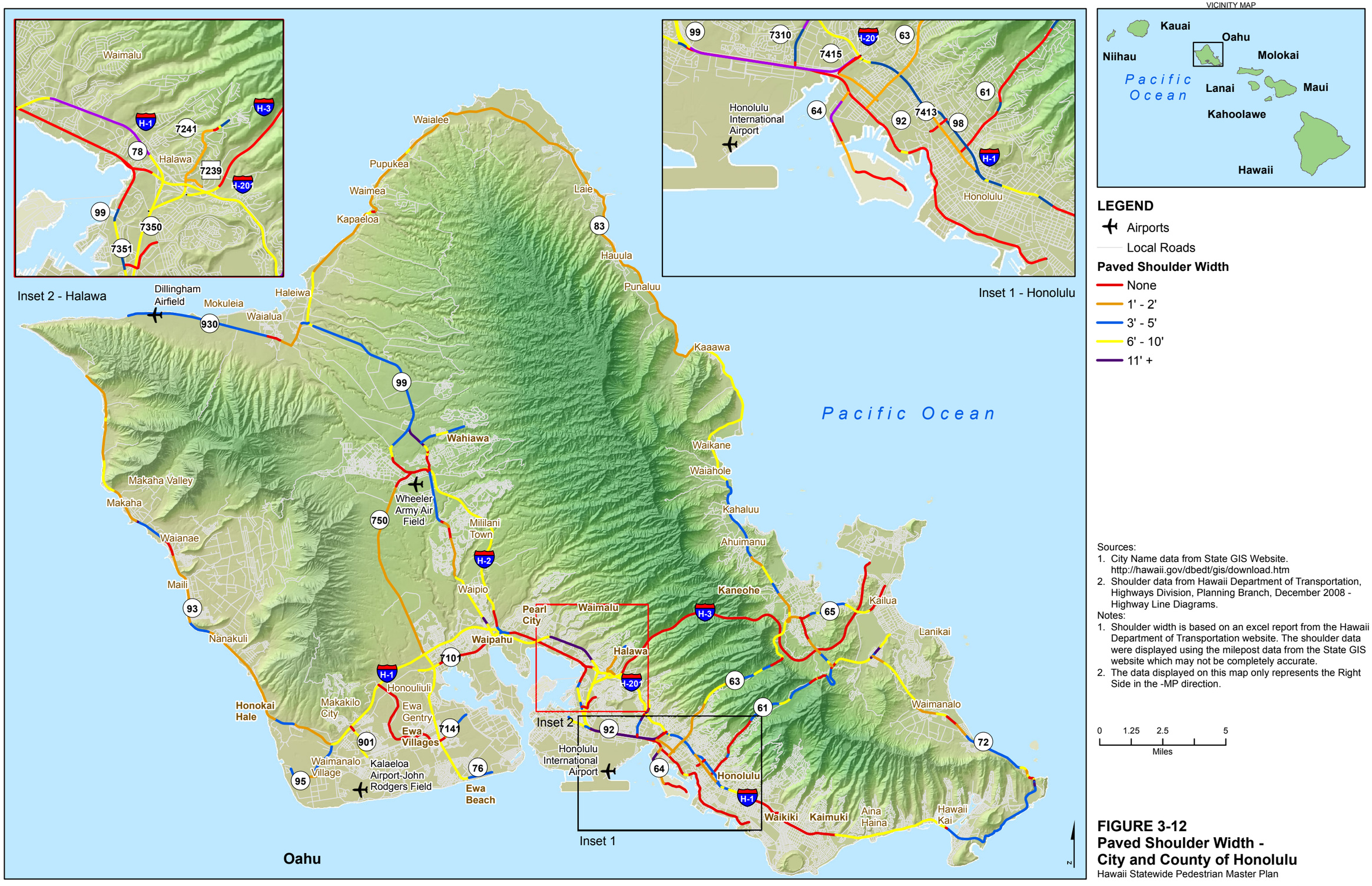
- None
- 1' - 2'
- 3' - 5'
- 6' - 10'
- 11' +

Sources:
1. City Name data from Hawaii County
2. Shoulder data from Hawaii Department of Transportation, Highways Division, Planning Branch, December 2008 - Highway Line Diagrams.

Notes:
1. Shoulder width is based on an excel report from the Hawaii Department of Transportation website. The shoulder data were displayed using the milepost data from the State GIS website which may not be completely accurate.
2. The data displayed on this map only represents the Right Side in the -MP direction.

0 3.25 6.5 13
Miles

FIGURE 3-11
Paved Shoulder Width - Hawaii County
Hawaii Statewide Pedestrian Master Plan



VICINITY MAP

LEGEND

- Airports
- Local Roads

Paved Shoulder Width

- None
- 1' - 2'
- 3' - 5'
- 6' - 10'
- 11' +

Sources:

1. City Name data from State GIS Website. http://hawaii.gov/dbedt/gis/download.htm
2. Shoulder data from Hawaii Department of Transportation, Highways Division, Planning Branch, December 2008 - Highway Line Diagrams.

Notes:

1. Shoulder width is based on an excel report from the Hawaii Department of Transportation website. The shoulder data were displayed using the milepost data from the State GIS website which may not be completely accurate.
2. The data displayed on this map only represents the Right Side in the -MP direction.

0 1.25 2.5 5
Miles

FIGURE 3-12
Paved Shoulder Width - City and County of Honolulu
Hawaii Statewide Pedestrian Master Plan

VICINITY MAP

LEGEND

- Airports
- State Highways
- Local Roads

Paved Shoulder Width

- None
- 1'-2'
- 3'-5'
- 6'-10'
- 11+

Sources:

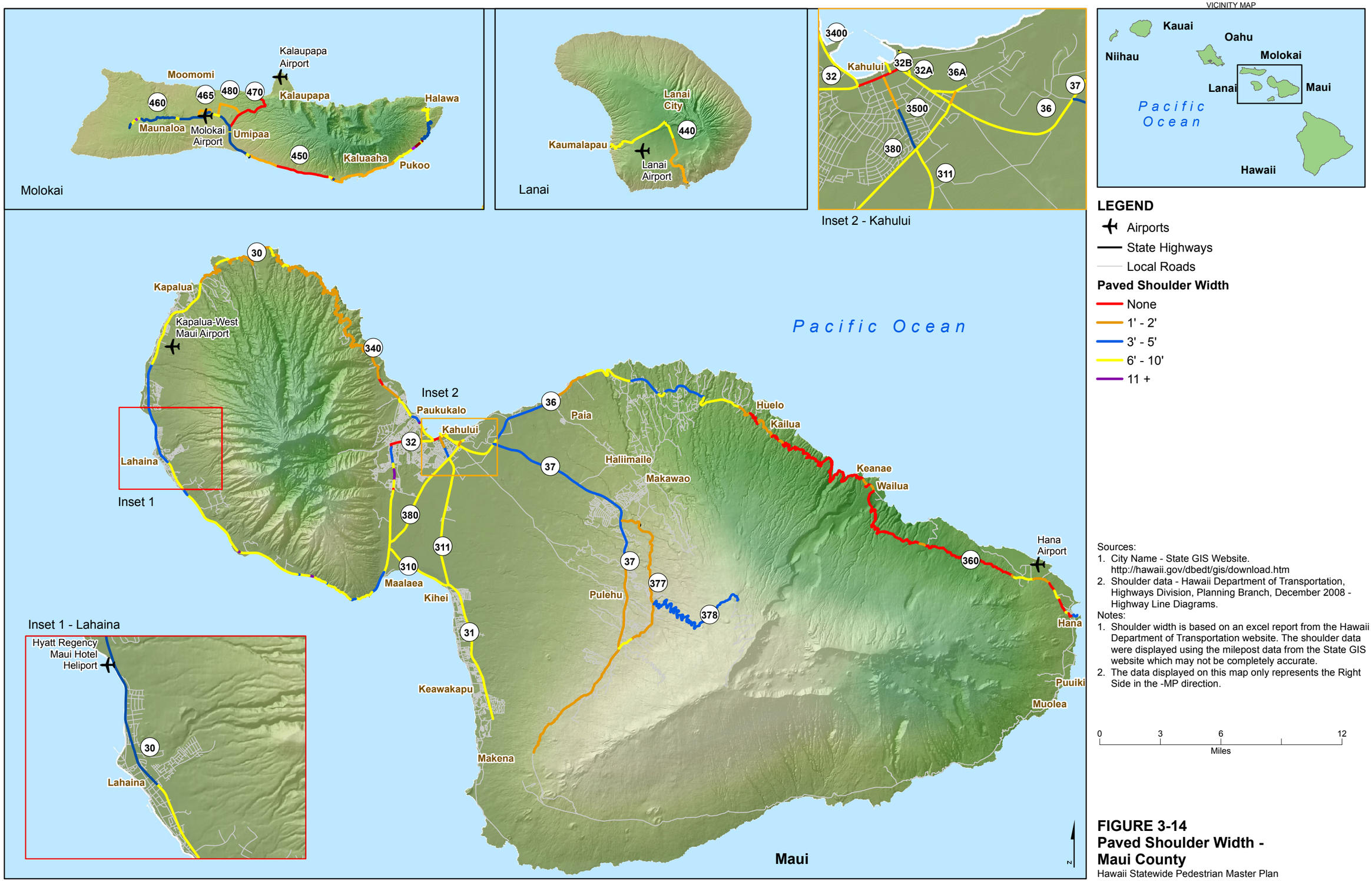
1. City Name data from the Statewide GIS Program, Hawaii Office of Planning. http://hawaii.gov/dbedt/gis/download.htm
2. Shoulder data from Hawaii Department of Transportation, Highways Division, Planning Branch, December 2008 - Highway Line Diagrams.

Notes:

1. Shoulder width is based on an excel report from the Hawaii Department of Transportation website. The shoulder data were displayed using the milepost data from the State GIS website.
2. The data displayed on this map only represents the Right Side in the -MP direction.

0 1.25 2.5 5
Miles

FIGURE 3-13
Paved Shoulder Width - Kauai County
Hawaii Statewide Pedestrian Master Plan



Sources:
1. City Name - State GIS Website. http://hawaii.gov/dbedt/gis/download.htm
2. Shoulder data - Hawaii Department of Transportation, Highways Division, Planning Branch, December 2008 - Highway Line Diagrams.

Notes:
1. Shoulder width is based on an excel report from the Hawaii Department of Transportation website. The shoulder data were displayed using the milepost data from the State GIS website which may not be completely accurate.
2. The data displayed on this map only represents the Right Side in the -MP direction.

FIGURE 3-14
Paved Shoulder Width - Maui County
Hawaii Statewide Pedestrian Master Plan

Land Use

Land use is an important consideration for pedestrians; different land use designations attract different types of users, and pedestrians are more likely to be present in commercial and higher-density residential areas. Resorts, urban areas, and universities are more likely to have a high concentration of pedestrian uses compared to open space or rural designations.

Land use is guided by General Plans for the Counties; however, only the Counties of Hawaii and Kauai have recent general plans. Land uses from the Hawaii State Office of Planning for the City and County of Honolulu (CCH) and County of Maui show existing and planned land uses for the islands. These tend to be fairly general, with categories including residential, commercial, industrial, agricultural, etc. Where the General Plans' GIS layers were unavailable, the following analysis used land use data gathered from the state GIS website from the Hawaii Office of Planning.

Land use in the rural areas tend to have conservation, agricultural lands, and open space in the interior of the state, with more urban land use within the cities and towns, generally on the coast. Urban areas have a mix of densities, and land uses vary from commercial and industrial to low density urban uses.

County of Hawaii

Land use in the County of Hawaii is defined in the General Plan. The vast majority of land use within the County of Hawaii is conservation, open areas, and important agricultural lands, with rural designations scattered in the south and east part of the island. Many of the smaller towns along the coast, including Honokaa, Paauilo, Laupahoehoe, etc. are designated as rural lands, while Hilo and Kailua-Kona have a range of land uses including high, medium, and low density urban, university use, resort, and industrial designations. These uses attract more pedestrian use, along with areas designated for future urban expansion. Urban expansion areas are an important consideration for the future pedestrian system as these areas attract more people, jobs, and pedestrians. Figure 3-15 shows the land use in the County of Hawaii.

City and County of Honolulu

As the state's most populous island, Oahu has a more mixed land use pattern than the other islands. Since the CCH did not have a current General Plan GIS layer that was readily available, the land use data are from the Hawaii Office of Planning. There is less overall land designated as forest, agricultural uses compared to the other islands, though these uses are still predominant. Commercial and service uses and residential designations comprise the next biggest land use, while industrial and urban, or built-up land is centered mainly on the southern coast and Central Oahu. The coastal towns are different from the neighbor islands, in that they have some commercial and service designations, while similar towns on the neighbor islands are classified as rural. The more urban nature of the island suggests that pedestrians are likely to be found throughout the island, including the larger cities and smaller towns. Figure 3-16 shows the land use in the City and County of Honolulu.

County of Kauai

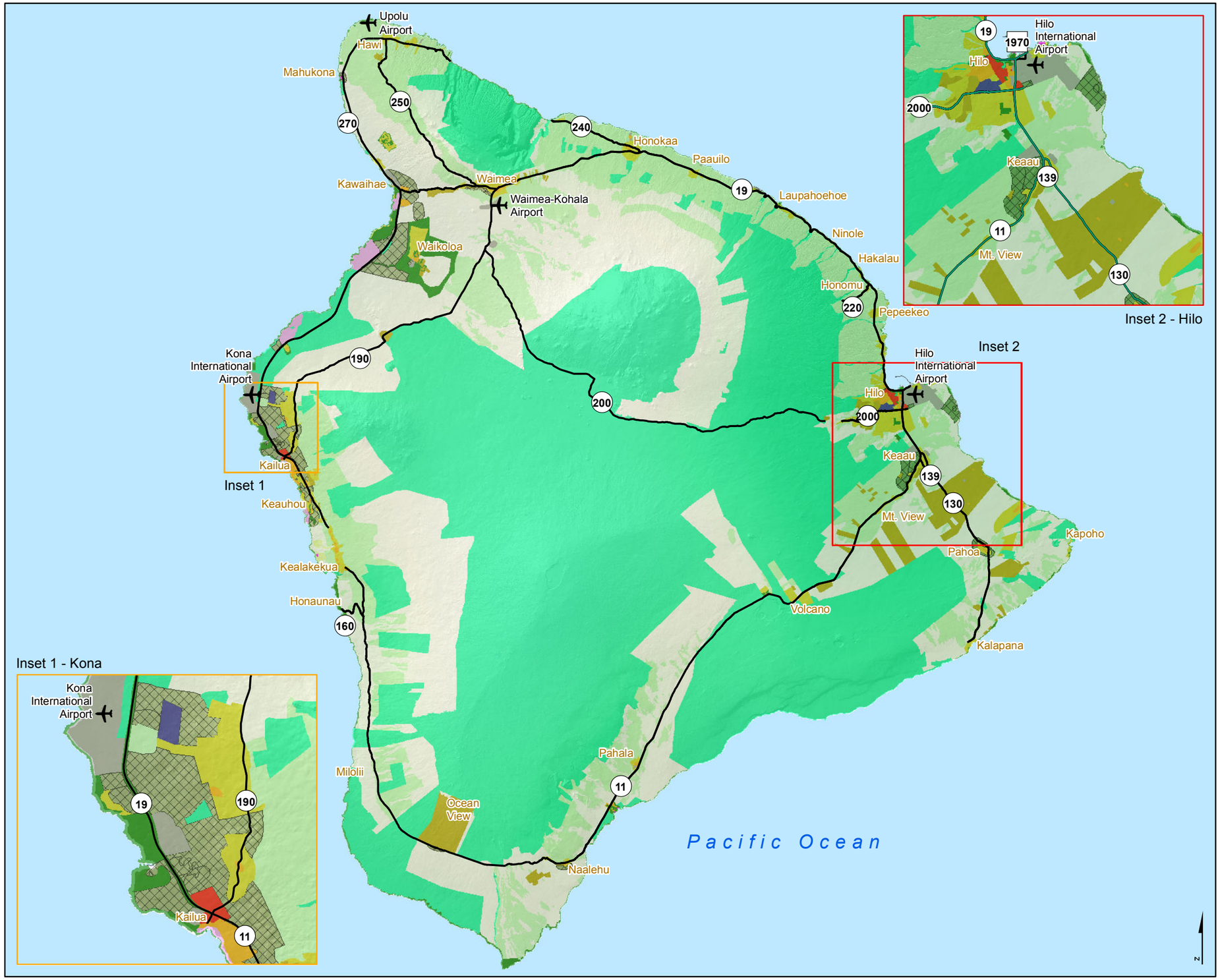
Kauai land use is included in the General Plan for the Island of Kauai (2000). The vast majority of Kauai's land use is designated open and agriculture. There are only three urban center designations, in Kapaa, Lihue, and Port Allen. Residential community designations are spread out along much of the island's coast, and are not always associated with an urban center designation. Pedestrians are likely to be present in these areas, even without the urban center designation. Figure 3-17 shows the land use in the County of Kauai.

County of Maui

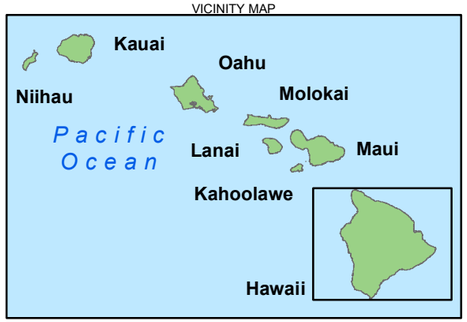
The County of Maui recently updated their General Plan; however, land use data are not yet available. The analysis below uses land use data from the Hawaii Office of Planning. Maui's Commercial and Services designations and Residential areas are clustered in the central part of the island and the west coast, while forest and rangeland designations are the majority of land uses overall. Urban or built-up land designations are found in the main cities, Kahului, Wailuku, and Lahaina. Figure 3-18 shows the land use in the County of Maui.

Lanai and Molokai

Both islands have very few areas with designated commercial and residential uses, mainly in the population centers. The majority of both islands are designated as forest, rangeland, or agricultural land. The insets in Figure 3-18 show the land use on Lanai and Molokai.



VICINITY MAP



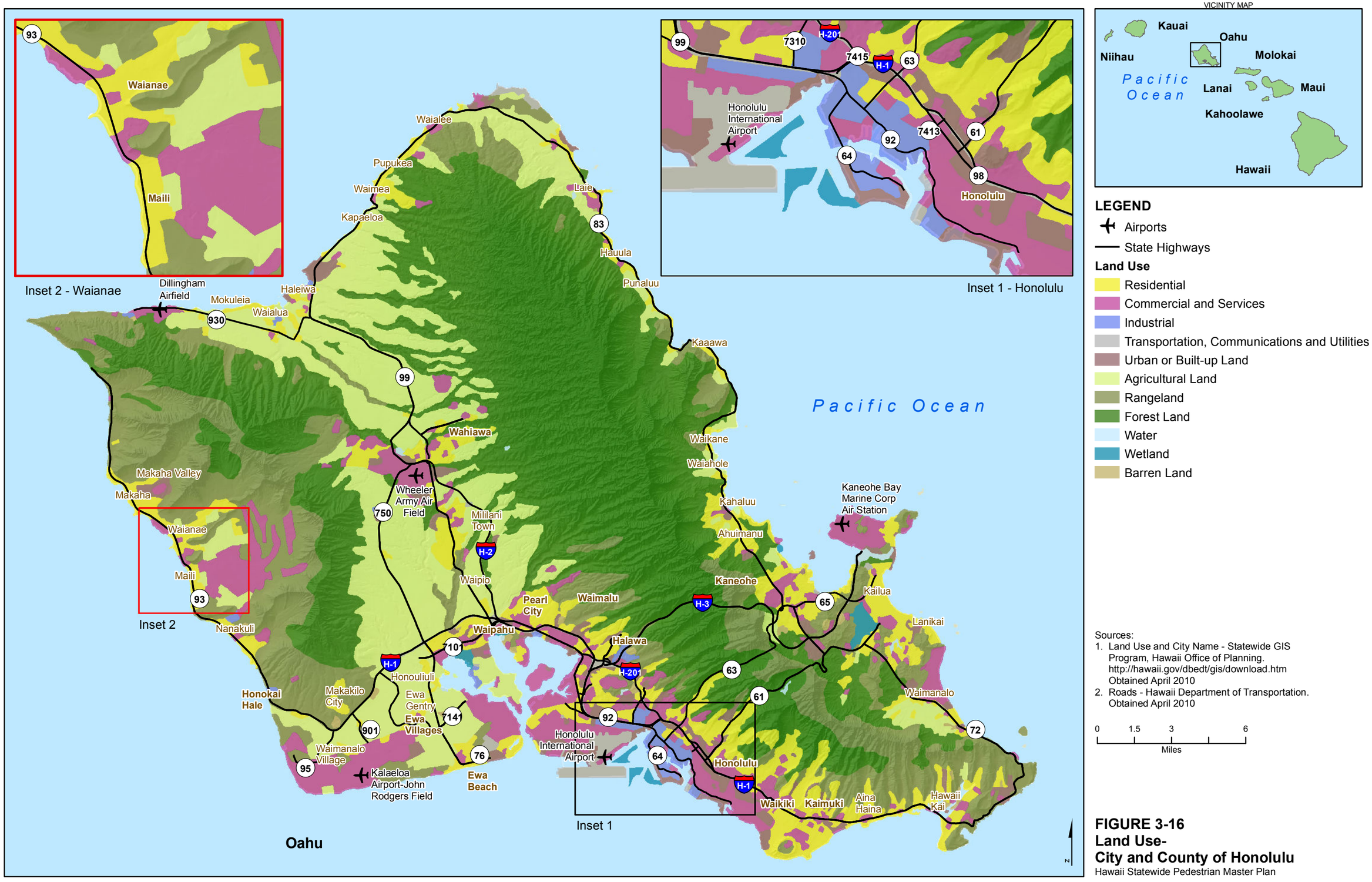
LEGEND

- Airports
- (Breakwater)
- Conservation
- Extensive Agriculture
- High Density Urban
- Important Ag. Lands
- Industrial
- Low Density Urban
- Medium Density Urban
- Open Area
- Orchards
- (Pond)
- Resort Node
- Resort
- Rural
- Urban Expansion
- University Use

Sources:
1. Land Use Pattern Allocation Data and Town Names - Hawaii County, Consistent with the General Plan. Obtained May 2010
2. Roads - Hawaii Department of Transportation. Obtained April 2010

0 5 10 20
Miles

FIGURE 3-15
Land Use- Hawaii County
Hawaii Statewide Pedestrian Master Plan



VICINITY MAP

LEGEND

- Airports
- State Highways

Land Use

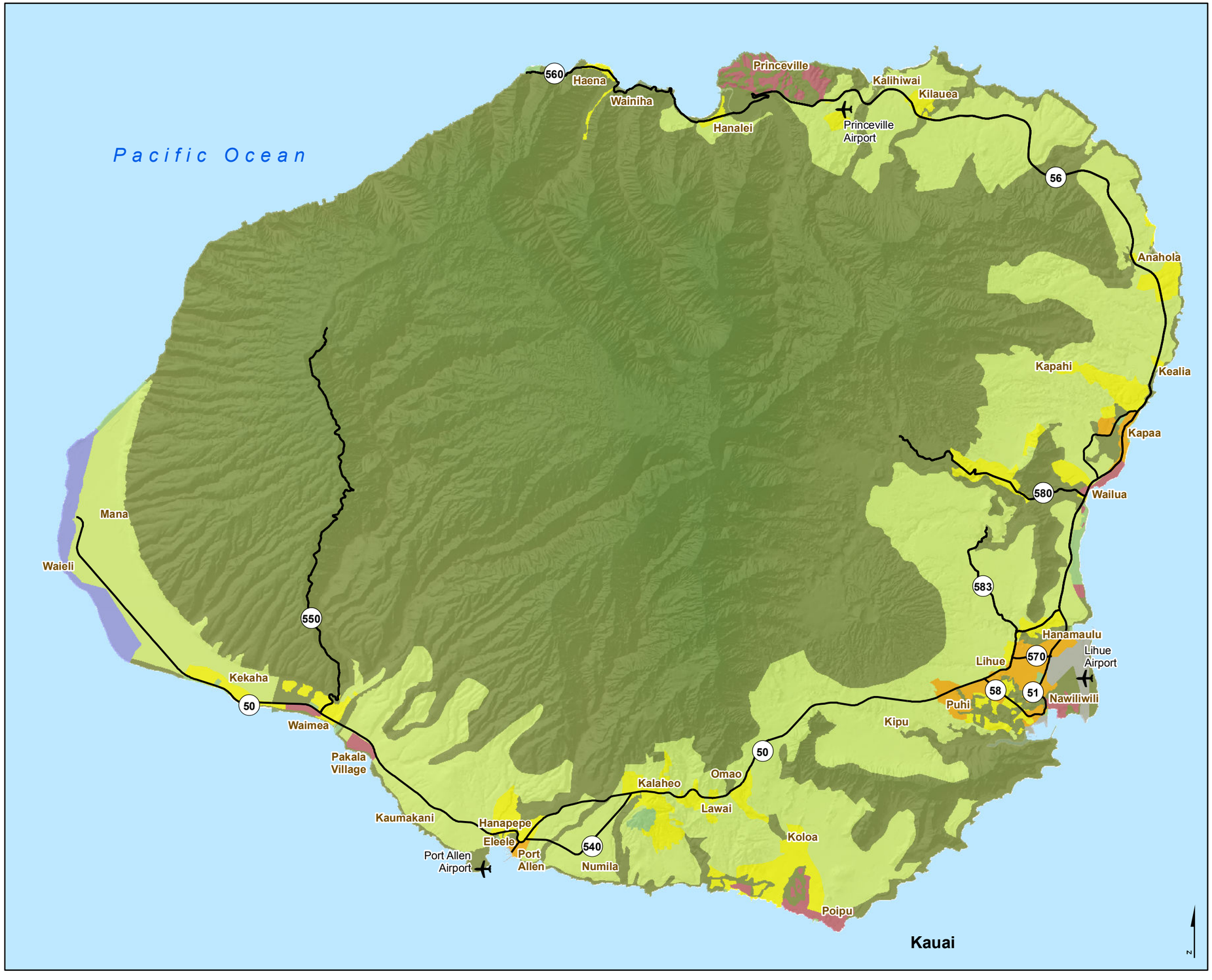
- Residential
- Commercial and Services
- Industrial
- Transportation, Communications and Utilities
- Urban or Built-up Land
- Agricultural Land
- Rangeland
- Forest Land
- Water
- Wetland
- Barren Land

Sources:

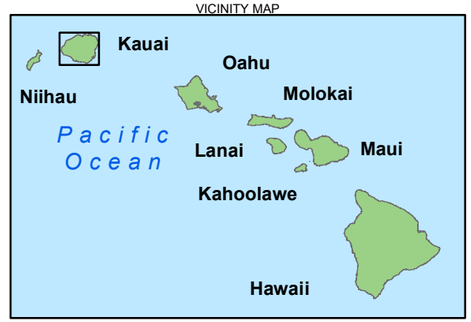
1. Land Use and City Name - Statewide GIS Program, Hawaii Office of Planning. http://hawaii.gov/dbedt/gis/download.htm Obtained April 2010
2. Roads - Hawaii Department of Transportation. Obtained April 2010

0 1.5 3 6
Miles

FIGURE 3-16
Land Use-
City and County of Honolulu
Hawaii Statewide Pedestrian Master Plan



VICINITY MAP



LEGEND

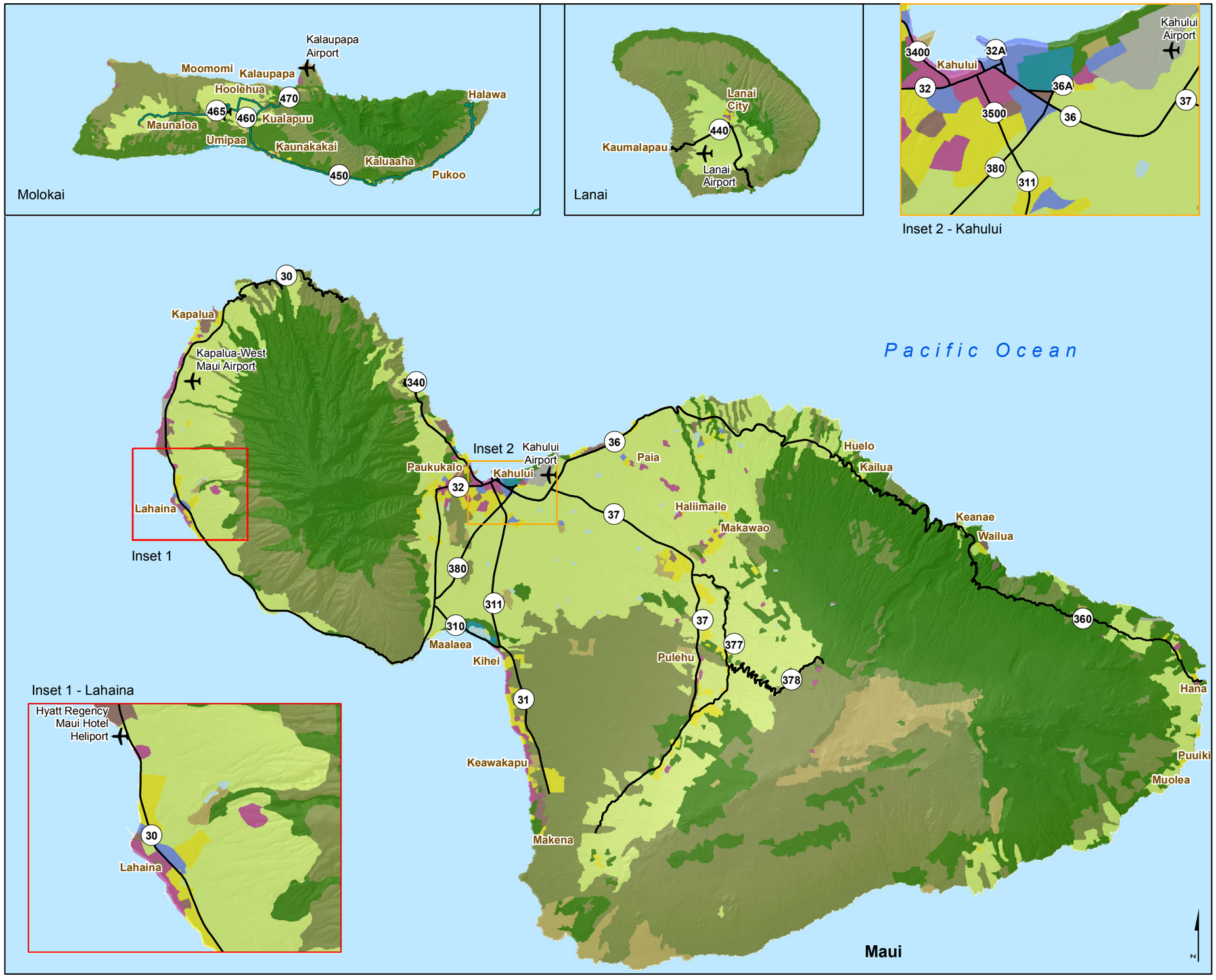
- Airports
- State Highways
- Open
- Agriculture
- Park
- Resort
- Urban Center
- Residential Community
- Transportation
- Military

Sources:

1. Land Use - General Plan for the Island of Kauai (2000) County of Kauai Planning Department, 2006. Obtained April 2010
2. City Name - Statewide GIS Program, Hawaii Office of Planning. http://hawaii.gov/dbedt/gis/download.htm Obtained April 2010
3 Roads - Hawaii Department of Transportation. Obtained April 2010

0 1.25 2.5 5
Miles

FIGURE 3-17
Land Use- Kauai County
Hawaii Statewide Pedestrian Master Plan



Sources:
1. Land Use and City Name - Statewide GIS Program, Hawaii Office of Planning. http://hawaii.gov/dbedt/gis/download.htm Obtained April 2010
2. Roads - Hawaii Department of Transportation. Obtained April 2010

0 2.5 5 10
Miles

FIGURE 3-18
Land Use- Maui County
Hawaii Statewide Pedestrian Master Plan

Transit Routes

Transit routes are important to consider since riders walk to and from transit stops and between transit stops and their destinations. On the Big Island, riders wait along roadways along the transit route and flag down transit vehicles as they approach. Maui, Kauai, and Oahu have formal bus stops, but Oahu is the only island with transit centers. The transit routes shown on Figures 3-19 to 3-22 are pedestrian attractors in and of themselves. Routes are an important consideration, since pedestrians are common along the entire route, either waiting to board or getting off of a bus or transit vehicle.

County of Hawaii

The County of Hawaii's transit provider is Hele-On Bus, which serves the County of Hawaii with low-priced island passenger service. Additionally there is a shared ride taxi program that provides door to door transportation within the urban Hilo area. Bus routes for the County of Hawaii generally are along the coastal areas on the state highway. There are a couple of areas where the routes extend to a city or town, but they are primarily along the main highways around the island. One bus route extension passes through Pahoa to Kalapana on the east side. Another goes through Hilo and another route extends to Hawi in the north, down to Kona. In addition, there is a route that travels along the Mamalahoa Highway (Highway 190) inland from the coast. Figure 3-19 shows transit routes in the County of Hawaii.

City and County of Honolulu

Honolulu's transit provider, TheBus, is run by the Oahu Transit Service (OTS). Oahu has the most extensive transit system of the islands, with multiple routes crossing over the mountains in the southeastern part of the islands and routes extending through the central part of the island and almost completely around the coast of the entire island. Oahu is also unique among the other islands because there are transit centers and park and rides. Figure 3-20 shows transit routes in Oahu.

County of Kauai

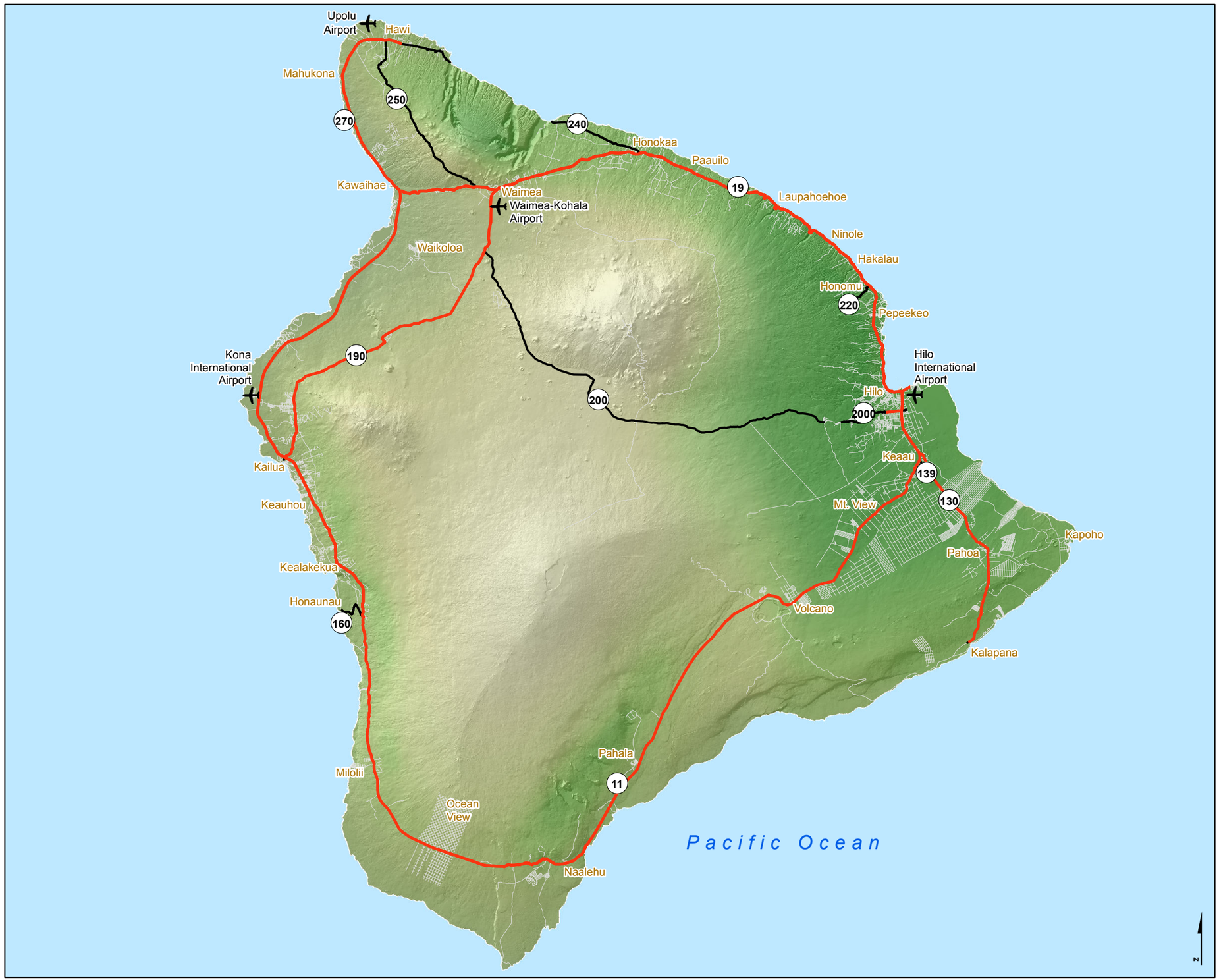
The County of Kauai's transit provider is Kauai Bus. Transit routes in Kauai generally follow the state highways, with some small loops on local roads through populated areas including Poipu, Hanapepe, and Nawiliwili. Figure 3-21 shows transit routes in the County of Kauai.

County of Maui

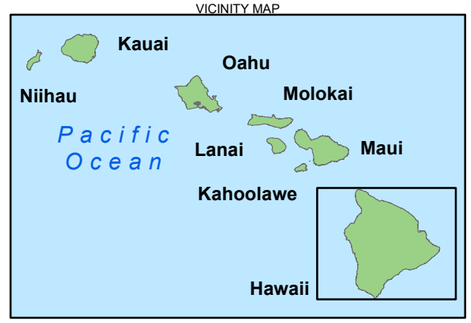
Maui's transit provider is Maui Bus. Transit routes on Maui are limited to the central and western part of the island. There are no routes to the interior part of the island except the route through central Maui between Kahului and Maalaea. There are a handful of routes that make a small loop in a city or town, while other routes pass through more populated areas on the island. Figure 3-22 shows transit routes in the County of Maui.

Lanai and Molokai

Lanai and Molokai do not have transit routes.



VICINITY MAP



LEGEND

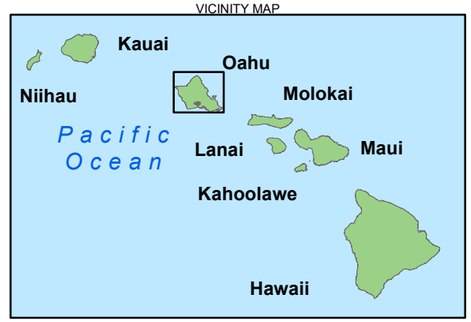
- Airports
- Bus Route
- State Highways
- Local Roads

Source:
1. Roads - Hawaii Department of Transportation
2. Bus Route - Hawaii County (2009)
3. City Name - Hawaii County

0 3.75 7.5 15
Miles

FIGURE 3-19
Existing Bus Routes
Hawaii County
Hawaii Statewide Pedestrian Master Plan

VICINITY MAP



LEGEND

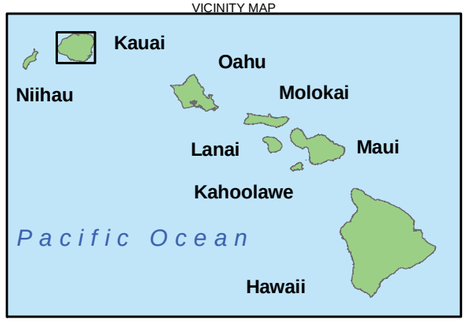
- Airports
- Bus Route
- State Highways
- Local Roads
- Transit Centers

Source:
1. City Name - State GIS Website. http://hawaii.gov/dbedt/gis/download.htm
2. Bus Route - City/County of Honolulu
3. Roads - Hawaii Department of Transportation

0 2.5 5
Miles

FIGURE 3-20
Existing Bus Routes (2009)
City and County of Honolulu
Hawaii Statewide Pedestrian Master Plan

VICINITY MAP



LEGEND

- Airports
- Bus Routes
- State Highways
- Local Roads

Source:
1. City Name - State GIS Website. http://hawaii.gov/dbedt/gis/download.htm
2. Roads - Hawaii Department of Transportation

Notes:
1. Bus Route data developed from bus schedules found on County of Kauai Transportation Agency website.

0 1 2 4
Miles

FIGURE 3-21
Existing Bus Routes (2009)
Kauai County
Hawaii Statewide Pedestrian Master Plan

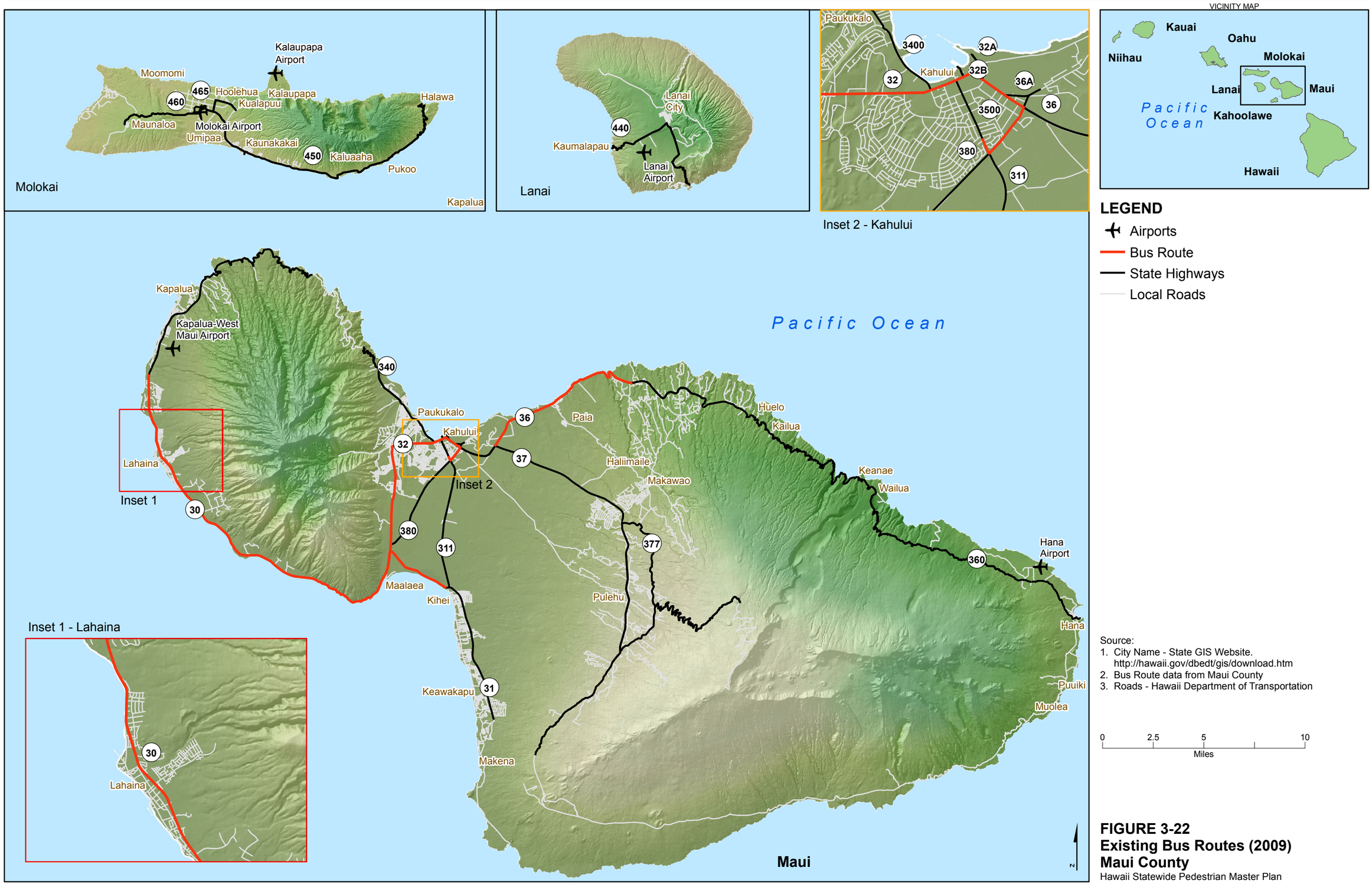


FIGURE 3-22
Existing Bus Routes (2009)
Maui County
Hawaii Statewide Pedestrian Master Plan

Pedestrian Attractors

Pedestrian attractors are important to consider for the Plan because attractors are likely to have a higher concentration of pedestrians. These locations also offer opportunities to enhance the pedestrian system to increase walking.

Pedestrian attractors, as defined by the Project Technical Advisory Committee (TAC) and Citizen Advisory Committee (CAC) include public facilities such as schools, harbors, stadiums, State and County beaches, State and County parks, transit centers and heavily used bus stops, future rail stations (Oahu), hotel areas, libraries, medical facilities, police stations, government service buildings, high-density residential districts, and commercial districts. Tourist amenities are also considered pedestrian attractors and include shopping areas, ship terminals, parks, clusters of restaurants, and recreation and resort areas. For the most part, pedestrian attractors are located in cities and towns, however, some attractors are located in rural areas such as parks and scenic areas where tourists park and walk to the attractor. Figures 3-23 to 3-27 show pedestrian attractors in Hawaii.

County of Hawaii

The County of Hawaii has a number of forest reserves and State and National parks that are pedestrian attractors. The national parks and forest reserves are located in the more rural areas in the center and southern part of the island. There are also a few beach parks, in the southern part of the island and in the north near Mahukona. There are a number of boat ramps and ship terminals along the coast, usually associated with a park, a town, or a city.

The more populous areas have libraries, shopping areas, and County recreation parks. In Kona there are a number of hotel areas, especially along the beach. Both Kona and Hilo are urban areas with numerous schools. Figure 3-23 shows pedestrian attractors in the County of Hawaii.

City and County of Honolulu

The City and County of Honolulu has multiple attractions, mostly in the south and central area of the island, though there are a number of attractors on the north, east, and south shores, including Pearl Harbor. Oahu is also the only island in the state that has transit centers, with centers in Waimanalo, Waianae, Waipahu, Mililani, Hawaii Kai, and Kalihi. There are also a number of state parks including Kahana Valley State Park, Keaiwa Heiau State Recreational Area, Waahila Ridge State Recreational Area, and Diamond Head State Monument. Figure 3-24 shows pedestrian attractors throughout the island.

The Central Business District in Honolulu is the densest urban area in the state, and consequently has the most pedestrian attractors. There are hotel areas and tourist attractors including a zoo, shopping areas, parks, monuments, museums, and cruise ship terminals. There are also a number of schools, universities, libraries, tsunami shelters, and transit centers to serve the permanent population. These areas generally have sidewalks of varying widths to accommodate a variety of pedestrian volumes. Pedestrian attractors in the Central Business District in Honolulu are shown in Figure 3-25.

County of Kauai

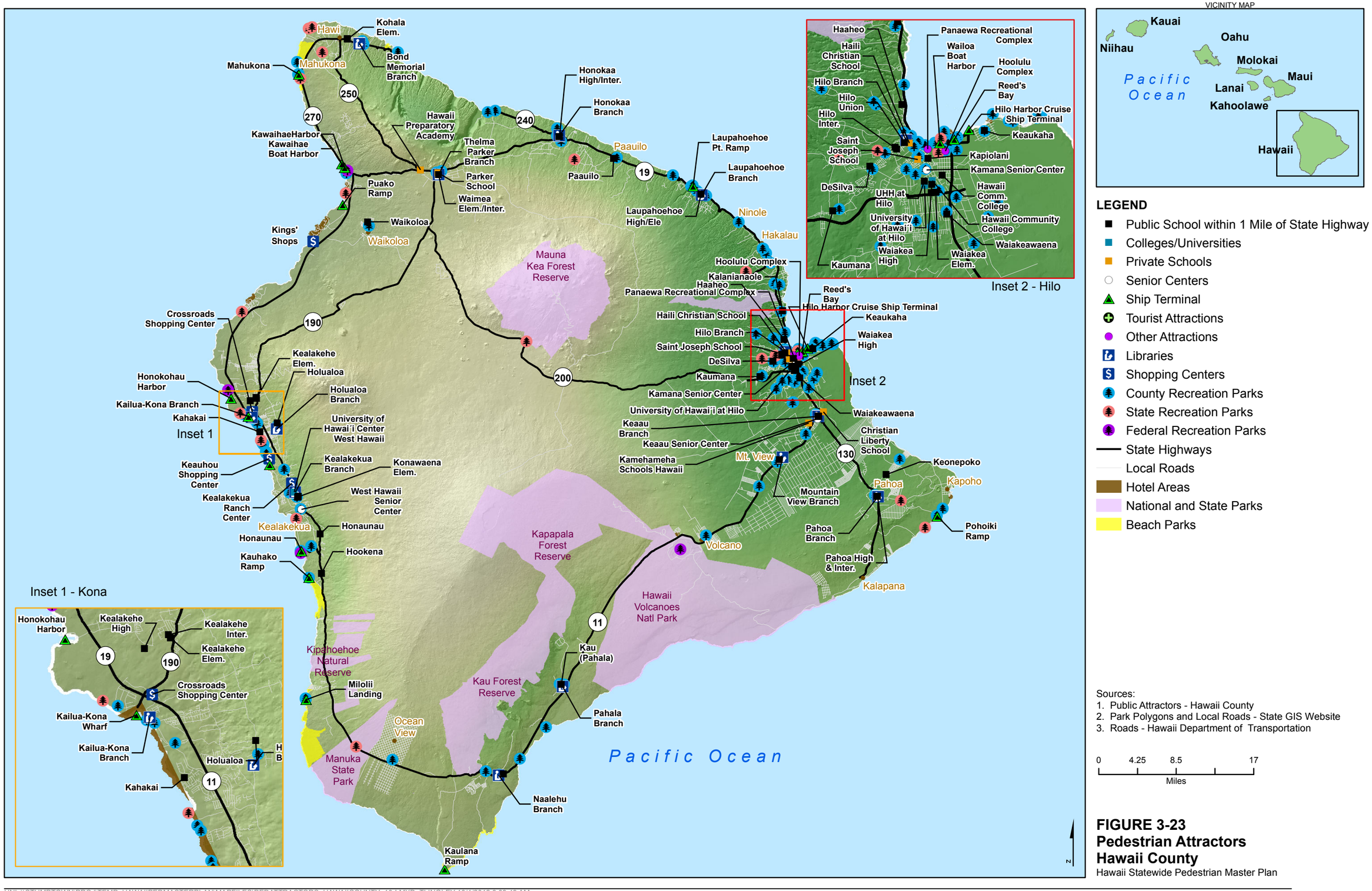
Kauai has a number of hotel areas: Princeville, Wailua, Kapaa, Nawiliwili, and Poipu. There are also three state parks on the island: Na Pali Coast, Kokee, and Wailua River State Parks. The towns have attractors including shopping areas, libraries, schools, local parks, and community centers. Figure 3-26 shows pedestrian attractors in County of Kauai.

County of Maui

Maui has one national park, Haleakala, in the eastern part of the island. The more urbanized central valley and west coast contains typical community amenities: schools, parks, shopping centers, etc. Hotel areas are located on the west coast between Kapalua and Lahaina and along the Piilani Highway (Highway 31) in the central part of the island between Kihei and Makena. Kahului also has a hotel area. Figure 3-27 shows pedestrian attractors in the County of Maui.

Lanai and Molokai

There is a senior center and public library in the center of Lanai. Molokai has a community center, a few schools, a couple of parks, a few resorts, and a library. The insets on Figure 3-27 show pedestrian attractors on Lanai and Molokai.



VICINITY MAP

LEGEND

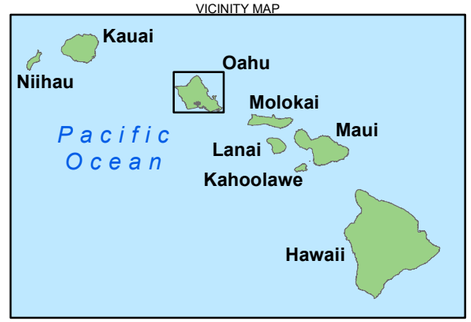
- Public School within 1 Mile of State Highway
- Colleges/Universities
- Private Schools
- Senior Centers
- Ship Terminal
- Tourist Attractions
- Other Attractions
- Libraries
- Shopping Centers
- County Recreation Parks
- State Recreation Parks
- Federal Recreation Parks
- State Highways
- Local Roads
- Hotel Areas
- National and State Parks
- Beach Parks

Sources:
1. Public Attractors - Hawaii County
2. Park Polygons and Local Roads - State GIS Website
3. Roads - Hawaii Department of Transportation

0 4.25 8.5 17
Miles

FIGURE 3-23
Pedestrian Attractors
Hawaii County
Hawaii Statewide Pedestrian Master Plan

VICINITY MAP



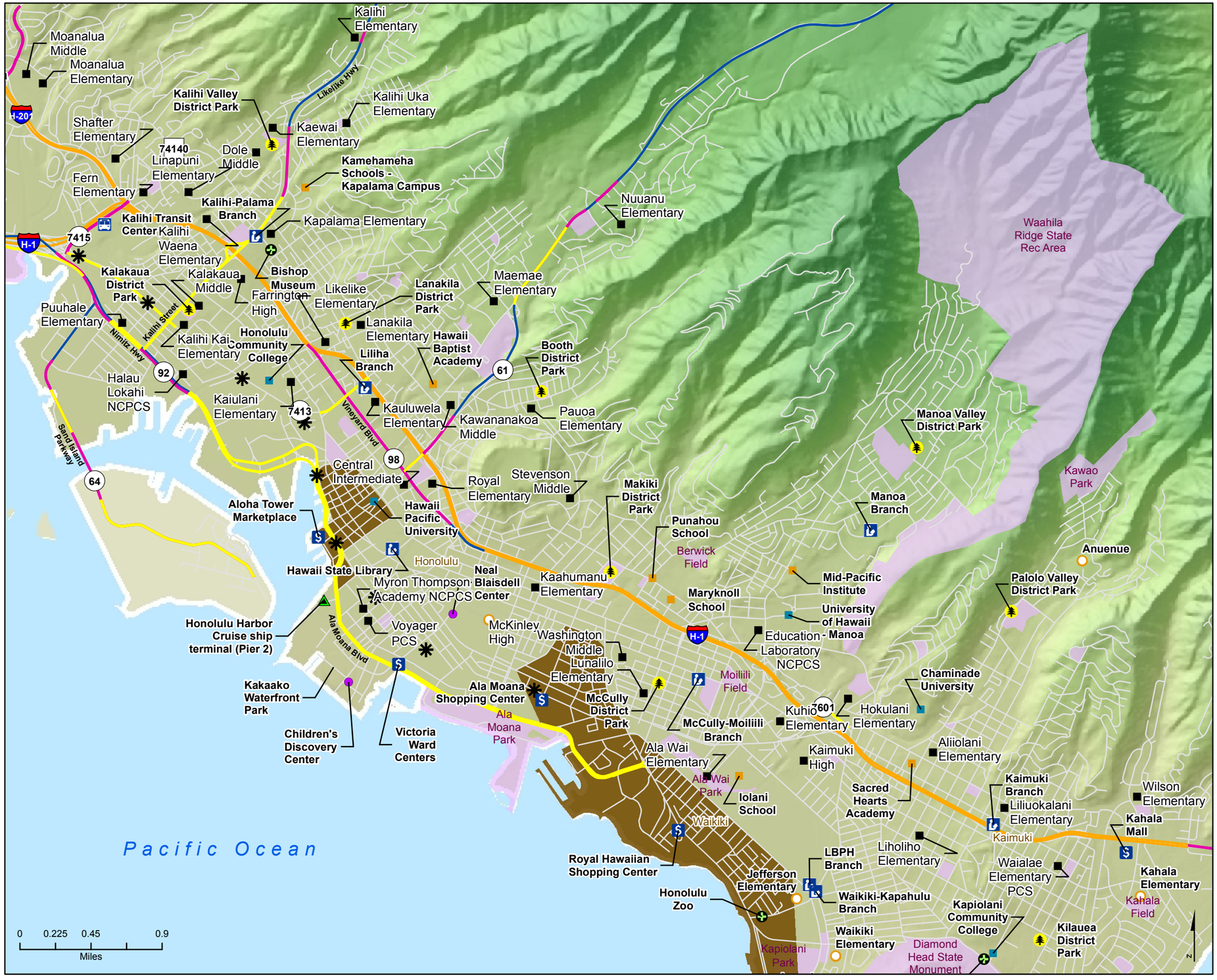
LEGEND

- Airports
- Public School within 1 Mile of Facilities
- Colleges/Universities
- Private Schools
- Ship Terminal
- Tourist Attractions
- Other Attractions
- Libraries
- Shopping Centers
- Transit Centers
- District Parks
- Parks
- Regional Parks and Community Complexes
- Rail Park and Ride
- Rail Stations
- Tsunami Shelters
- Sidewalk on Both Sides
- Sidewalk on One Side
- No Sidewalk
- Freeway
- Local Roads
- Hotel Areas
- Parks

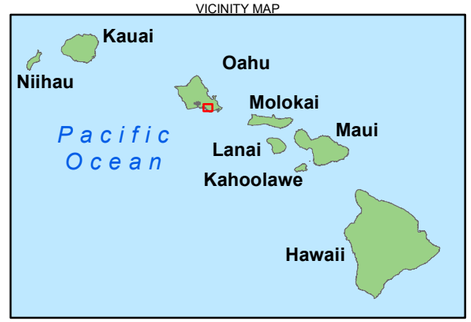
Sources:
1. Public Attractors, Roads and Sidewalks - Hawaii Department of Transportation
2. Park Polygons - State GIS Website
3. Railroad Data - PB Americas

Notes:
1. The Pedestrian Attractors were confirmed with the SPMPTAC.
2. The sidewalk data were from a shapefile. The data were manually verified and edited to match the State GIS mile point dataset. The data were then spot checked against the HDOT photo log and edited to match.

FIGURE 3-24
Existing Pedestrian System and Pedestrian Attractors
City and County of Honolulu
Hawaii Statewide Pedestrian Master Plan



VICINITY MAP



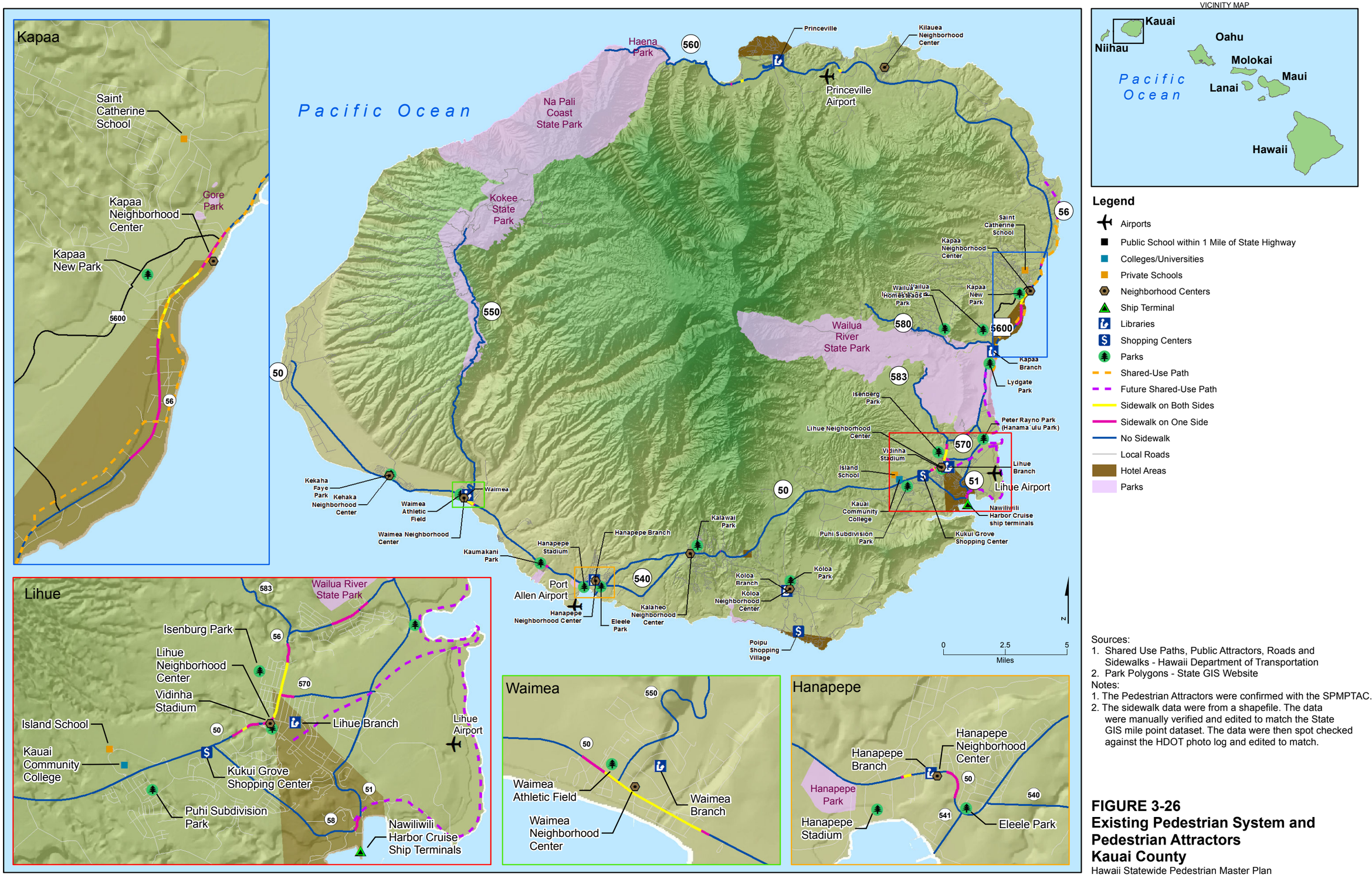
LEGEND

- Airports
- Public School within 1 Mile of State Highway
- Colleges/Universities
- Private Schools
- Ship Terminal
- Tourist Attractions
- Other Attractions
- Libraries
- Shopping Centers
- Transit Centers
- District Parks
- Rail Stations
- Tsunami Shelters
- Sidewalk on Both Sides
- Sidewalk on One Side
- No Sidewalk
- Restricted Access Facility
- Local Roads
- Hotel Areas
- Parks

Sources:
1. Public Attractors, Roads and Sidewalks - Hawaii Department of Transportation
2. Park Polygons - State GIS Website
3. Railroad Data - PB Americas

Notes:
1. The Pedestrian Attractors were confirmed with the SPMPTAC
2. The sidewalk data were from a shapefile. The data were manually verified and edited to match the State GIS mile point dataset. The data were then spot checked against the HDOT photo log and edited to match.

FIGURE 3-25
Existing Pedestrian System and Pedestrian Attractors
Urban Center
Hawaii Statewide Pedestrian Master Plan



VICINITY MAP

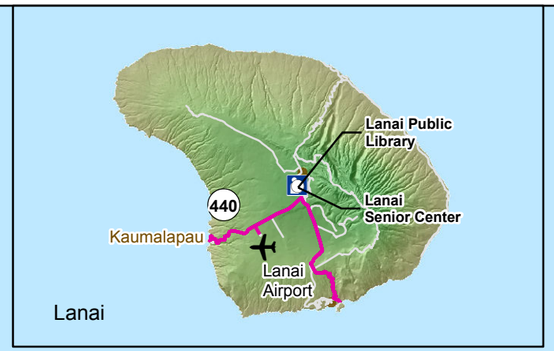
Legend

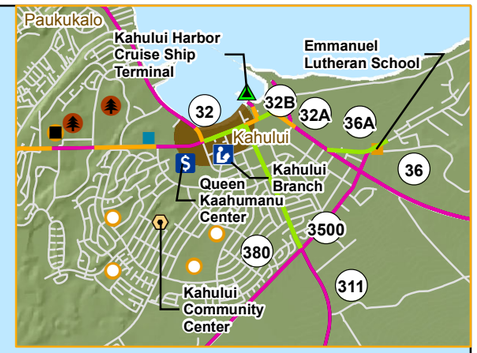
- Airports
- Public School within 1 Mile of State Highway
- Colleges/Universities
- Private Schools
- Neighborhood Centers
- Ship Terminal
- Libraries
- Shopping Centers
- Parks
- Shared-Use Path
- Future Shared-Use Path
- Sidewalk on Both Sides
- Sidewalk on One Side
- No Sidewalk
- Local Roads
- Hotel Areas
- Parks

Sources:
1. Shared Use Paths, Public Attractors, Roads and Sidewalks - Hawaii Department of Transportation
2. Park Polygons - State GIS Website

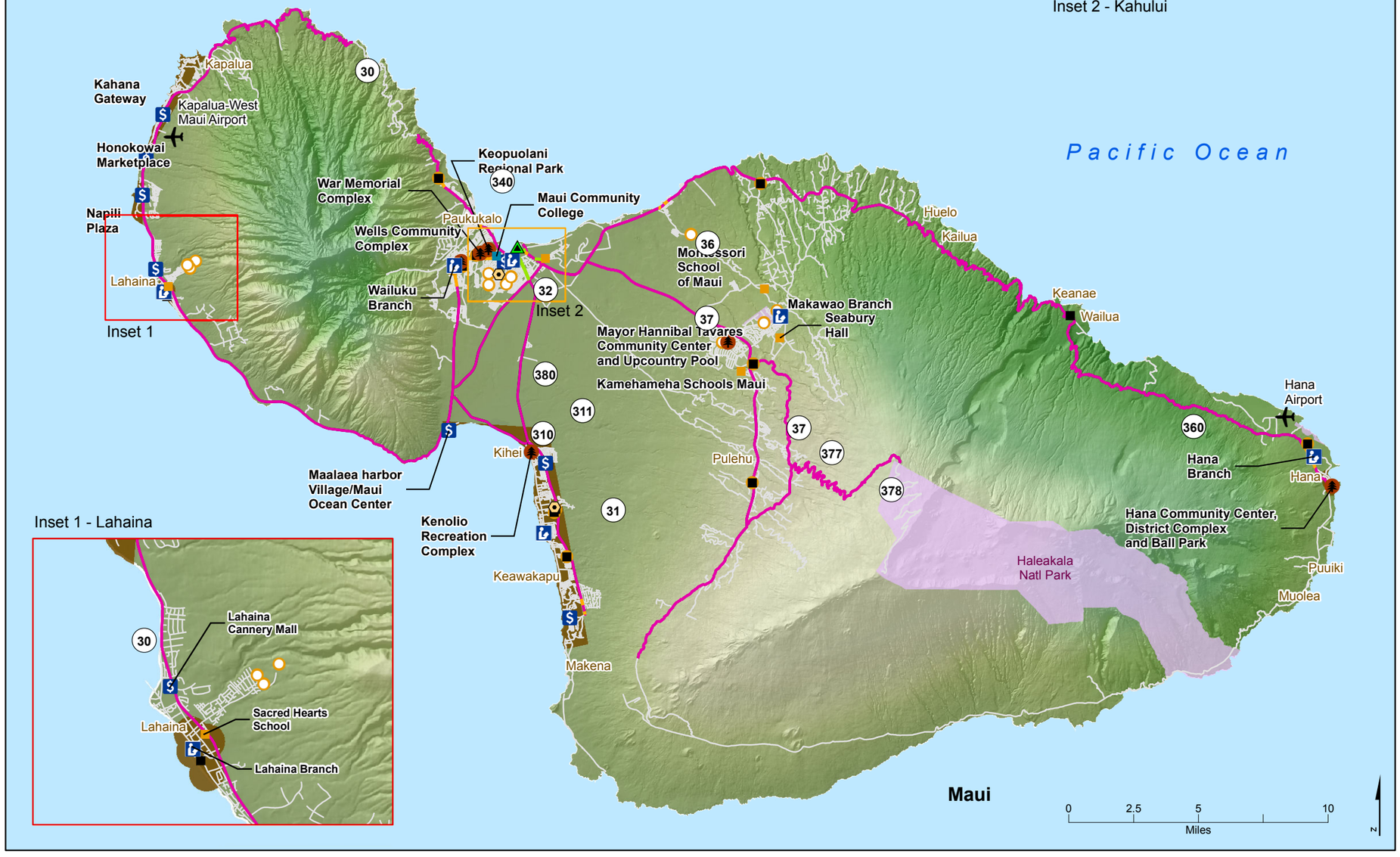
Notes:
1. The Pedestrian Attractors were confirmed with the SPMPTAC.
2. The sidewalk data were from a shapefile. The data were manually verified and edited to match the State GIS mile point dataset. The data were then spot checked against the HDOT photo log and edited to match.

FIGURE 3-26
Existing Pedestrian System and Pedestrian Attractors
Kauai County
Hawaii Statewide Pedestrian Master Plan



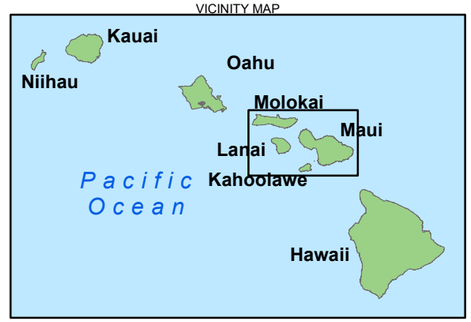


Inset 2 - Kahului



Pacific Ocean

VICINITY MAP



LEGEND

- Airports
- Public School within 1 Mile of State Highway
- Colleges/Universities
- Private Schools
- Community Centers
- Neighborhood Centers
- Senior Centers
- Ship Terminal
- Other Attractions
- Libraries
- Shopping Centers
- Regional Parks and Community Complexes
- Tsunami Shelters
- Sidewalk on Both Sides
- Sidewalk on One Side
- No Sidewalk
- Local Roads
- Hotel Areas
- Parks

Sources:
1. Public Attractors, Roads and Sidewalks - Hawaii Department of Transportation
2. Park Polygons - State GIS Website

Notes:
1. The Pedestrian Attractors were confirmed with the SPMPTAC.
2. The sidewalk data were from a shapefile. The data were manually verified and edited to match the State GIS mile point dataset. The data were then spot checked against the HDOT photo log and edited to match.

FIGURE 3-27
Existing Pedestrian System and Pedestrian Attractors
Maui County
Hawaii Statewide Pedestrian Master Plan

Functional Classification

Functional classification places roadways in categories with specific design attributes based on the amount of traffic the road carries, the speed, and potential for multimodal options. The functional classification dictates the design and standards to which roads are built. Lower speed facilities are likely to have bicycle lanes and pedestrian amenities such as sidewalks while other roadways, such as interstates, may completely restrict pedestrians.

Functional classification is important to consider for the Plan because it indicates which roadways are likely to be appropriate for attracting pedestrians. The design guidelines for different types of roadways will inform what pedestrian facilities are considered appropriate.

The following classifications are currently found throughout the state of Hawaii: Urban and rural interstates, urban other freeways/expressways, urban and rural principal arterials, urban and rural minor arterials, urban major and minor collectors, rural major and minor collectors, and local roads. Recent guidance from FHWA will consolidate the urban/rural designation to focus on the function of the roadway rather than its location in a rural or urban area.

Many of the state roadways in Hawaii are belt roadways around the islands due to topography and the nature of the islands. They serve as main streets for smaller villages throughout the islands. Arterial roadways are likely to serve as local roads for many areas around the islands.

Interstates are the highest roadway classification with the highest speeds over long stretches. Freeways and expressways tend to have limited access, with high speeds and few pedestrian and bicycle facilities. Arterials and collectors have more access to local roads and neighborhoods, have lower speeds, and are likely to have more pedestrian traffic.

The Plan is focusing on State facilities; therefore most of the roadways discussed in this memorandum will be collector or higher classifications. Typically, local roads do not fall under the jurisdiction of the state. Figures 3-28 to 3-31 show statewide functional classifications.

Posted Speed Limits

Speed limits are an important consideration for pedestrians. Higher speeds increase the chance of severe injury and the potential for fatalities in the event of a vehicle/pedestrian collision. Different pedestrian facilities are also appropriate depending on the speed of the highway. If there are multiple routes with similar lengths, pedestrians are likely to be attracted to the slower speed roadways when walking.

County of Hawaii

Posted speed limits in the County of Hawaii vary between 25 and 55 mph. In the more rural areas, the speeds tend to be higher, generally 45 to 55 mph depending on the highway, while the towns and more urban areas have lower speed limits, generally 25 and 35 mph.

City and County of Honolulu

Oahu's interstate highways have higher speeds, between 50 and 60 mph, while the more urban and winding highway sections along the coast have lower speeds, closer to 25 and 35 mph.

County of Kauai

Speeds on Kauai tend to be higher because of the more rural nature of the island, though Kokee Road (Highway 550) near Waimea Canyon has a 25 mph speed limit due to the winding and steep nature of the road. Speed limits in towns are general 25 to 35 mph.

County of Maui

Maui is similar to the other islands, with higher speeds in the rural areas, and slower speeds in towns and cities, and along stretches of the road where it is winding and steep.

Lanai and Molokai

Speeds limits on Lanai and Molokai are generally lower than the larger islands, between 20 and 45 mph throughout.

Average Daily Traffic

Average daily traffic (ADT) is an important consideration for the Plan to give an idea of which roadways carry a lot of vehicle traffic. Busy roadways have high vehicular demand; however, busy roadways are not as pleasant or safe to walk along as a pedestrian. The types of facilities recommended for roadways will differ depending on the average daily traffic. The ADT reported in the sections below is from 2006; however, ADT fluctuates throughout the year, and the annual average data cited below may understate the amount of traffic for December and January (high tourist seasons), and may overstate the off-season traffic levels on the highway.

County of Hawaii

In the County of Hawaii, the most traveled stretch of highway is in Hilo near the airport, with close to 34,000 ADT, followed closely by Kailua-Kona, which sees approximately 31,000 ADT. Rural roads around the island carry a fraction of the traffic as there are fewer people and less demand on the highways. Mamalahoa Highway (Highway 190) between Kailua-Kona and the Keahole Airport carries around 14,000 ADT.

City and County of Honolulu

As the most populous island, Oahu's highways carry the highest amount of traffic annually. Between Pearl City and Aiea on Interstate H-1, there are roughly 234,000 ADT, and the section of N Vineyard Boulevard (Highway 98) west of Honolulu carries around 182,000 ADT. Average annual traffic levels decrease further away from the populous south shore.

County of Kauai

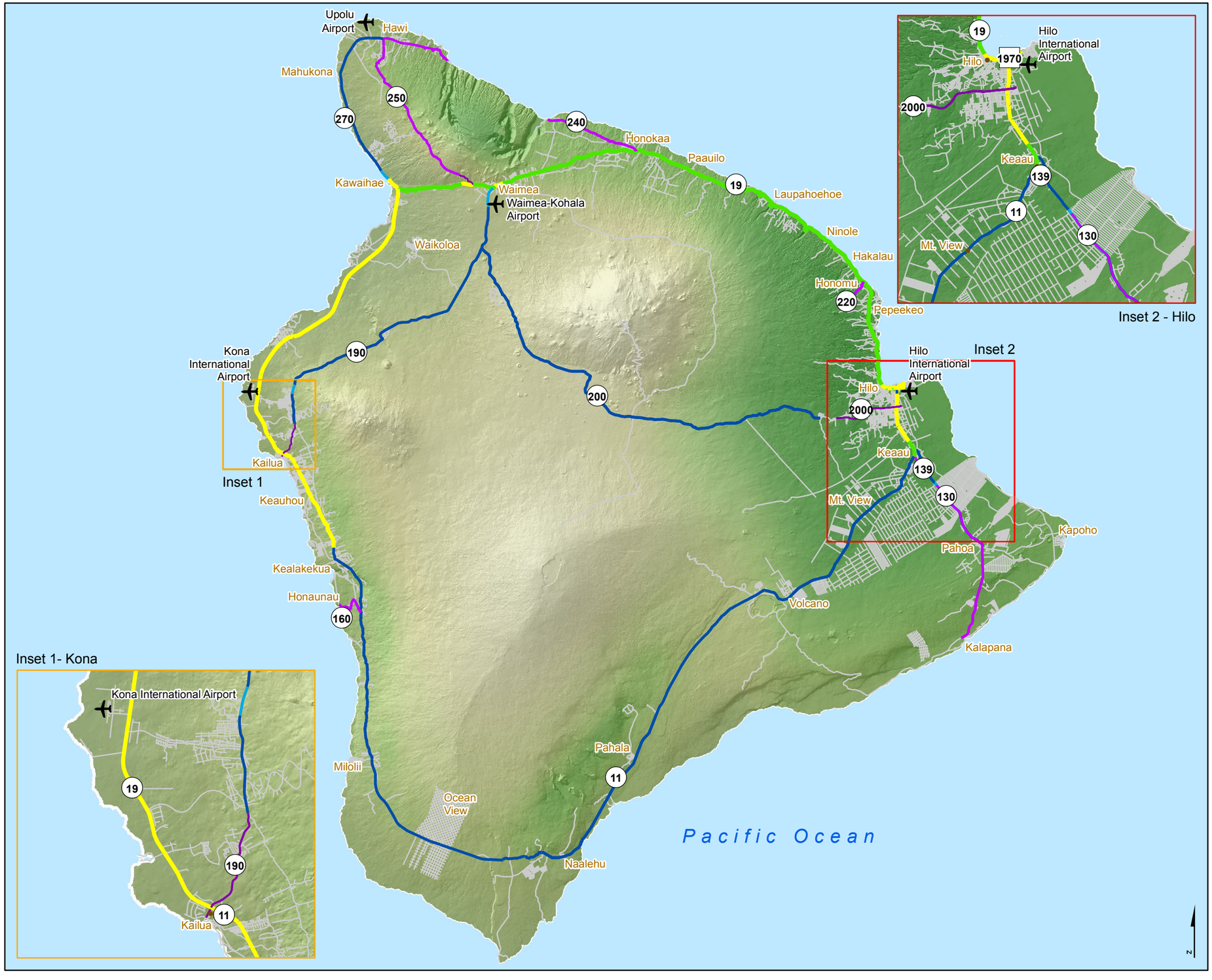
The highways on the east side of the island carry the most traffic, mainly centered near Lihue and points north along the coast. The amount of traffic ranges between approximately 12,000 and 35,000 ADT. Kekaha on the west side carries around 10,000 ADT.

County of Maui

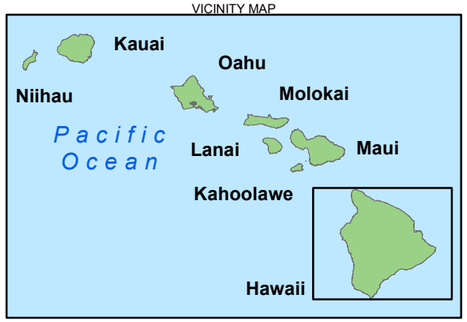
The most heavily traveled roadways in the County of Maui are in the central valley and near Lahaina on the west coast. Traffic averages between 22,000 and 38,000 ADT.

Lanai and Molokai

The highways on Lanai and Molokai are relatively less heavily traveled, ranging from 600 to 6,800 ADT.



VICINITY MAP



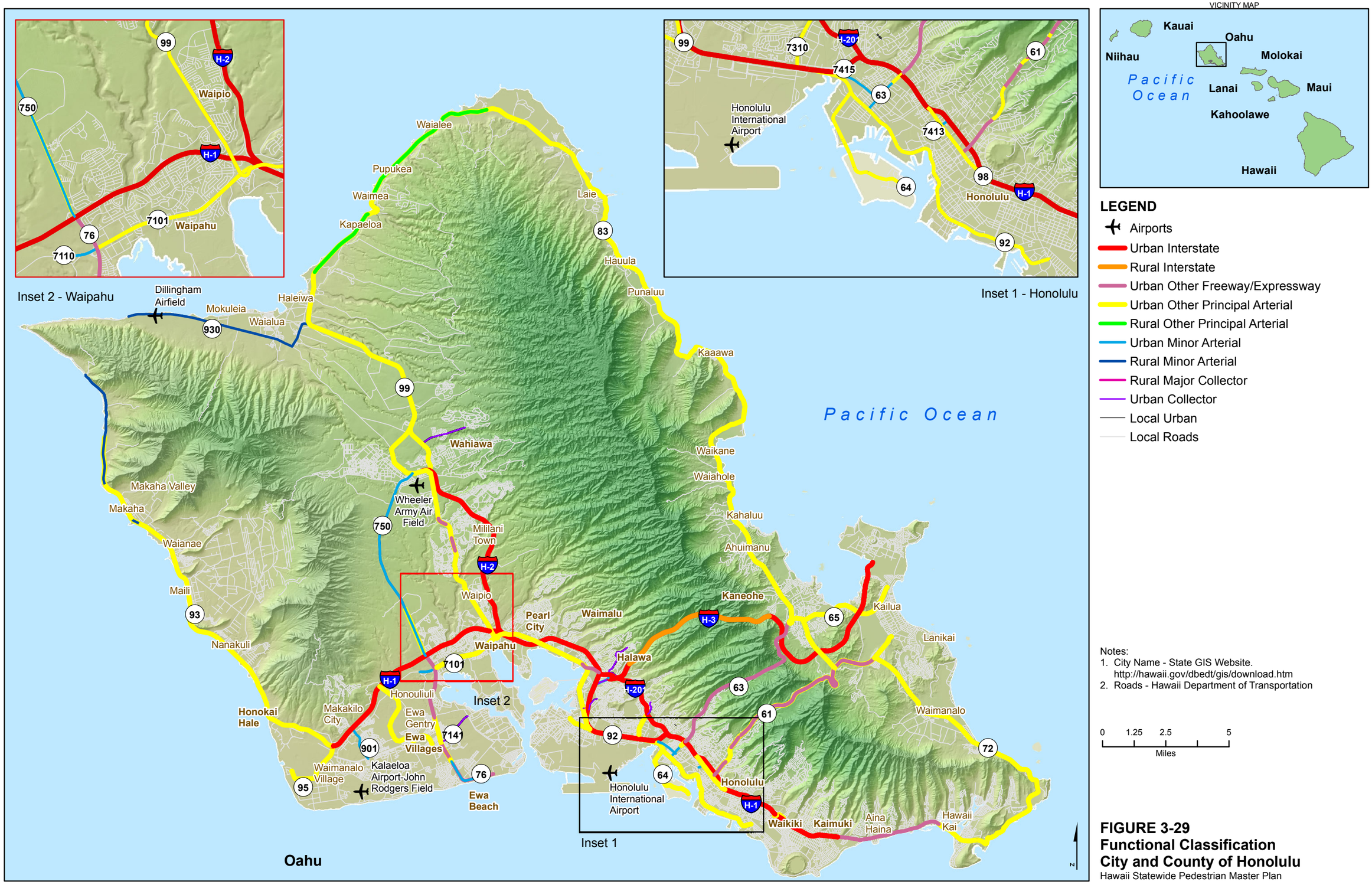
LEGEND

- Airports
- Urban Interstate
- Rural Interstate
- Urban Other Freeway/Expressway
- Urban Other Principal Arterial
- Rural Other Principal Arterial
- Urban Minor Arterial
- Rural Minor Arterial
- Rural Major Collector
- Urban Collector
- Local Urban
- Local Roads

Source:
1. Roads - Hawaii Department of Transportation
2. City Name - Hawaii County

0 5 10 20
Miles

FIGURE 3-28
Functional Classification
Hawaii County
Hawaii Statewide Pedestrian Master Plan



VICINITY MAP

LEGEND

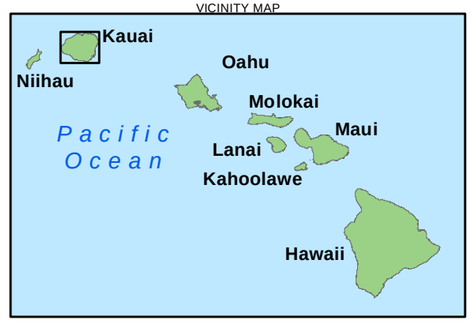
- Airports
- Urban Interstate
- Rural Interstate
- Urban Other Freeway/Expressway
- Urban Other Principal Arterial
- Rural Other Principal Arterial
- Urban Minor Arterial
- Rural Minor Arterial
- Rural Major Collector
- Urban Collector
- Local Urban
- Local Roads

Notes:
1. City Name - State GIS Website. http://hawaii.gov/dbedt/gis/download.htm
2. Roads - Hawaii Department of Transportation

0 1.25 2.5 5
Miles

FIGURE 3-29
Functional Classification
City and County of Honolulu
Hawaii Statewide Pedestrian Master Plan

VICINITY MAP



LEGEND

- Airports
- Urban Interstate
- Rural Interstate
- Urban Other Freeway/Expressway
- Urban Other Principal Arterial
- Rural Other Principal Arterial
- Urban Minor Arterial
- Rural Minor Arterial
- Rural Major Collector
- Urban Collector
- Local Urban
- Local Roads

Notes:
1. City Name - State GIS Website. http://hawaii.gov/dbedt/gis/download.htm
2. Roads - Hawaii Department of Transportation

0 1.25 2.5 5
Miles

FIGURE 3-30
Functional Classification
Kauai County
Hawaii Statewide Pedestrian Master Plan

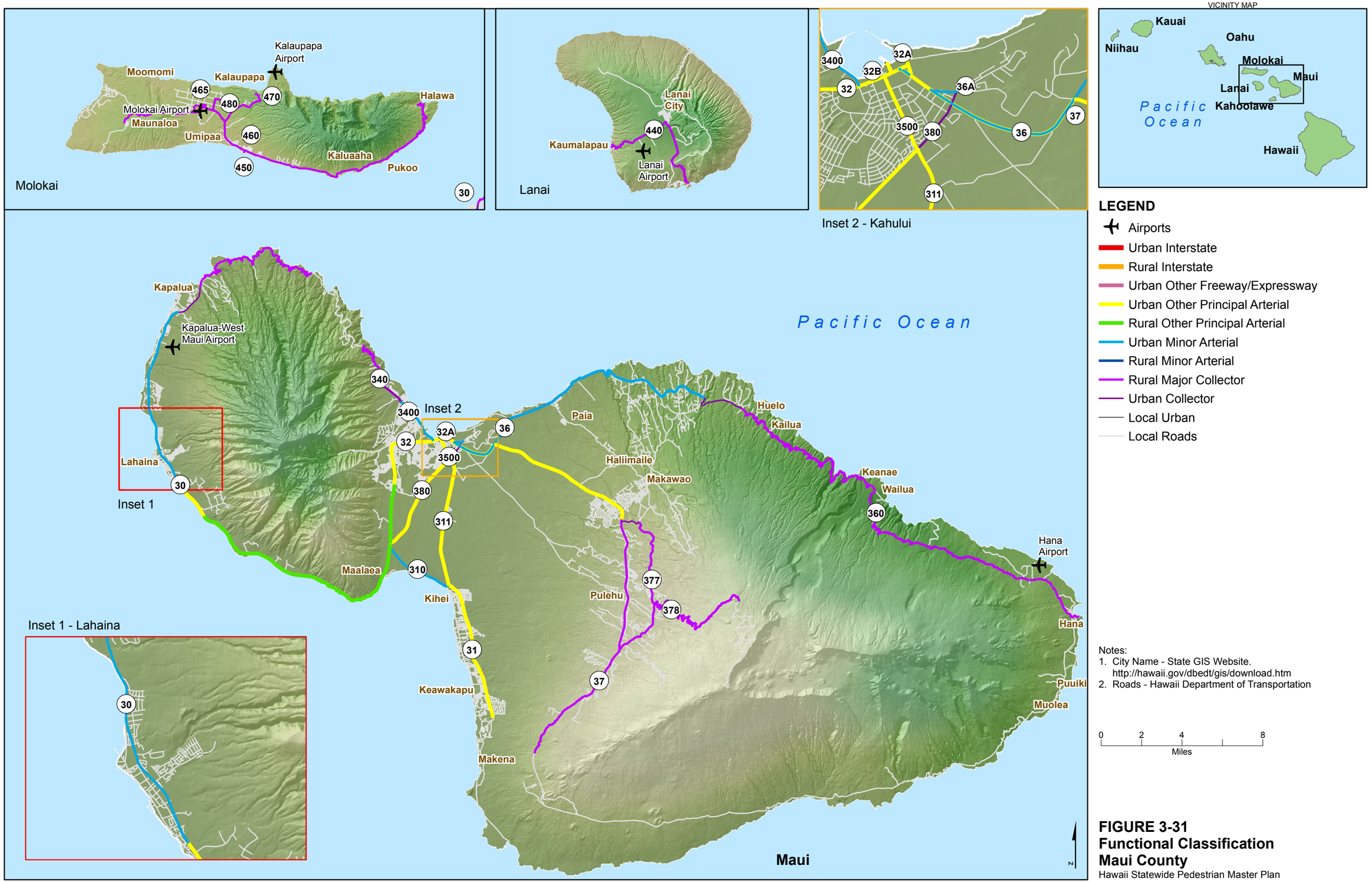


FIGURE 3-31
Functional Classification
Maui County
Hawaii Statewide Pedestrian Master Plan

Census Overview

Census data provides a comprehensive view of population characteristics broken down by block group; however, the data are limited to update every 10 years. The most recent census data available are from 2000. Census data provides valuable information on age, income, household access to vehicles, and general trends. These indicators show populations that are unable to drive or have limited access to vehicles and could potentially be walking to destinations or reliant on transit. For the sections below, the individual islands will be compared to the statewide average, providing a point of reference to the specific areas and high or low percentages found at the block group level.

Elderly Populations

Elderly populations are an important consideration for the Plan because of the increasingly limited ability of elderly persons to drive. As populations age, transit accessibility and safe walking routes become more necessary. Elderly people are also more likely to be severely injured or killed in a crash between a pedestrian and a vehicle.

Elderly populations are characterized as individuals over 65 years old. Census data were divided into block groups with high percentages, between 28 and 58 percent, of the population over 65. Much of the state ranges between 5 and 19 percent elderly population, and the statewide average is 13.3 percent. Figure 4-1 shows the entire state and the percentage of elderly residents in each block group.

County of Hawaii

The County of Hawaii has some pockets of concentrated elderly populations, mostly near Kailua-Kona and north of Hilo. The rest of the county is closer to 12-19 percent elderly, which is similar to the statewide average of 13.3.

City and County of Honolulu

Honolulu and the surrounding areas north and east have relatively high percentages of elderly populations, ranging from 19 to 58 percent of the population over 65, much higher than the statewide average. The rest of the county in the more rural areas and along the north and west coast have much lower percentages of elderly populations, between 0 and 19 percent of the population, closer to the statewide average.

County of Kauai

Kauai ranges from 5 to 28 percent elderly, with the higher percentage located in the central south block group near Waimea.

County of Maui

The central valley in Maui has a couple of block groups with high percentages of elderly, between 19 and 58 percent, and much higher than the statewide average, while the rest of the county has lower percentages of elderly, between 5 and 19 percent.

Lanai and Molokai

Lanai has a very low percentage of elderly, between 5 and 12 percent, while Molokai has between 12 and 58 percent elderly, depending on the block group.

Young Populations

Young populations (populations under 17 years old as defined by the US Census) are also important to consider because of their inability to drive. Young populations rely on transit service and walking to make their trips, and with the Safe Routes To School Program, are encouraged to walk or bicycle to school. The statewide average for the population under 17 is 22.9 percent. Figure 4-2 shows young populations throughout the state.

County of Hawaii

The County of Hawaii has a relatively high percentage of the population under 17, ranging from 20 to 35 percent. Most of the towns and cities in the county have a young population between 27 and 35 percent (which is higher than the statewide average), while the more rural areas have between 20 and 27 percent of the population under 17.

City and County of Honolulu

The central and western part of Oahu has a high percentage of the population under 17, ranging from 20 to 60 percent under 17 years old. Honolulu and the eastern part of the county have a much lower percent of the population under 17, ranging from 0 to 27 percent of the population.

County of Kauai

Kauai has between 20 and 35 percent of the population under 17, similar to the statewide average.

County of Maui

Maui's central valley has a lower percentage of the population under 17 than the statewide average, between 0 and 10 percent. The eastern and western coasts have higher young populations, varying between 10 and 35 percent.

Lanai and Molokai

Lanai has a relatively high percentage of the population under 17, between 27 and 35 percent. Molokai's west coast has between 35-60 percent of the population under 17. The eastern side of the island is lower, between 27 and 35 percent under 17, though this is still higher than the statewide average.

Poverty

Incidence of poverty is an important consideration for the Plan due to the inability to buy and maintain a vehicle. Households and individuals that fall below the poverty level may be limited in driving due to the cost, and may walk or ride transit more often to access services and go to work. Figure 4-3 shows the percentage of the population living below the poverty level throughout the state. The poverty threshold is set nation-wide through the U.S. Census and is based on the number of individuals in a household and the yearly annual income of the household, and is adjusted annually to reflect inflation. For an individual under 65 years old, the threshold was $8,959. For a family of four people with two children under 18, the threshold was $17,463[2]. The statewide average for persons living below the poverty line is 10.7 percent.

[2] More information on the poverty thresholds for 2000 can be found here: http://www.census.gov/prod/2001pubs/p60-214.pdf

County of Hawaii

The west coast of Hawaii has a relatively low percentage of people living below the poverty line, ranging from 0 to 24 percent of the population. The towns of Hawi, Kailua, and Papa are in block groups with higher percentages of the population living below the poverty line, between 14 and 24 percent, higher than the statewide average. The east coast and southern block groups in the County have higher percentages of the population living below the poverty level, between 14 and 42 percent of the population. Pahoa and Hilo are located in block groups with higher levels living under the poverty level at 24-42 percent.

City and County of Honolulu

Most of the City and County of Honolulu is above the poverty level, in the 0-6 percent of the population range, which is below the statewide average of 10.7 percent. There are pockets in the county, mainly on the west coast and areas near Honolulu where there are much higher levels of poverty, between 42 and 100 percent of the population. These areas are of particular concern because of their possible dependence on walking and distance from core services.

County of Kauai

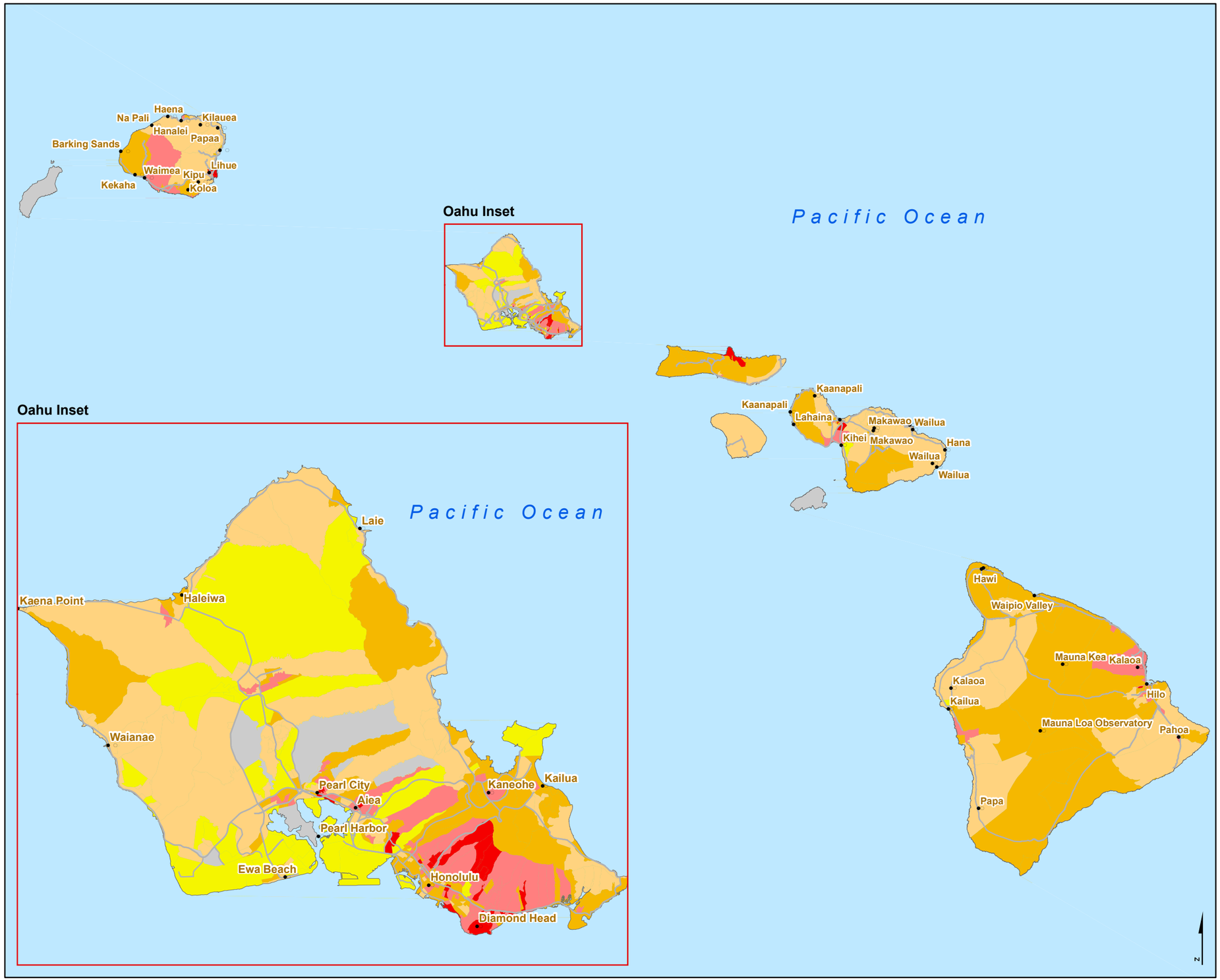
Kauai ranges between 0 and 42 percent of the population below the poverty level. There is one block group in the middle of the island that has the highest percentage of the population living below the poverty level, between 24 and 42 percent of the population, which is much higher than the statewide average.

County of Maui

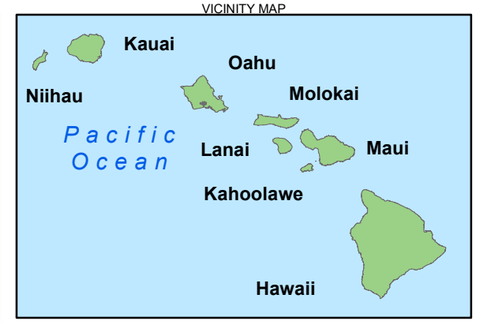
Maui has a low percentage of people earning below the poverty level, the range on the island is between 0 and 24 percent. No census block groups have above 24 percent of the population living below the poverty level.

Lanai and Molokai

Lanai has between 6 and 14 percent of the population below the poverty level, similar to the statewide average. Parts of Molokai, notably the west and east coasts, and a block group in the central north coast have populations between 24 and 42 percent below the poverty level.



VICINITY MAP



LEGEND

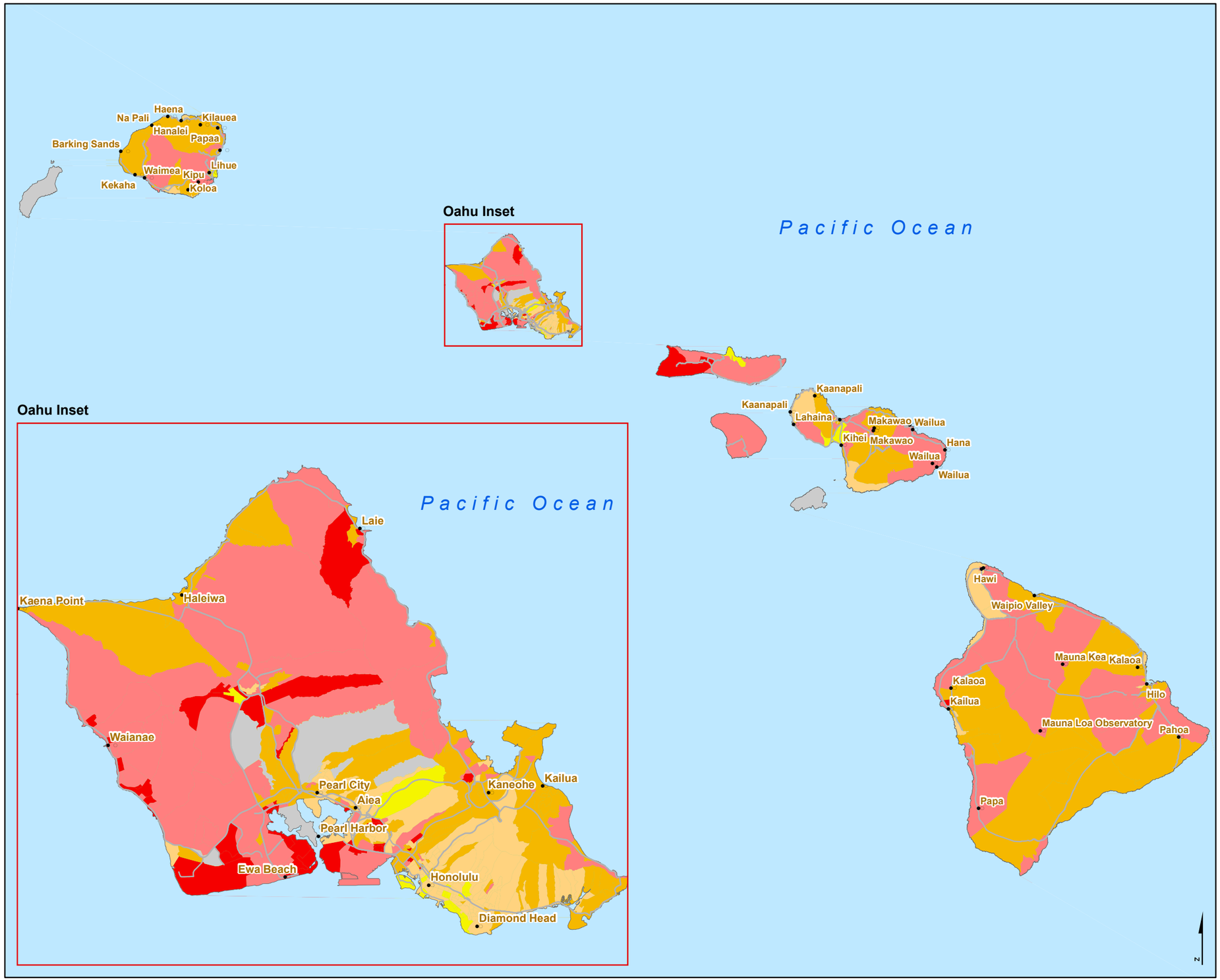
Percent of Population by Block Group Over 65 Years Of Age

- 0 - 5%
- 5% - 12%
- 12% - 19%
- 19% - 28%
- 28% - 58%
- No Data

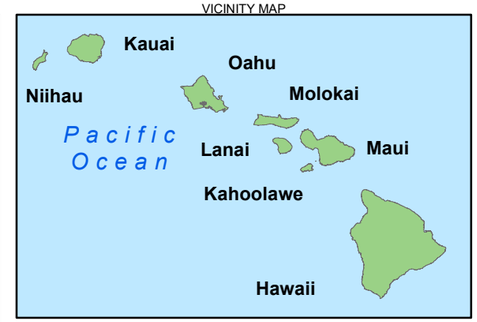
Source:
US Census (2000) demographic data.

0 10 20 40
Miles

FIGURE 4-1
Percentage of Population Over 65 Years of Age
Hawaii Statewide Pedestrian Master Plan



VICINITY MAP



LEGEND

Percent of Population by Block Group Under 17 Years of Age

- 0 - 10%
- 10% - 20%
- 20% - 27%
- 27% - 35%
- 35% - 60%
- No Data

Source:
US Census (2000) demographic data.

0 10 20 40
Miles

FIGURE 4-2
Percentage of Population Under 17 Years of Age
Hawaii Statewide Pedestrian Master Plan

Access to Vehicles

Census data provides information on household access to vehicles. Households with no access to vehicles are likely to be dependent upon walking, bicycling, and transit to access services and employment. The statewide average of households with no access to vehicles is 11 percent. Figure 4-4 shows census block group percentages of population with no access to a vehicle throughout the state.

County of Hawaii

The County of Hawaii has a relatively low percentage of households with no access to vehicles, ranging from 0 to 15 percent of the population, similar to the statewide average.

City and County of Honolulu

There are some areas, mainly in Honolulu and in the center of the County that have high percentages without access to vehicles. There are block groups near and around the City where 30-100 percent of the population does not have access to a vehicle. The rest of the County has a relatively low percentage of households with no access to a vehicle.

County of Kauai

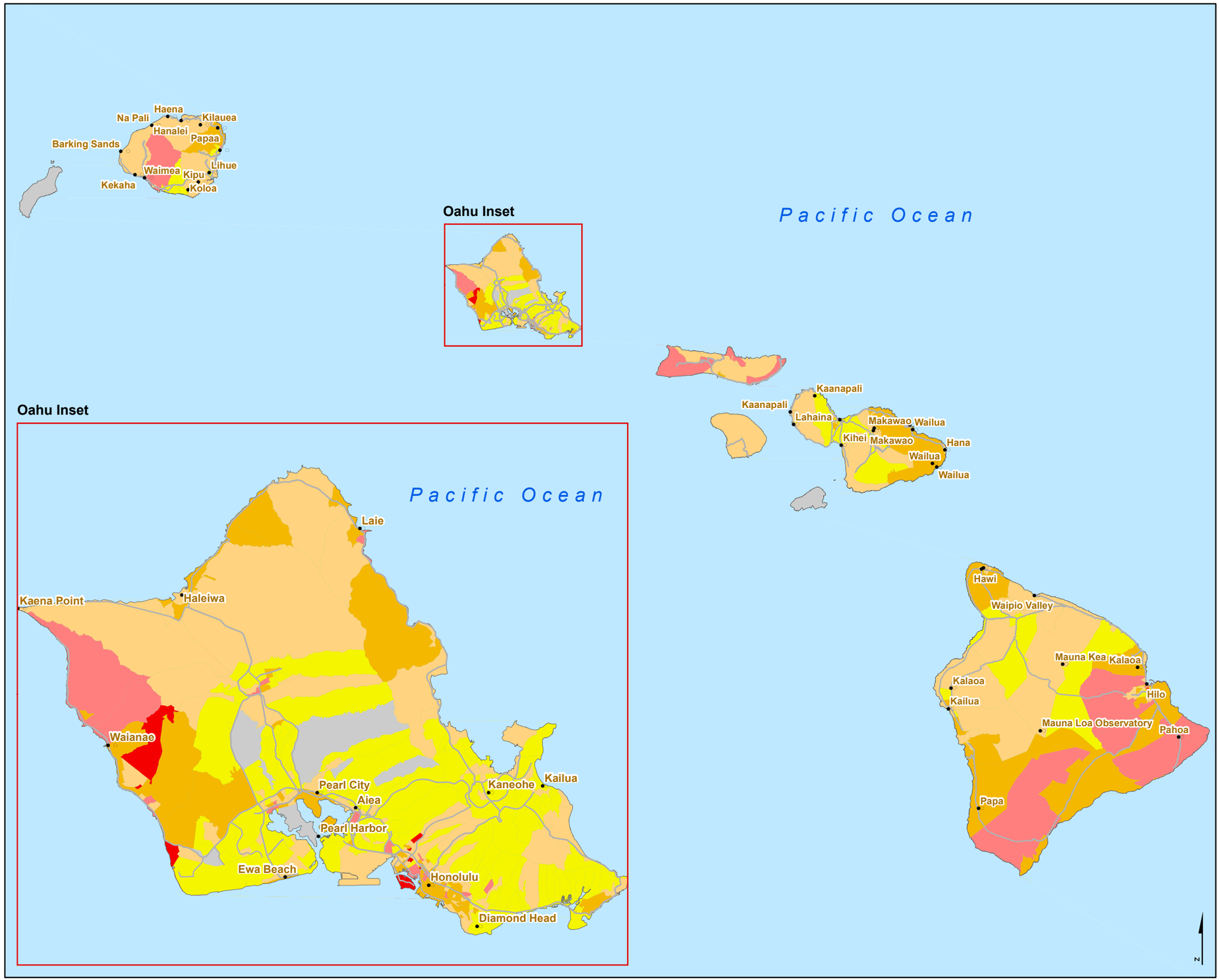
Between 0 and 15 percent of Kauai's population does not have access to a vehicle. There is one block group near Lihue where 30-55 percent of the population does not have access.

County of Maui

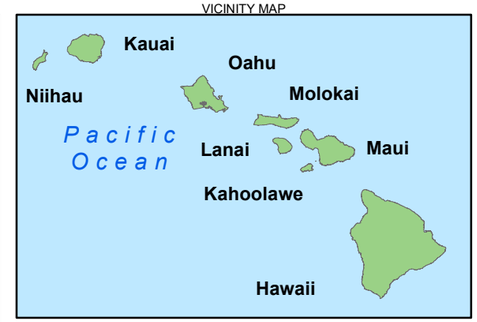
Maui is very similar to Kauai; most of the population has access to a vehicle, but there is one block group in the central valley urban area where 55-100 percent of the population has no access to a vehicle, a percentage much higher than the statewide average.

Lanai and Molokai

Lanai and Molokai are generally uniform; the two islands have between 6 and 15 percent of the population with no access to a vehicle, which is similar to the statewide average.



VICINITY MAP



LEGEND

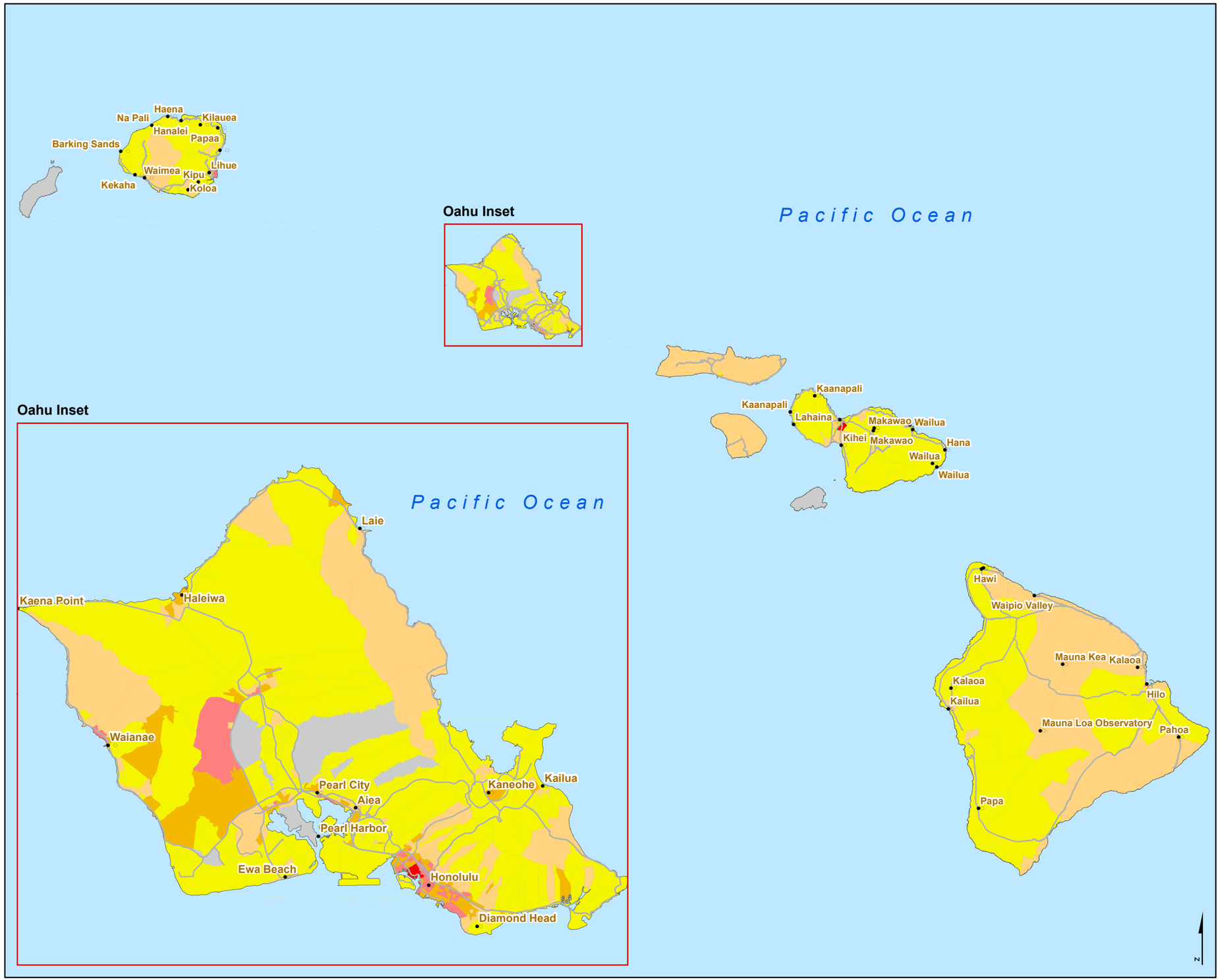
Percent of Population by Block Group Below Poverty Level

- 0 - 6%
- 6% - 14%
- 14% - 24%
- 24% - 42%
- 42% - 100%
- No Data

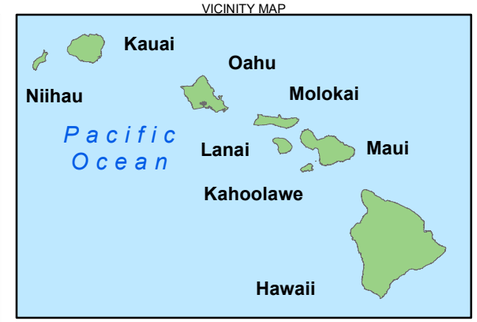
Source:
US Census (2000) demographic data.

0 10 20 40
Miles

FIGURE 4-3
Percentage of Population Below Poverty Level
Hawaii Statewide Pedestrian Master Plan



VICINITY MAP



LEGEND

Percent of Population by Block Group With No Access to Vehicles

- 0 - 6%
- 6% - 15%
- 15% - 30%
- 30% - 55%
- 55% - 100%
- No Data

Source:
US Census (2000) demographic data.

0 10 20 40
Miles

FIGURE 4-4
Households with No Access to Vehicles
Hawaii Statewide Pedestrian Master Plan

Pedestrian Safety on State Facilities

The available data from the HDOT for pedestrian crashes on state facilities are for the years 2004 to 2007 and part of 2008[3]. Additionally, there are more recent studies that cite crash and safety data for highways such as the Bicycling and Walking in the United States: 2010 Benchmarking Report and the Hawaii Strategic Highway Safety Plan, which are discussed in general below, but not included in the specific crash data analyses as the raw data were not available.

According to the 2010 Benchmarking Report prepared by the Alliance for Biking and Walking, the State of Hawaii is ranked 8th for biking and walking levels overall out of the 50 states, 6th for walking to work (approximately 4.4% of commuters walk to work), and estimates that 7 percent of all trips are on foot. However, the state ranks 30th for pedestrian safety. Approximately 21 percent of all traffic fatalities are pedestrians, of which 6 percent are under the age of 16 and 18 percent are over age 60.

Another source of crash data, the Hawaii Strategic Highway Safety Plan 2007-2012, shows that between 2001 and 2005, the State of Hawaii had the 5th highest pedestrian fatality rate nationwide. Among the elderly, the State of Hawaii leads the nation with a rate of 40.2 deaths per 100,000 people 65 years and older, nearly 3 times higher than that for the rest of the United States. A total of 150 pedestrians were killed in the State of Hawaii over the 2001-2005 period, accounting for 22% of all traffic-related fatalities. Another 540 are involved in major traffic crashes each year. Senior pedestrians have the highest rates of fatal injuries, but the highest rates for non-fatal pedestrian crashes were computed for 5-19 year age range, with especially high rates among 10 to 14 year-olds.

The following data on the types and characteristics of pedestrian crashes on state highways will help inform the development of areas of concern. The areas of concern will then be analyzed to determine potential solutions to address the issues found in these areas, particularly the high crash locations and specific characteristics of pedestrian crashes.

The State of Hawaii Department of Transportation, has provided this traffic crash information under the protection of 23 USC 402(k) and 409. This information may not be used in any Federal or State court proceeding in any action for damages arising from any occurrence at a location mentioned or addressed in the information provided.

Crash Locations

Pedestrian crash locations are generally located within the more populous areas statewide, though a number of crashes occurred in more rural areas along the coasts. Where crashes occurred within 0.1 mile of each other, they were grouped together for mapping purposes. These are reported crashes between 2004 and part of 2008.

Pedestrian crash data do not record driver or pedestrian intoxication levels. However, the Fatality Analysis Reporting System (FARS) collects data on crashes and one of the variables includes driver intoxication. According to Hawaii statewide data, between 2004 and 2009, 31 - 39 percent of drivers involved in a fatal crash were intoxicated.

County of Hawaii

Crashes in the County of Hawaii are mainly located in four areas around the island: the west coast near Kailua-Kona, the east coast near Hilo, the north coast near Hawi, and the Waimea-Kohala Airport. Crashes in urban areas

[3] 2008 data is for January through March.

are more likely to be near pedestrian attractors. In the north, the crashes are near Kamehameha Park and the Bond Memorial Branch public library. Near the crash locations in Kona, the Hulihee Palace State Monument, the Hale Halawai Park, the Kailua-Kona Wharf and multiple hotels. Hilo is densely developed with a variety of pedestrian attractors near most of the crash locations. There are a couple of isolated crashes near Ocean View and Naalehu in the southern part of the island, which are near parks, smaller rural towns, or other pedestrian attractors. Figure 5-1 shows locations of crashes and fatalities in the County of Hawaii.

City and County of Honolulu

On Oahu, the Central Business District in Honolulu has the most incidences of crashes, which is likely due to the dense urban environment and prevalence of pedestrian activity within the city. There are a number of crashes between the Ala Moana Shopping Center and Ala Moana Park including one fatality. Another high crash corridor is on North Vineyard Boulevard (Highway 98) northwest of Downtown Honolulu. There are a number of crashes with no fatalities on this stretch of roadway, and five public schools within one mile of the roadway. There is also a cluster of crashes along Nimitz Highway (Highway 92) where there are a number of hotels. Crashes in the City of Honolulu are shown in Figure 5-2.

Outside of the Central Business District there is a high incidence of crashes in the built out southern coast including the Waikiki, Pearl City, and Ewa areas. Many of these areas have multiple crashes in close proximity (within 0.1 miles of each other). In Ewa Beach, there are a number of crashes along Fort Weaver Road (Highway 76), where there are five public schools nearby, along with the Ewa Beach Transit Center, and a public library.

There is another large cluster of crashes on the west coast in the urbanized areas between Makaha and Nanakuli; many of the crashes in this location include pedestrian fatalities. There are a number of schools near the highway, along with the Waianae public library and Waianae Transit Center. South of Waianae, there are sidewalks on one side of the highway, which could cause people to cross the highway more often than they might otherwise.

The Central valley also has a cluster of crashes near Wahiawa. There are a number of schools, one park, and a public library near the crash locations. The land use is mainly residential and community commercial, likely drawing a large number of pedestrians.

The east coast also has a number of crashes with no fatalities along Kalanianaole Highway (Highway 72) southeast of Waimanalo. This section has sidewalks on one side, with relatively narrow shoulders, ranging from no shoulders to 5 feet. Census data also indicate that there is a high percentage (between 27 and 35 percent) of the population under 17 years old.

Other crashes in Oahu include multiple fatalities in Kahuku, and crashes with no fatalities along the north and east coast highways. Crashes on Oahu are shown in Figure 5-3.

County of Kauai

Kauai has relatively few crashes, with a few in Waimea on the southwest coast, a fatality and multiple crashes in Kalaheo in the south. On the east coast crashes generally cluster in the towns. Compared to Oahu, Kauai has much fewer crashes along the coastal highways, though there are still some incidences of pedestrian crashes.

Waimea crashes are clustered in the center of town, near multiple pedestrian attractors such as the Waimea Athletic Field, Waimea Library, and the Waimea Neighborhood Center. However, there are no fatalities near Waimea between 2004 and part of 2008.

The crashes in Kalaheo are near the Kalaheo Neighborhood Center and the Kalawai Park, which are both pedestrian attractors. Further to the east in Lawai, there are a number of non-fatal crashes near the hotel area in town.

Crashes near Wailua and points north on the east coast are near a hotel area, north of the Wailua River State Park. These are the only crashes that occurred in urban areas. There are sections in this area where sidewalks are not provided or there is a sidewalk on one side. This same area also has limited shoulders in addition to limited sidewalks. Crashes in the County of Kauai are shown in Figure 5-4.

County of Maui

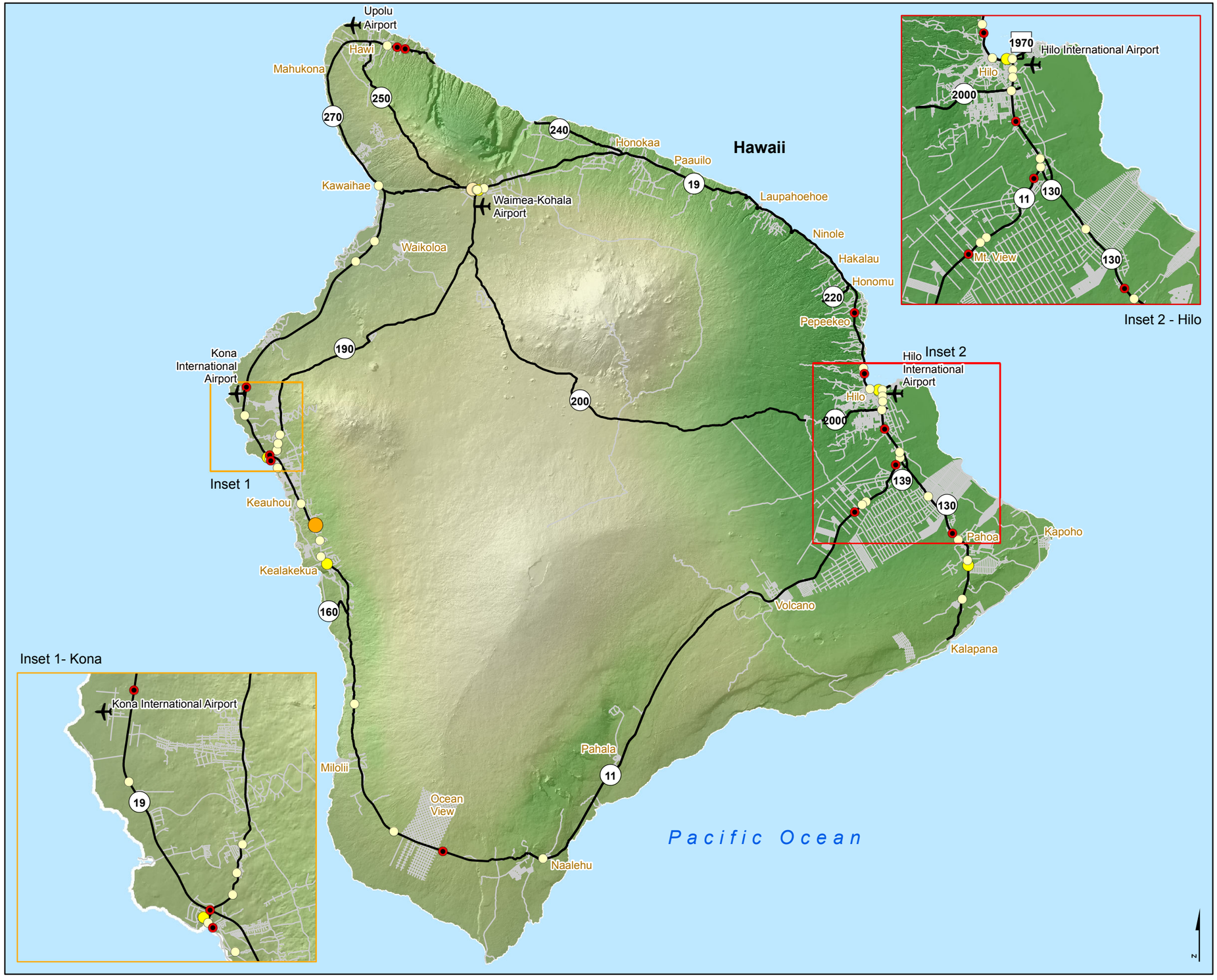
Crashes in Maui are grouped near towns and cities, with the most fatalities concentrated around Kahului and Lahaina. These areas are also the more urban areas, which have quite a few pedestrian attractors nearby including schools, shopping centers, and public libraries. There are also a number of hotels in the vicinity of both clusters of crashes. Many of the crashes outside of Kahului occurred on roads with no sidewalks and in areas with a relatively high percentage (27-35 percent) of the population under 17.

There were a few fatalities in the central eastern part of the island, near Makawao and south of Pulehu, in areas with no sidewalks, narrow shoulders, or no shoulders. In the more rural areas, speeds tend to be higher, and land uses do not suggest to drivers that there may be pedestrians in or crossing the roadway, potentially leading to more crashes.

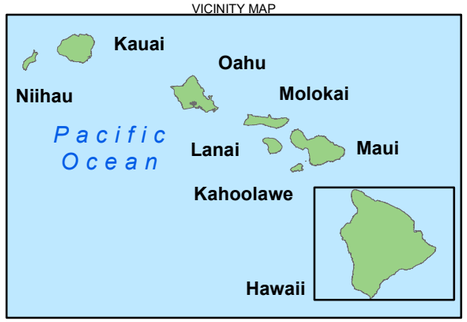
Most other crashes outside of the central valley and west coast are crashes with no fatalities. Crashes in the County of Maui are shown in Figure 5-5.

Lanai and Molokai

Lanai has no crashes involving pedestrians between 2004 and part of 2008. Molokai has one crash, on the east coast near Kaluaaha on Kamehameha V Highway. There is a public school nearby, the roadway does not have sidewalks, and there are narrow shoulders. The insets in Figure 5-5 show crashes on Lanai and Molokai.



VICINITY MAP



LEGEND

- Airports
- 1 Accident / 1 Fatality
- 1 Accident / No Fatalities
- 2 Accidents / No Fatalities
- 3 Accidents / No Fatalities
- 4 Accidents / No Fatalities
- State Highways
- Local Roads

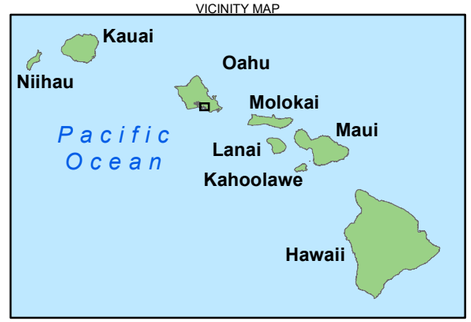
Source:
1. City Name - Hawaii County
2. Accident Data - Hawaii Department of Transportation
   The State of Hawaii, Department of Transportation, has provided this traffic accident information under the protection of 23 USC 402(k) and 409. This information may not be used in any Federal or State court proceeding in any action for damages arising from any occurance at a location mentioned or addressed in the information provided.

Notes:
1. 2008 Accident data is incomplete; based on available data.
2. Accident data were consolidated into one point when multiple points occured within 0.1 miles of each other.
3. Accident data points were placed in reference to mile point data taken from the State GIS Website.

0 5 10 20
Miles

FIGURE 5-1
Pedestrian Accident Locations - 2004-2008 - Hawaii County
Hawaii Statewide Pedestrian Master Plan

VICINITY MAP



LEGEND

- Airports
- 1 Accidents / 1 Fatality
- 2 Accidents / 1 Fatality
- 3 Accidents / 1 Fatality
- 1 Accident / No Fatalities
- 2 Accidents / No Fatalities
- 3 Accidents / No Fatalities
- 4 Accidents / No Fatalities
- 5 Accidents / No Fatalities
- 6 Accidents / No Fatalities
- 8 Accidents / No Fatalities
- 10 Accidents / No Fatalities
- State Highways
- Local Roads

Source:
1. City Name - State GIS Website. http://hawaii.gov/dbedt/gis/download.htm
2. Accident Data - Hawaii Department of Transportation
   The State of Hawaii, Department of Transportation, has provided this traffic accident information under the protection of 23 USC 402(k) and 409. This information may not be used in any Federal or State court proceeding in any action for damages arising from any occurance at a location mentioned or addressed in the information provided.

Notes:
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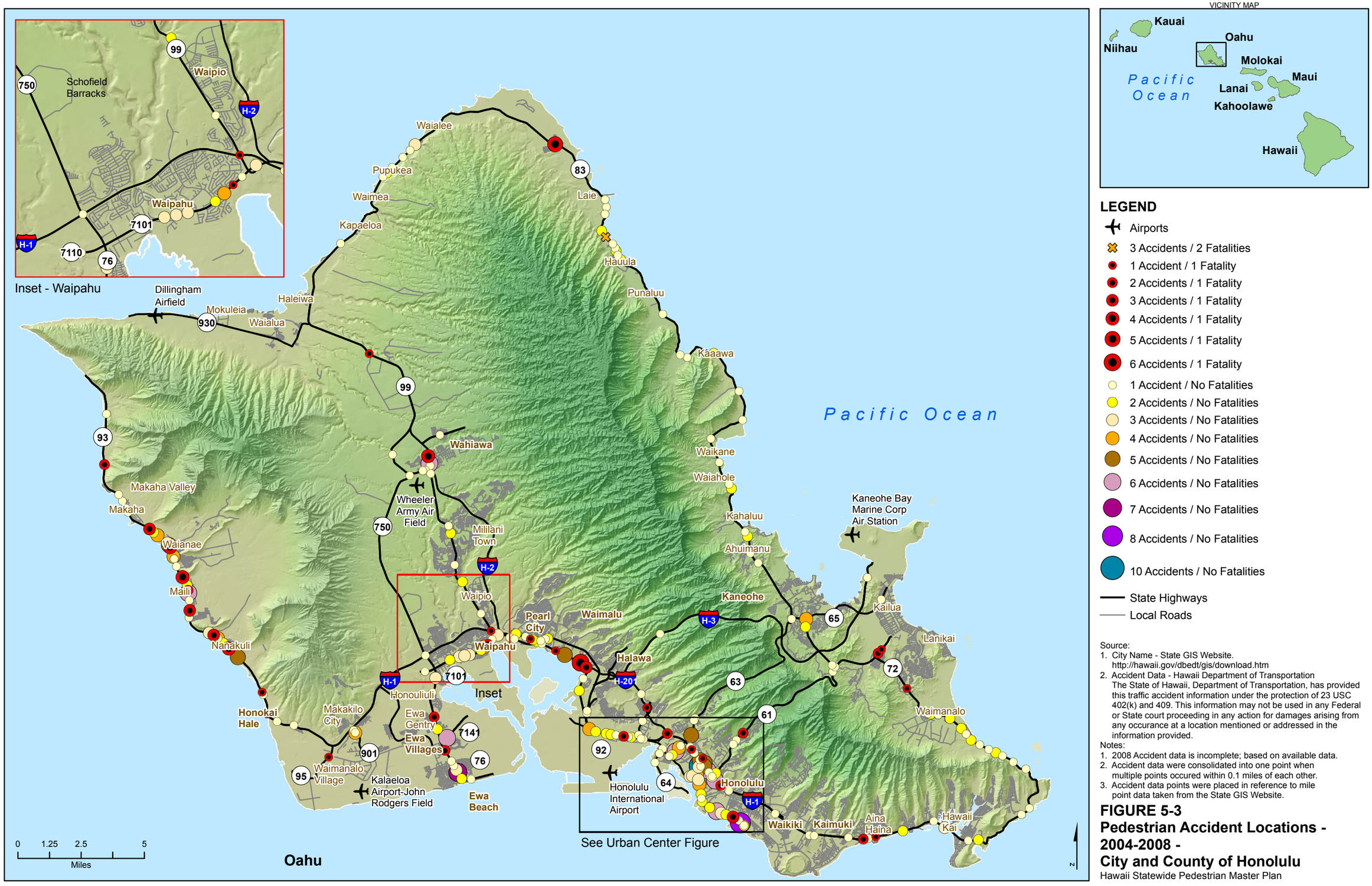
3. Accident data points were placed in reference to mile point data taken from the State GIS Website.

FIGURE 5-2
Pedestrian Accident Locations - 2004-2008 - Urban Center
Hawaii Statewide Pedestrian Master Plan



VICINITY MAP

LEGEND

- Airports
- 3 Accidents / 2 Fatalities
- 1 Accident / 1 Fatality
- 2 Accidents / 1 Fatality
- 3 Accidents / 1 Fatality
- 4 Accidents / 1 Fatality
- 5 Accidents / 1 Fatality
- 6 Accidents / 1 Fatality
- 1 Accident / No Fatalities
- 2 Accidents / No Fatalities
- 3 Accidents / No Fatalities
- 4 Accidents / No Fatalities
- 5 Accidents / No Fatalities
- 6 Accidents / No Fatalities
- 7 Accidents / No Fatalities
- 8 Accidents / No Fatalities
- 10 Accidents / No Fatalities
- State Highways
- Local Roads

Source:
1. City Name - State GIS Website. http://hawaii.gov/dbedt/gis/download.htm
2. Accident Data - Hawaii Department of Transportation
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Notes:
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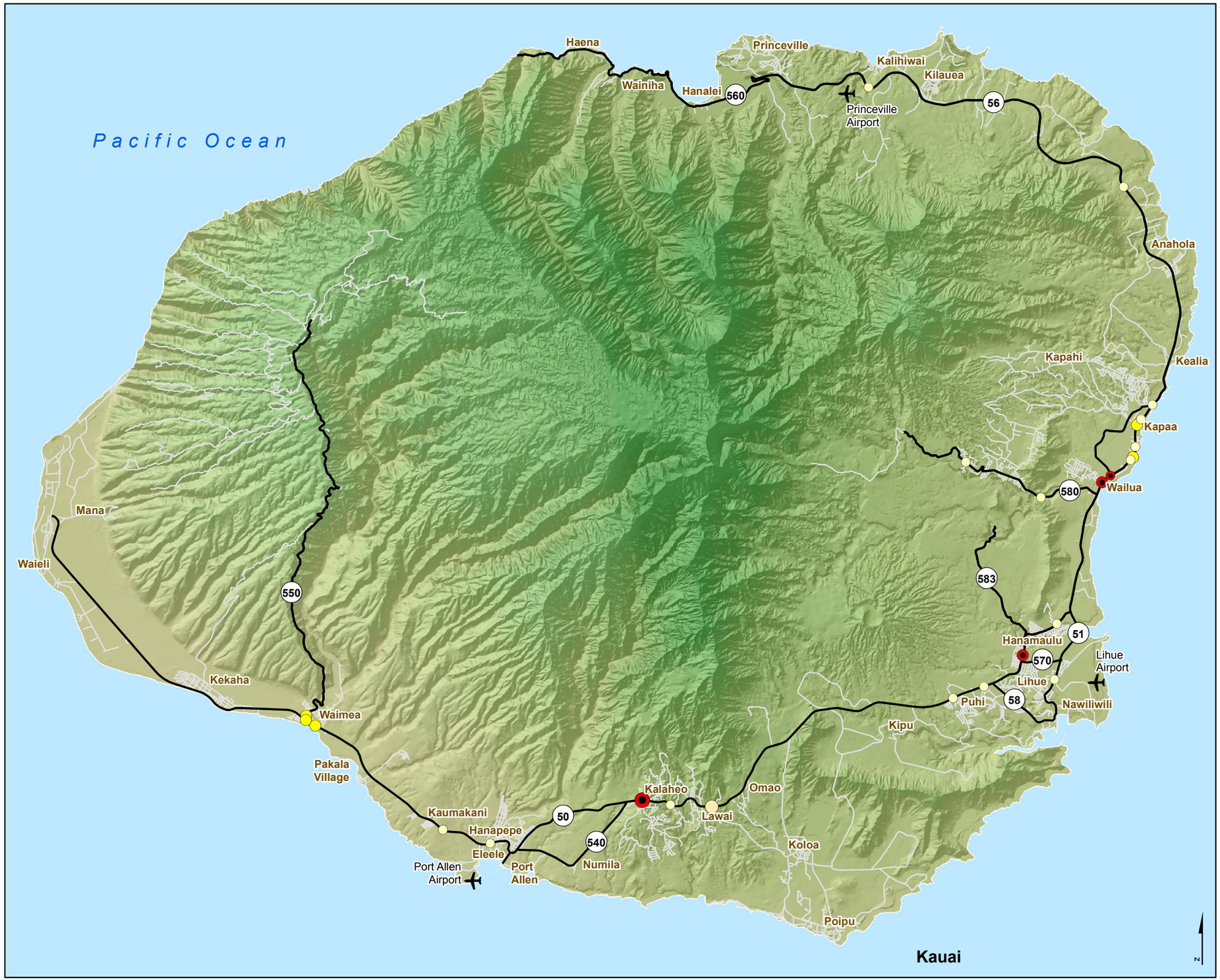
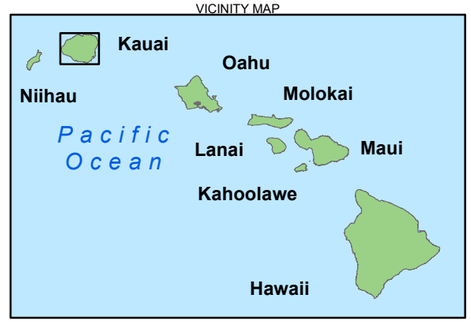
2. Accident data were consolidated into one point when multiple points occured within 0.1 miles of each other.
3. Accident data points were placed in reference to mile point data taken from the State GIS Website.

FIGURE 5-3
Pedestrian Accident Locations - 2004-2008 -
City and County of Honolulu
Hawaii Statewide Pedestrian Master Plan



VICINITY MAP



LEGEND

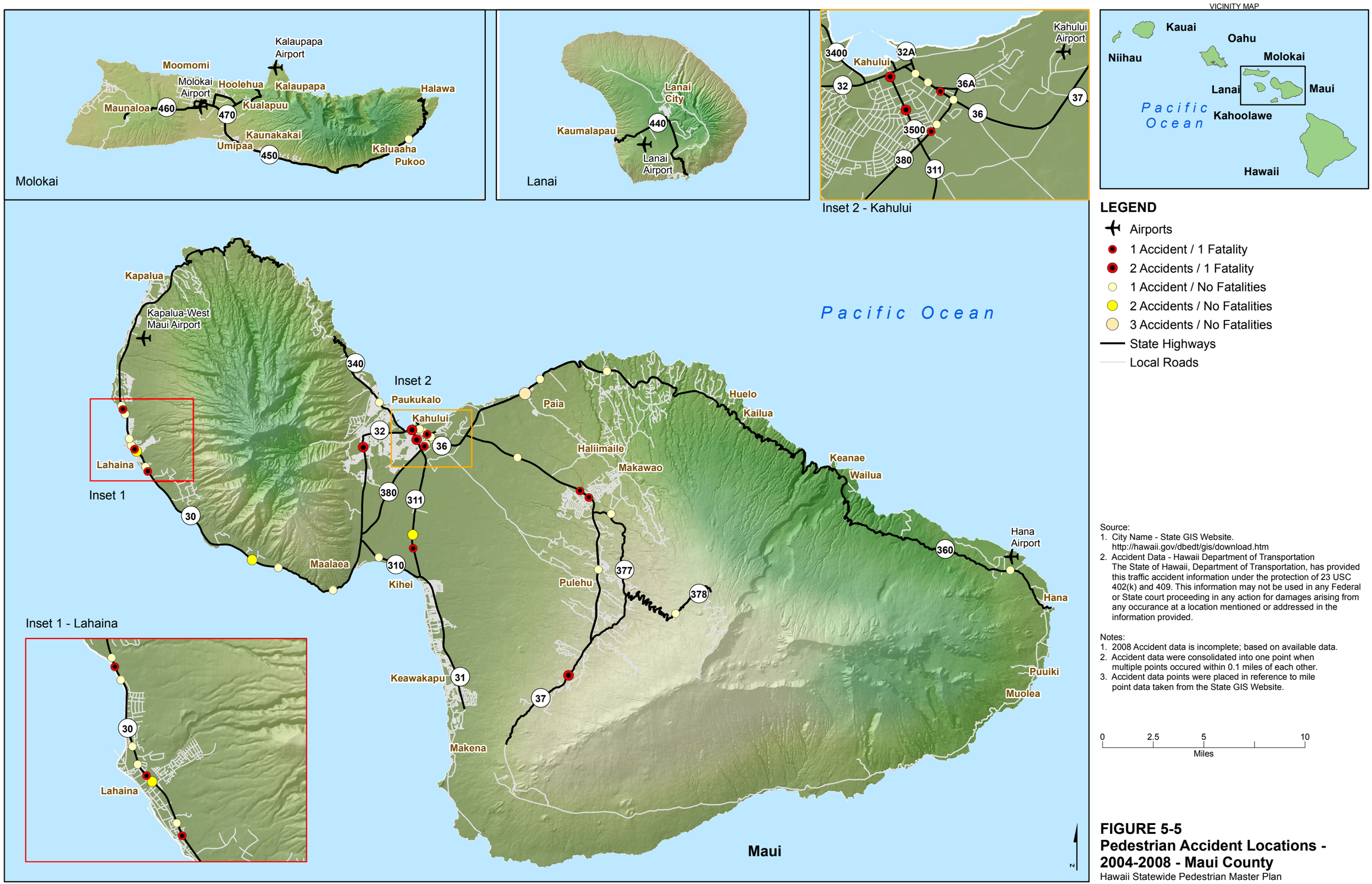
- Airports
- 1 Accident / 1 Fatality
- 2 Accidents / 1 Fatality
- 4 Accidents / 1 Fatality
- 1 Accident / No Fatalities
- 2 Accidents / No Fatalities
- 3 Accidents / No Fatalities
- State Highways
- Local Roads

Source:
1. City Name - State GIS Website. http://hawaii.gov/dbedt/gis/download.htm
2. Accident Data - Hawaii Department of Transportation
   The State of Hawaii, Department of Transportation, has provided this traffic accident information under the protection of 23 USC 402(k) and 409. This information may not be used in any Federal or State court proceeding in any action for damages arising from any occurance at a location mentioned or addressed in the information provided.

Notes:
1. 2008 Accident data is incomplete; based on available data.
2. Accident data were consolidated into one point when multiple points occured within 0.1 miles of each other.
3. Accident data points were placed in reference to mile point data taken from the State GIS Website.

0 1 2 4
Miles

FIGURE 5-4
Pedestrian Accident Locations - 2004-2008 - Kauai County
Hawaii Statewide Pedestrian Master Plan



Source:
1. City Name - State GIS Website. http://hawaii.gov/dbedt/gis/download.htm
2. Accident Data - Hawaii Department of Transportation
   The State of Hawaii, Department of Transportation, has provided this traffic accident information under the protection of 23 USC 402(k) and 409. This information may not be used in any Federal or State court proceeding in any action for damages arising from any occurance at a location mentioned or addressed in the information provided.

Notes:
1. 2008 Accident data is incomplete; based on available data.
2. Accident data were consolidated into one point when multiple points occured within 0.1 miles of each other.
3. Accident data points were placed in reference to mile point data taken from the State GIS Website.

FIGURE 5-5
Pedestrian Accident Locations - 2004-2008 - Maui County
Hawaii Statewide Pedestrian Master Plan

Crash Severity

Crash severity depends on multiple aspects including the speed of the crash, the age and abilities of the pedestrian involved, the type of crash (sideswipe versus head-on), how quickly the crash was reported, and emergency services response time.

Pedestrian crashes on state highways are categorized into levels of severity. These include no injury, possible injury, non-incapacitating injury, incapacitating injury, and fatality. Figure 5-6 shows the range of pedestrian injuries in crashes that occurred statewide on state facilities from 2004 to part of 2008. All crash data are from the HDOT.

Crash data, however, is not always complete or perfectly accurate. Often injuries from minor crashes appear hours or days after the actual crash (whiplash, etc.), and depending on the follow-up, these injuries may not be reported. Very minor crashes with no injuries and no property damage often go unreported. It is important to realize that these crash injury data are an approximation of actual crashes, and not an exact count.

Statewide, fatalities make up roughly 10 percent of all crashes, while incapacitating injuries are 13 percent and non-incapacitating injuries are approximately half of the reported crashes. Between 2004 and part of 2008, there were a total of 673 pedestrian related crashes on state facilities statewide[4].

The individual county data are similar to the statewide distribution of types of crashes, with fatal crashes ranging between 9 and 17 percent, incapacitating injuries accounting for 12-15 percent, and non-incapacitating injuries accounting for 47-57 percent in the four counties.

Hawaii and Maui counties have the highest percent of pedestrian fatalities in relation to total number of crashes, while Oahu has the lowest percentage. These differences could be attributable to the sheer volume of crashes found in the Oahu, and the more rural nature of Hawaii and Maui counties that lends itself to higher vehicle speeds.

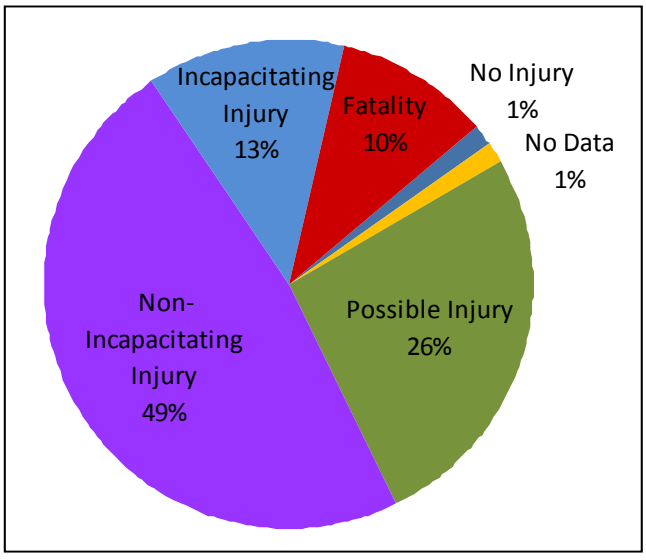


Figure 5-6. Severity of Pedestrian Accidents on State Highways, Statewide, 2004-2008, HDOT

[4] 2008 data is for January through March.

Pedestrian Age

There are many factors that contribute to the incidence of a pedestrian crash. One aspect is the age of the pedestrian. Children under the age of 17 are less likely to obey or be aware of rules, may not exercise due caution before entering a roadway, and may dart into traffic unexpectedly. Additionally, they are smaller and harder for motorists to see when they are present in the roadway. Statewide, pedestrians under the age of 17 are most likely to be involved in crashes on state highways, followed by 45-54 year olds and 17-24 year olds. These data are generally consistent across each county, except for Maui, where 45-54 year olds are more likely to be involved in a pedestrian crash.

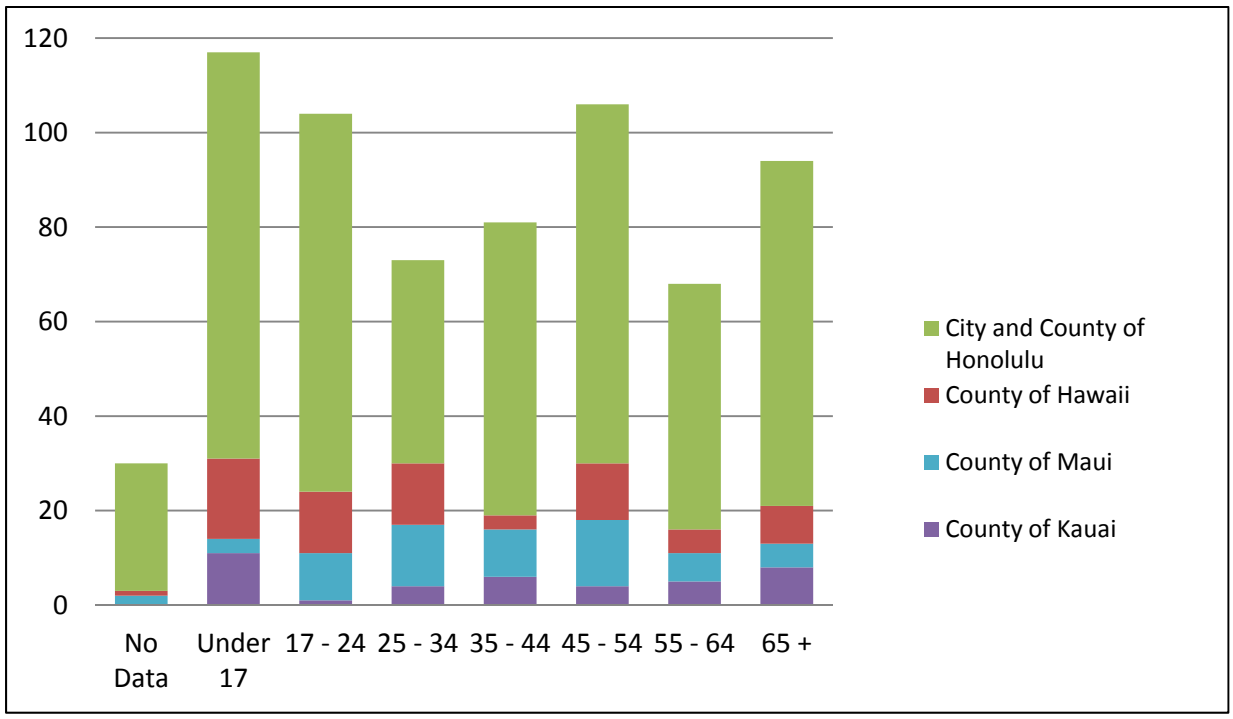


Figure 5-7. Age of Pedestrians Involved in Accidents on State Highways, Statewide, 2004-2008, HDOT

County of Hawaii

The County of Hawaii is similar to the statewide average, with the most crashes involving pedestrians under 17. However, the number of crashes for 35-44 year olds is much lower compared to the statewide data.

City and County of Honolulu

The City and County of Honolulu has the most pedestrian crashes, and the countywide data are very similar to the statewide crashes involving pedestrians.

County of Kauai

The majority of pedestrian crashes in Kauai involved pedestrians under the age of 17, with the second highest number of crashes involving pedestrians over 65 years old, and the fewest crashes involving those 17-24 years old, which is different than the statewide average.

County of Maui

The age of pedestrians involved in crashes for the County of Maui is very different than the statewide information. On Maui, most crashes involved pedestrians between 45-54 years old, with pedestrians in the 25-34 age group being the second highest. Pedestrians under 17 and over 65 are the lowest, which is opposite of the statewide data.

For crashes involving fatalities, the data are much different. Pedestrians over 65 years old are much more likely to be killed in a pedestrian crash. This is partially due to the fact that older pedestrians tend to be more frail than younger pedestrians, and they are less likely to be able to move quickly to avoid serious or fatal injuries. Studies also cite the slower gait and reduced balance and eyesight specific to older pedestrians that also contribute to more severe crashes and potential fatalities.

Statewide, elderly pedestrians are much more likely to be involved in a fatal crash on a state highway with a total of 23 fatalities between 2004 and 2008, 15 fatalities occurred in the City and County of Honolulu. Figure 5-8 shows the statewide age of pedestrians involved in fatal crashes by county. County trends are similar to the statewide; however, in the County of Hawaii, 17-24 year olds and 65+ had equal number of fatalities (3 fatalities for each age group) between 2004 and 2008, and in the County of Maui, the most fatalities (3 total) involved the 35-44 age group.

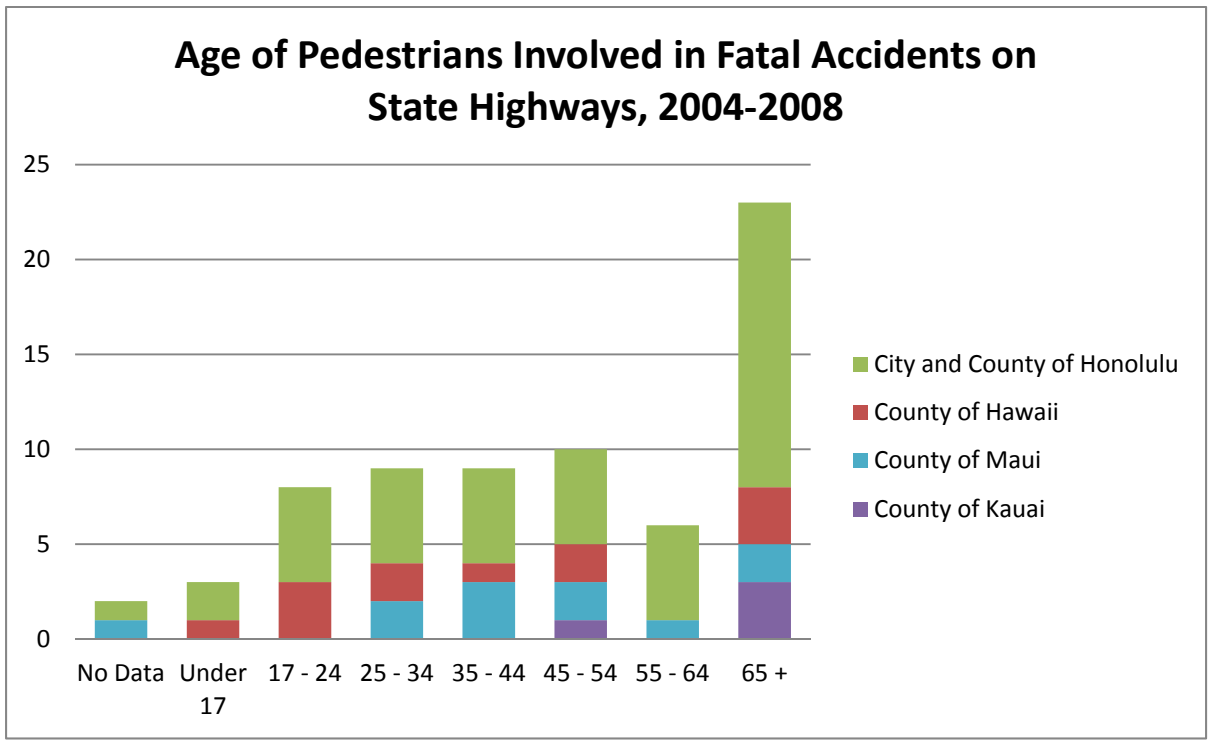


Figure 5-8. Age of Pedestrians Involved in Fatal Accidents on State Highways, Statewide, 2004-2008, HDOT

Time of Day

The time of day of a crash can be important to determine crash causes. During the day, pedestrians are more likely to walking along or crossing statewide highways. The overall crash data support the fact that more pedestrians are present and crashes are more likely during daytime hours.

Statewide, most of the crashes on state highways occur during the day – roughly 58 percent of crashes between 2004 and part of 2008. This is very similar to the county data; crashes during the day vary between 44 and 77 percent, and all counties except Maui show the majority of pedestrian crashes happen during the day.

More fatal crashes occurred at night, when pedestrians on or near roadways are harder for motorists to see. Motorist and pedestrian crashes are also more likely to involve alcohol at night. Motorists are less likely to anticipate pedestrians on or near the roadway at night, and are less likely to be aware and ready to avoid crashes or slow down. Emergency response and reporting times after a crash are also likely to be longer at night, as fewer people are likely to witness a pedestrian crash.

Statewide, 68 percent of fatal pedestrian crashes between 2004 and part of 2008 occurred at night. For the counties, fatal crashes varied from 25 to 75 percent during the evening, with all counties but Kauai reporting between 68 and 75 percent of fatalities occurring during the night. Kauai is the outlier for these data; 75 percent of fatal crashes in that county occurred during the day.

Weather

Weather conditions at the time of a crash can also play a role in the likelihood and severity of a crash. Weather conditions can affect visibility with fog, rain, low light, or vog conditions, and conversely, clear weather can present sun glare issues for motorists, or contribute to motorist distractions as drivers appreciate the view and take their focus off the roadway. Statewide, most pedestrian crashes between 2004 and part of 2008 (74 percent) occurred when the weather was clear. 10 percent of crashes occurred when it was cloudy, 10 percent of crashes cited unknown weather conditions, and 6 percent of crashes occurred when it was raining.

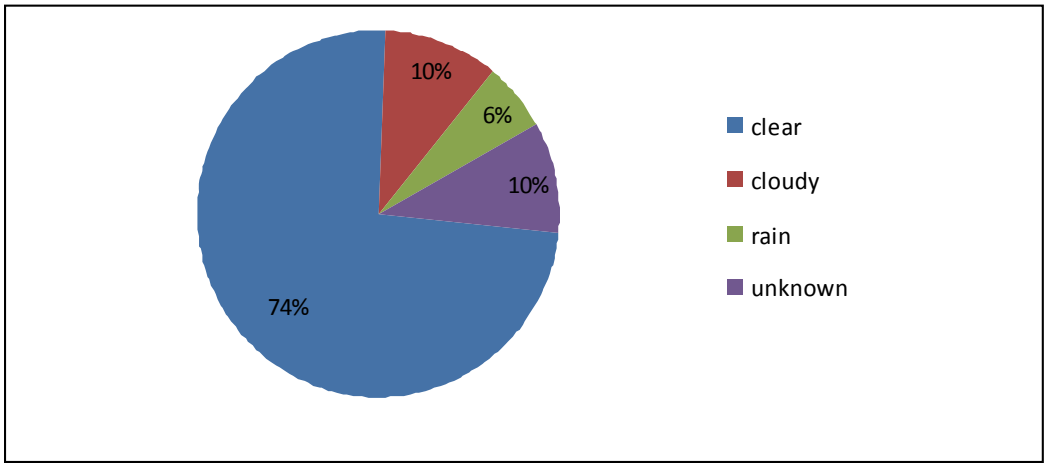


Figure 5-9. Weather Conditions During Pedestrian Accidents on State Highways, Statewide, 2004-2008, HDOT

The counties are very similar to the statewide data; pedestrian crashes during clear weather conditions varied between 59 and 76 percent, cloudy conditions varied between 6 and 17 percent of crashes, rain varied between 3 and 7 percent. Unknown weather conditions vary between 8 and 18 percent.

For fatal crashes, statewide, most crashes (68 percent) occurred during clear conditions, 11 percent occurred when it was cloudy, and 10 percent occurred during rainy conditions. Eleven percent cited the weather conditions as unknown.

The counties, again, mimic the statewide data, with the exception of the County of Hawaii. In the County of Hawaii, 49 percent of the fatal crashes occurred when it was clear, 17 percent occurred when it was cloudy, and 17 percent occurred when it was rainy. An additional 17 percent cited the weather condition as unknown.

These data show that adverse weather conditions (rain or clouds) do not seem to influence the frequency or severity of crashes. Crashes and fatalities occur in both clear and sunny conditions and rainy and cloudy conditions, with more crashes occurring during clear conditions.

Characteristics of Pedestrian Accidents

Many different factors contribute to pedestrian crashes. This section discusses various aspects of the recorded crashes related to contributing behavioral factors.

Statewide, between 2004 and part of 2008, the most often cited characteristic of pedestrian crashes was a pedestrian crossing in a crosswalk. For the County of Kauai and the island of Oahu, pedestrian crash characteristics are similar to the statewide numbers, with most crashes occurring when a pedestrian is in a crosswalk. Since Oahu has the largest number of pedestrian crashes, it sways the state total for characteristics of pedestrian crashes. In the County of Hawaii, the top two contributing factors to a pedestrian crash were pedestrians crossing without a crosswalk, and a catch-all vehicle and pedestrian collision "other" category. In the County of Maui, the characteristic of pedestrian crashes were highest for pedestrians walking in the roadway. Figure 5-10 shows characteristics of all crashes statewide.

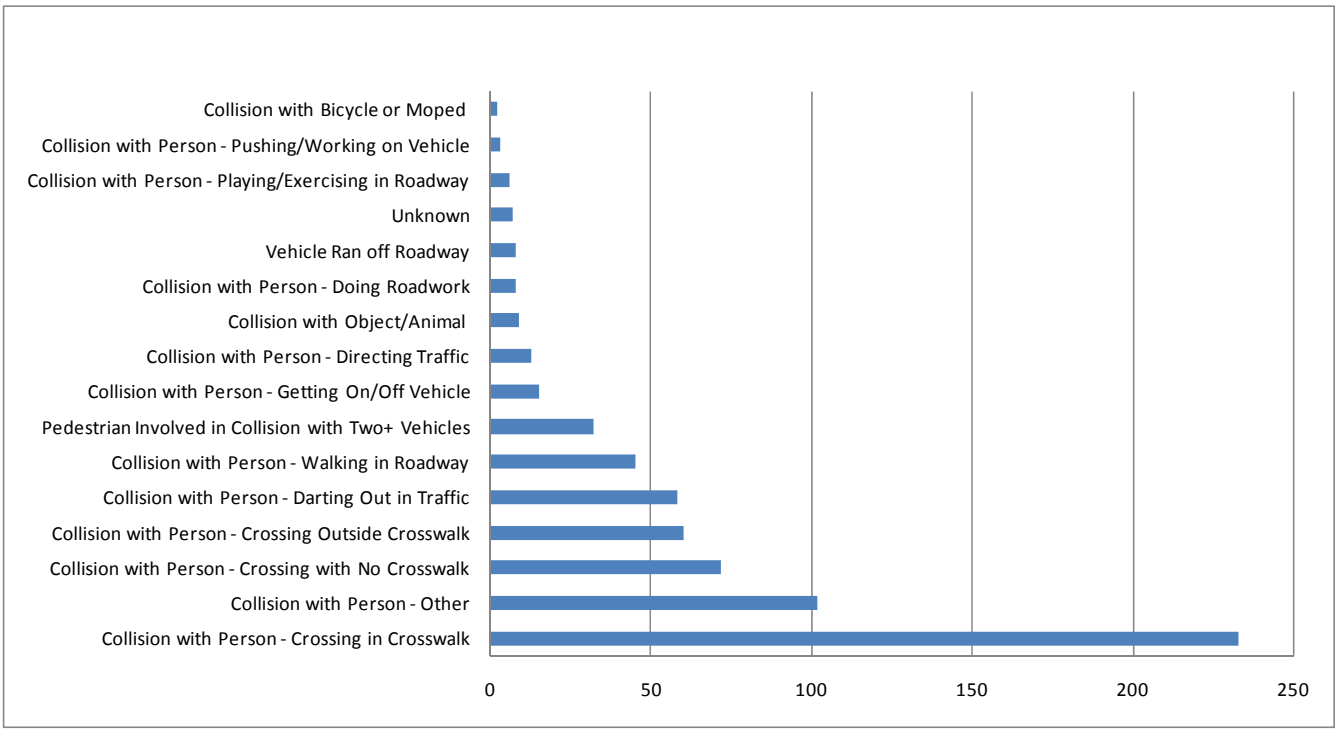


Figure 5-10. Characteristics of Pedestrian Accidents on State Highways, Statewide, 2004-2008, HDOT

For fatal crashes statewide, the characteristics are similar to the overall crashes. The islands of Oahu and Kauai contributed to the most common characteristic of fatal pedestrian crashes involving a collision with a person

crossing in a crosswalk. The next most common characteristic includes the catch-all "collision with a pedestrian – other". Figure 5-11 shows characteristics of fatal crashes statewide.

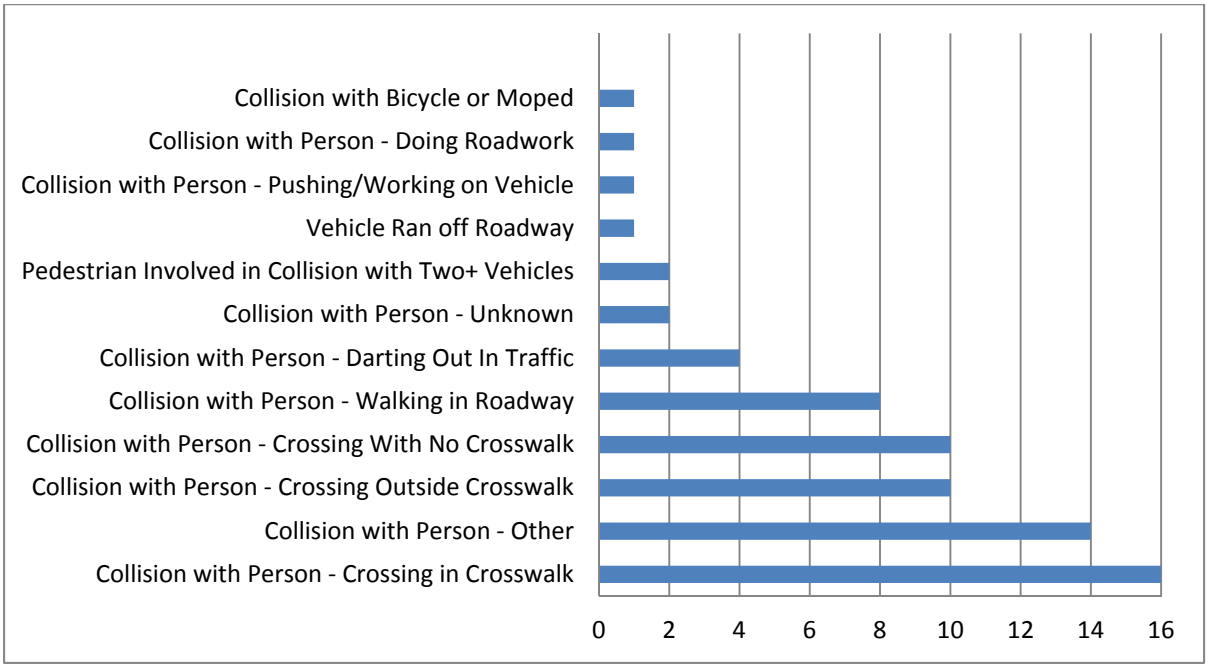


Figure 5-11. Types of Fatal Pedestrian Accidents on State Highways, Statewide, 2004-2008, HDOT

Next Steps

These existing conditions were presented to the TAC and CAC to validate the results. The project team will add information not included in the maps and descriptions presented above. From the revised existing conditions document, areas of concern will be identified using factors already developed, and then projects and programs will be developed to address the areas of concern.

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Appendix D

Methodology for Areas of Concern

Appendix D: Methodology for Identifying the Areas of Concern

This memorandum describes both the factors and the methodology used to identify the areas of concern for the development of a statewide pedestrian project/program list for the Statewide Pedestrian Master Plan.

Introduction

The areas of concern were used to determine the locations of key prioritized projects for the development of a pedestrian project list. Programs and enforcement efforts were also considered at specific areas of concern (e.g. a specific urban area). The identification of areas of concern helped to narrow the focus of the remainder of the planning process. In order to develop a manageable and realistic project/program list, the goal of this task was to identify approximately 25-30 locations through both technical and public processes.

Methodology

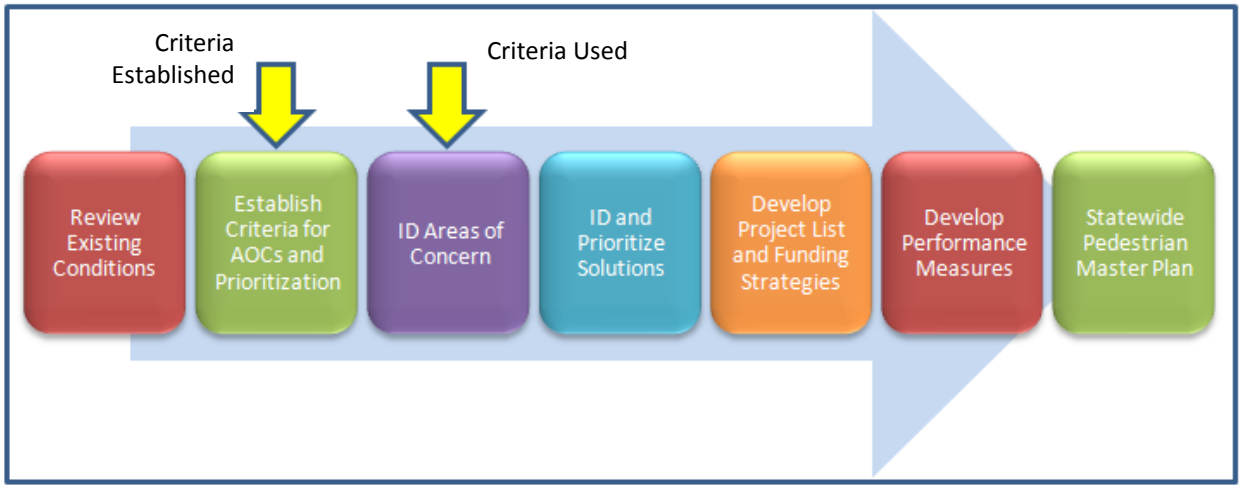
The project team worked closely with the Statewide Pedestrian Master Plan Technical Advisory Committee (TAC), Citizen Advisory Committee (CAC), and the public to develop the areas of concern and to ensure that the methodology used made sense and that the areas selected met both technical criteria as well as the needs of the community.

The factors for selecting the areas of concern were established early to encourage a transparent and unbiased evaluation process that could easily be explained to and validated by the public and stakeholders. This memorandum describes the steps highlighted in Figure 1.

The following steps were used to identify and prioritize the final list of areas of concern. Each step is described in more detail throughout the remainder of this memo.

- Identify Factors for Developing the Areas of Concern
- Conduct a Factor Overlay Analysis
- Seek Public Input and Feedback
- Gather input from the TAC/ CAC
- Finalize the Areas of Concern Locations

FIGURE 1
Statewide Pedestrian Master Plan Process



Identify Factors for Developing the Areas of Concern

To identify the areas of concern, the project team began by developing a list of factors to use to help identify the potential areas of concern for pedestrians throughout the State. These factors were developed based on technical knowledge of best practices in other pedestrian plans and are consistent with state transportation policy. The factors align with the State of Hawaii's vision of supporting a multimodal transportation system and creating a safe and connective pedestrian network. The factors are also consistent with the information gathered during the project's review of existing conditions.

The factors were established in advance to encourage a transparent and unbiased evaluation process that can easily be explained to and validated by the public and stakeholders. The factors selected were identified and endorsed by the Technical Advisory Committee (TAC) at their meeting on June 8, 2010. The TAC-endorsed factors were then reviewed by the Citizen Advisory Committee (CAC) at their first meeting on June 10, 2010. Ultimately, the factors were validated by the public at the first series of public meetings in late July and August 2010.

Factors for establishing the areas of concern are consistent with state pedestrian goals. The factors include:

- Connectivity (areas with sidewalk system gaps),
- Accessibility (areas located near pedestrian-intensive land uses, such as schools and parks),
- Environmental justice (areas with high concentrations of pedestrian-oriented populations, such as youth, elderly, or low-income populations), and
- Safety (locations prone to safety concerns, such as pedestrian crash hot-spots or areas with multiple public complaints).

The factors are described below in no particular order.

Connectivity

Description: A well-connected sidewalk system can help improve pedestrian travel, protect pedestrians from vehicle conflicts, and improve pedestrian access to and from the transit network and other needed services. Locations with gaps in the sidewalk system, especially in urban or rural town areas, can create undesirable walking

conditions. Though it should be noted that many pedestrians use roadway shoulders, many communities prefer a sidewalk over a shoulder when possible, particularly on the state highway system, where vehicle traffic levels are generally higher than on other roadways. Available GIS information and the HDOT Highways Line Diagrams helped to identify sidewalk locations. It does not include information on shoulders that may be used informally as walkways.

How to Measure: Measurement of gaps in the sidewalk system included the identification of locations along state highways in urban and rural town areas where sidewalks are missing on both sides of the highway for ⅛ mile or less in urban areas (all islands but Kauai), ¼ mile or less in rural town areas (all islands but Kauai), and 1 mile or less on Kauai (per the Kauai TAC and CAC). This information was gathered during the review of existing conditions. Measuring sidewalk gaps in this way allows the areas of concern to focus on sidewalk infill in urban areas and rural towns, rather than identifying state routes without sidewalks between towns, where sidewalks would not necessarily be needed or may be a lower priority.

Accessibility

Description: Accessibility has several definitions. In the context of this memorandum, accessibility means the ability of the greatest number of people to access the pedestrian system. This increases mobility and benefits the environment. Certain types of land uses generate high levels of pedestrian activity and may need special attention to ensure service of the pedestrian demand and promote walking and transit use, which reduces reliance on single-occupant vehicles. Areas with close proximity to pedestrian-intensive land uses are a factor for establishing the areas of concern.

How to Measure: The pedestrian-intensive land uses for this project, as identified by the TAC, include:

- Schools
- Tourist destinations
- Harbors
- Stadiums
- State and county beaches
- State and county parks
- Transit centers and heavily used bus stops on Oahu
- Future rail stations (Oahu)
- Hotel areas
- Libraries
- Medical Facilities
- Police stations
- Government service buildings
- High-density residential districts
- Commercial districts

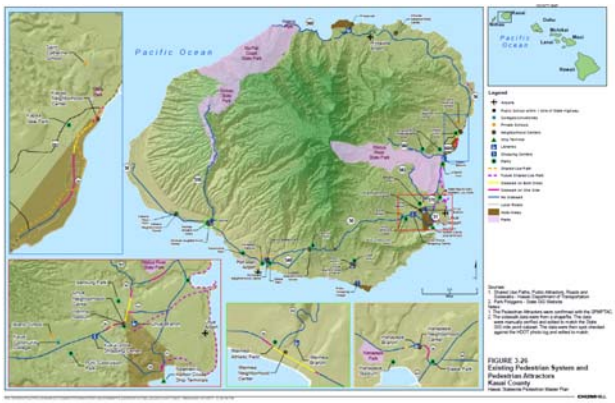


EXHIBIT 1: GIS MAP OF PEDESTRIAN ATTRACTORS ON KAUAI

These types of land uses attract a high number of pedestrians, including tourists who are less familiar with their surroundings. Locations of these land uses were gathered during the review of existing conditions. The TAC decided that schools should be paid special attention during the areas of concern analysis.

These land uses were identified using GIS and buffering schools with a 1-mile radius, future rail stations with a ½-mile radius, and all other pedestrian-intensive land uses with a ¼-mile radius. This reflects a typical "willingness to walk" distance of ¼ to ½ miles, or approximately a 5-minute walk, as reflected in many recent pedestrian studies.[1]

Environmental Justice

Description: Environmental justice considerations address the needs of populations that historically have had limited access to transportation options. Youth, elderly, and lower-income populations are more reliant on the pedestrian system because they may not be able to drive or afford a safe and reliable vehicle. Areas of concentration of these types of populations can be considered to have "high pedestrian potential." This factor will help to ensure that the needs of transportation disadvantaged populations are taken into consideration when establishing the areas of concern.

How to Measure: Locations with high pedestrian potential can be defined as areas with populations that are more reliant on walking, biking, or transit as a primary transportation mode. Such populations include: high concentrations of elderly (over 65), youth (under 17), low-income populations, and populations with no access to a vehicle. This information is available from the 2000 Census. This information will be mapped at the block group level for all islands since block level data is not available.

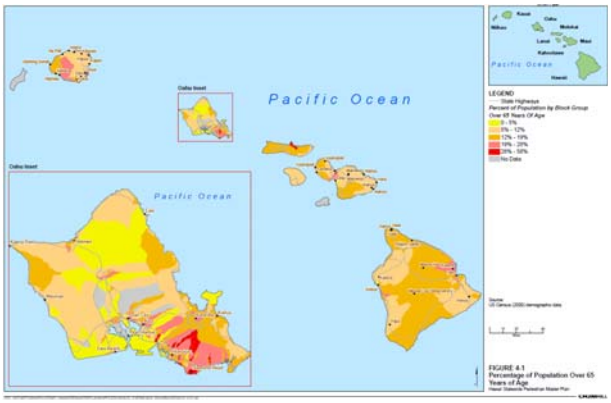


EXHIBIT 2: CENSUS MAP OF POPULATIONS OVER 65

High concentrations were defined consistent with best practices described in the National Cooperative Highway Research Program (NCHRP) Report 532 – Effective Methods for Environmental Justice Assessment (2004), which states that when working with census data, threshold levels are determined in one of two ways: (1) Agency-led working groups may determine threshold levels (often vetted by the public) or (2) Setting thresholds equal either to state or county level averages, depending upon the size of the study area.

Populations of youth, elderly, and those without access to vehicles will be mapped relative to county level averages, consistent with #2 above.

Per the TAC recommendation, low-income populations were mapped according to the County Median Fiscal Year 2010 Low Income Limits consistent with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act or URA). Block groups were mapped that have lower average incomes than the County median low income limits. (http://www.huduser.org/portal/datasets/ura/ura10/RelocAct.html)

[1] Agrawal et al, 2008; O'Sullivan and Morrall, 1996

Safety

Description: Safety is of critical importance for the Statewide Pedestrian Master Plan. This factor is consistent with the state and HDOT mission of creating a safe and accessible pedestrian system. It also reflects the values of communities around the state. It is a topic that came up with project stakeholders. In addition, the public discussed safety issues and wanted to know that the Plan is addressing safety as an important consideration for pedestrian system improvement on state highways.

How to Measure: Safety can be measured in a variety of ways. Although crash locations are one way to determine where potential safety problems may exist, there are also other ways to identify potential safety concern areas.

For this project, safety concern areas were measured by the following:

(1) *Pedestrian crash hot-spots.* Areas with a high occurrence of pedestrian crashes may indicate concerns regarding roadway conditions or pedestrian behavior. Pedestrian crash hot-spots were identified using information compiled by the HDOT on pedestrian crash locations. Based on available data, the project team mapped locations
in urban areas with 5 or more pedestrian crashes or 2 pedestrian fatalities within the past four years, and locations in rural areas with 3 or more pedestrian crashes or 2 pedestrian fatalities within the past four years. Locations are defined as +/- 0.1 mile in either direction.

(2) *High-complaint areas.* The TAC provided a list of locations where their agencies or departments received high numbers of pedestrian safety-related complaints.

(3) *TAC recommendations.* Due to their role as technical experts involved with safety issues on a day-to-day basis, the TAC identified any key areas that they believed need to be identified through the areas of concern exercise.

In order to obtain a better understanding of priorities, members of the TAC, CAC, and the public were asked to rank the factors in regards to priority, with 1 being the highest priority and 4 being the fourth priority. The ranking results are shown in Figure 2 below:

FIGURE 2
Prioritization of Factors for Developing Areas of Concern

Factor	Hawaii	Maui	Kauai	Oahu	Public	TAC	CAC
Safety	1	1	2	1	1	1	1
Connectivity	2	3	1	2	2	2	2
Accessibility	3	2	3	3	3	3	3
Environmental Justice	4	4	4	4	4	4	4

Overall, members of the TAC, CAC, and the public agreed that safety should be the top priority when selecting the areas of concern, followed by connectivity, accessibility, and environmental justice.

After validation of the factors, the next step in the Statewide Pedestrian Master Plan process was identification of the areas of concern.

Conduct a Factor Overlay Analysis

Due to the desire to achieve a more equitable geographic distribution of areas of concern, the TAC decided to keep the four prioritized factors and asked the project team to conduct an overlay analysis in GIS to determine which locations were addressed by four or more factors.

The first part was a technical exercise, where the factors were overlaid with each other using GIS and the established thresholds described above. This resulted in a map of factor overlay density, which was shared with the TAC. The locations with the highest density of factors were potential areas of concern, subject to TAC review and concurrence. It is important to note that this technical exercise was a *tool* for the TAC to use to determine areas of concern.

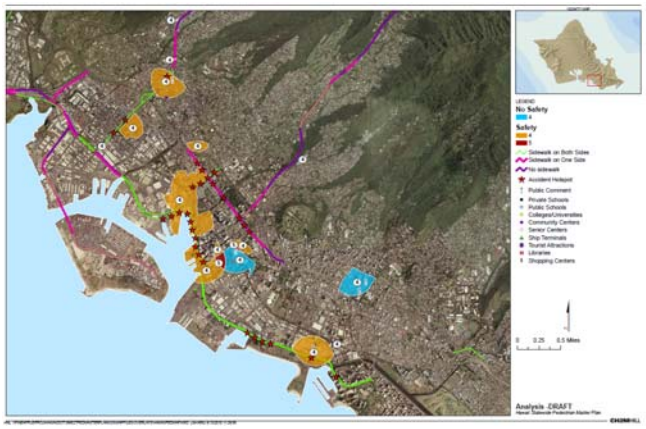


EXHIBIT 3: GIS MAP OVERLAY MAP IN HONOLULU

Next, the TAC reviewed the map of area of concern factor overlay and, based on their technical and professional knowledge, determined which areas of concern were valid, which were invalid, and whether any were missing. The TAC recommendation regarding the map of areas of concern was then shared with the CAC. The initial overlay analysis resulted in 37 potential areas of concern distributed throughout the State, but primarily located on Oahu.

Seek Public Input and Feedback

To ensure an open and transparent process with feedback from all stakeholders, the project team solicited public comments through a series of seven public outreach meetings held throughout the State. Three meetings were held on Oahu, two meetings were held on Hawaii, one meeting was held on Maui, and one meeting was held on Kauai. Members of the public were asked to review the existing conditions of the State highway pedestrian system and marked on a set of maps their areas of concern. The public also submitted their comments through the project website, mails, emails, and phone calls. All of these comments submitted by the general public were documented in a public comment log.

EXHIBIT 4: PUBLIC COMMENT MAP ON HAWAII ISLAND

Comments related to location-specific, state-owned facilities were categorized by island. All locations that received three or more public comments were considered as potential areas of concern locations. A total of 17 areas of concern locations were identified through this public involvement process.

Input from the TAC/ CAC

Several area of concern locations were brought up by the TAC and CAC. These locations included areas of concern that had been observed for the need of improvements for pedestrians and opportunity areas that could be coordinated with other on-going and/or planned efforts. A total of six areas of concern/opportunity locations were identified by the TAC/CAC.

Finalize the Areas of Concern Locations

The combined areas of concern locations generated through the factor overlay analysis, public comments, and input from the TAC and CAC are as shown in Figure 3. A total of 60 areas of concern locations were identified. This list did include several redundant locations with the same/different concerns pointed out from more than one source.

FIGURE 3
Combined Areas of Concern Locations

Island	Factor Overlay Analysis	Public Comments	TAC/ CAC	TOTAL Locations
Kauai	4	8	1	13
Maui	2	2	3	7
Hawaii	1	3	--	4
Oahu	30	4	2	36
TOTAL	37	17	6	**60**

In order to narrow the list of areas of concern to approximately 30 locations, redundant locations with the same concern were eliminated, while different concerns of a redundant location were consolidated. In addition, locations along the same stretch of a facility that shared similar concerns were combined into one location.

All locations that were generated through the factor analysis and public comments were further investigated by the project management team and validated with the TAC and CAC members at the TAC and CAC meetings. Individual follow-ups to obtain more information in regards to a specific area of concern were done via emails, site visits, and phone calls. Both the TAC and the CAC considered the following while narrowing down the list:

- Types of Projects
- Types of Programs
- Types of Locations
- Population representation
- Geographic representation

The general reasons why some of the areas of concern were not considered valid were as follows:

- The area of concern was located outside of the State's jurisdiction.
- Concern had already been addressed by recent projects.
- Concern was about to be addressed by on-going/planned projects.
- Significant amount of pedestrian traffic had not been observed or anticipated.
- Majority of the pedestrian accidents occurred due to other influences.

Locations that were not validated by the TAC and CAC members were eliminated from the prioritized area of concern list but are documented in Figure 4 at the end of this memorandum. Locations that were within the City/Counties' jurisdiction were forwarded to the TAC members who are representatives of the City/County agencies.

The final list of areas of concern consists of 31 locations, which includes 5 locations on the Island of Hawaii, 6 locations on the Island of Maui, 1 location on the Island of Molokai, 6 locations on the Island of Kauai, and 13 locations on the Island of Oahu. The focused list of areas of concern (in no particular order) is as follows:

Hawaii

H1 - Hawaii Belt Road, Paauilo Elementary School, Paauilo
H2 - Bayfront Highway, Kaipalaoa Landing, Hilo
H3 - Mamalahoa Highway, Naalehu
H4 - Akoni Pule Highway, at Kawaihae Harbor Road intersection, North Kohala
H5 – Queen's Lei, Kailua-Kona

Maui

M1 - Farrington Avenue, Molokai High School, Hoolehua, Molokai
M2 - Kaahumanu Avenue, Kahului Harbor, Kahului
M3 - Hana Highway, Paia Youth Center, Paia
M4 - Kula Highway, near Makawao Avenue, Makawao
M5 - Piilani Highway, at Moi Street intersection, Kihei
M6 - Mokulele Highway/Puunene Avenue, Kahului
M7 - Main Street, at Church Street intersection, Wailuku

Kauai

K1 - Kuhio Highway, at Kawaihau Road intersection, Kapaa
K2 - Kuhio Highway, between Wilcox Memorial Hospital and Hanamaulu Road, Lihue
K3 - Kuhio Highway and Ehiku Street, Lihue
K4 - Rice Street near Nawiliwili Harbor, Lihue
K5 - Kaumualii Highway, at Papalina Road intersection, Kalaheo
K6 - Kuhio Highway, between Aku Road and Hanalei Dolphin Center, Hanalei

Oahu

O1 - Kamehameha Highway at Pualalea Street, Kahuku
O2 - Kamehameha Highway, between Avocado Street and Kilani Avenue, Wahiawa
O3 - Waialae Avenue, at Hunakai intersection, Honolulu
O4 - Fort Weaver Road, Ilima Intermediate School, Ewa Beach
O5 - Farrington Highway, Nanakuli

O6 - Farrington Highway, Waianae
O7 - Vineyard Boulevard, between Palama Street and Aala Street, Honolulu
O8 - Liliha Street, at Kukui Street, Honolulu
O9 - Vineyard Boulevard, at Queen Emma intersection, Honolulu
O10 - Ala Moana Boulevard, at Hobron Lane intersection, Honolulu
O11 - Ala Moana Boulevard, at Ward Avenue intersection, Honolulu
O12 - Ala Moana Boulevard, between Bishop Street and Richards Street, Honolulu
O13 - Kalihi Street, between N. King Street and Dillingham Boulevard, Honolulu

Next Steps

The project team worked together with the TAC and CAC to develop potential solutions for the area of concern list. Potential solutions for the areas of concern may be projects and/or programs. Potential solutions were developed based on:

1) a planning level analysis,

2) input from the TAC and CAC, and

3) input from the general public.

Once the potential solutions were developed, the projects were prioritized utilizing the process and criteria outlined in Appendix F, *Prioritization Process*. The areas of concern and the projects/programs identified are included in the final Statewide Pedestrian Master Plan.

Potential solutions may be revised after further study is done on verifying the purpose and need and detailed engineering analysis during the HDOT project delivery process.

FIGURE 4

Initial Area of Concern List

Hawaii

- Highway 19 and Palani Road, Kona
- Mamalohoa Highway between Manago Hotel (Captain Cook) and Koa Road, and near Konawaena Elementary School, Kona
- Kaipalaoa Landing/Bayfront Highway, Hilo
- Hawaii Belt Road and Waianueanue Avenue, Hilo

Maui

- Kahului Harbor, Kahului
- Mokulele Highway, near Kuihelani Highway, Kahului
- North High Street and West Main Street, Wailuku
- Maui Mall Shopping Center, Kahului
- Molokai High School, Hoolehua, Molokai
- Kula Highway between Makawao Avenue and Haleakala Highway, Pukalani
- Kulamalu Retail and Office Center, Pukalani

Kauai

- Nawiliwili Road, Lihue
- Kaumualii Highway and Highway 56, Lihue
- Kuhio Highway and Kawaihau Road Intersection, Kapaa
- Kuhio Highway, Hanalei
- Kuhio Highway, Lihue
- Kuhio Highway, Princeville
- Kaumualii Highway, Hanapepe and Eleele
- Kaumualii Highway, Lihue
- Hanamaulu Beach Park, Lihue
- Lihue Hongwanji Mission, Lihue
- Nawiliwili Park, Lihue
- Holy Cross Church, Kalaheo
- Kuamoo Road, Kapaa

Oahu

- Farrington Highway, Waianae, Maili and Nanakuli
- Fort Weaver Road and Kolowaka Drive Intersection, Ewa Gentry
- Ala Moana Boulevard (Ward, Restaurant Row, and Ala Moana Shopping Center), Honolulu
- Kamehameha Highway, near King Intermediate School, Kaneohe
- Fort Weaver Road, near Campbell High School, Ewa Beach
- Fort Weaver Road, near Honolulu Observation, Ewa Beach
- Puukapolei, Kapolei
- First Church of Christ Scientist, Honolulu
- Ala Moana Shopping Center, Honolulu

- Hawaii State Archives, Honolulu
- Kinau Hale, Honolulu
- Aloha Tower, Honolulu
- Aliiolani Hale, Honolulu
- Melim Building, Honolulu
- Aldersgate United Methodist Church, Honolulu
- Likelike Elementary School, Honolulu
- Kaahumanu Homes (subdivision), Honolulu
- Atherton Halau, Honolulu
- Kaewai Elementary School, Honolulu
- Ka Hale Hoano Hou O Ke Akua Church, Honolulu
- Pentecostal Faith Assembly Church, Honolulu
- Hale-Ho Aloha Rest Home, Honolulu
- KPOI – FM, Honolulu
- Kahuku District Park, Kahuku
- Aiea Korean United Methodist Church, Aiea
- Pearl Harbor Yacht Club, Honolulu
- Pearl Harbor Kai Elementary School, Honolulu
- Nimitz Elementary School, Honolulu
- Keehi Lagoon Park, Honolulu
- Central Oahu Christian Church, Honolulu
- Wilson Bridge, Wahiawa
- Waianae Protestant Cemetery, Waianae
- Waianae Valley Road, Waianae
- Leeward Community College, Waianae
- Kalanianaole Highway, Honolulu
- Mokapu Boulevard, Kailua

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Appendix E

Areas of Concern Project Descriptions

Appendix E:
Areas of Concern Project Descriptions

The following are the area of concern project description sheets, which provide a description, analysis, and potential solution for each location.

Hawaii

H1 - Hawaii Belt Road, Paauilo Elementary School, Paauilo
H2 - Bayfront Highway, Kaipalaoa Landing, Hilo
H3 - Mamalahoa Highway, Naalehu
H4 - Queen‘s Lei, Kailua-Kona
H5 - Akoni Pule Highway, at Kawaihae Harbor Road intersection, North Kohala

Maui

M1 - Farrington Avenue, Molokai High School, Hoolehua, Molokai
M2 - Kaahumanu Avenue, Kahului Harbor, Kahului
M3 - Hana Highway, Paia Youth Center, Paia
M4 - Kula Highway, near Makawao Avenue, Makawao
M5 - Piilani Highway, at Moi Street intersection, Kihei
M6 - Mokulele Highway/Puunene Avenue, Kahului
M7 - Main Street, at Church Street intersection, Wailuku

Kauai

K1 - Kuhio Highway, at Kawaihau Road intersection, Kapaa
K2 - Kuhio Highway, between Wilcox Memorial Hospital and Hanamaulu Road, Lihue
K3 - Kuhio Highway and Ehiku Street, Lihue
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K6 - Kuhio Highway, between Aku Road and Hanalei Dolphin Center, Hanalei

Oahu

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O12 - Ala Moana Boulevard, between Bishop Street and Richards Street, Honolulu
O13 - Kalihi Street, between N. King Street and Dillingham Boulevard, Honolulu

Hawaii Belt Road, Paauilo Elementary School

Paauilo, HI

H1

Description

The Paauilo school is located in rural Paauilio, HI. Hawaii Belt Road, Hauola Road and Hauola Lane are the main access roads to the school. A recent school survey showed that most students come by car due to the lack of pedestrian facilities. There are wide paved shoulders along Hawaii Belt Road east of the intersection with Hauloa Road, and narrow shoulders west of the intersection.

Analysis

Students lack a dedicated and intuitive way to walk or bike to school from the pedestrian bridge. Signs indicating to motorists that the area is a school zone are not present.

Existing faded crosswalk at Paauilo Mill Road, looking south.

Existing pedestrian bridge, looking south

Hawaii Belt Road, Paauilo Elementary School

Paauilo, HI

H1

Potential Solution

The site would benefit from installing additional school signage that can remind drivers of the proximity of Paauilo Elementary and Intermediate School. Existing pavement markings should be checked and restriped if faded, such as the existing crosswalk on Hawaii Belt Road at Paauilo Mill Road. In addition, the installation of a pedestrian-activated rectangular Rapid Flash LED Beacon (RRFB) could be installed at the existing crosswalk. Currently, the DOT is in the process of getting FHWA approval to use the RRFB technology. Further studies would be needed to ensure that the RRFB is the appropriate solution on Hawaii Belt Road.

Examples of Unsignalized Pedestrian Crosswalk Signs, School Area Signs, and In-Street Signs in School Areas (MUTCD)

Rectangular Rapid Flash LED Beacon (RRFB)

Paauilo Elementary School's 1st , 2nd, and 3rd grade students have the benefit of going through PATH's Youth Ped Ed Program. The program is a 1-hour program conducted at school that incorporates interactive learning with song, art, and role play of bus danger zones, crossing the street, and the meaning of traffic signs. The continuation of this educational outreach or similar effort is strongly recommended through grants or Safe Routes to School funding.

Cost Estimate

$34,000

Bayfront Highway, Kaipalaoa Landing — H2

Hilo, HI

Description

The Bayfront Highway runs adjacent to the shoreline as it passes through the downtown area of Hilo, HI. Currently, there is not a marked crosswalk for pedestrians to cross the Bayfront Highway to access the waterfront from the downtown area. In this area, Kamehameha Avenue runs parallel to the highway, serving as a local access frontage road to the downtown area. Today there are marked crosswalks for pedestrians to cross Kamehameha Avenue (see photo below).

Local setting

Bayfront Highway, Kaipalaoa Landing — H2

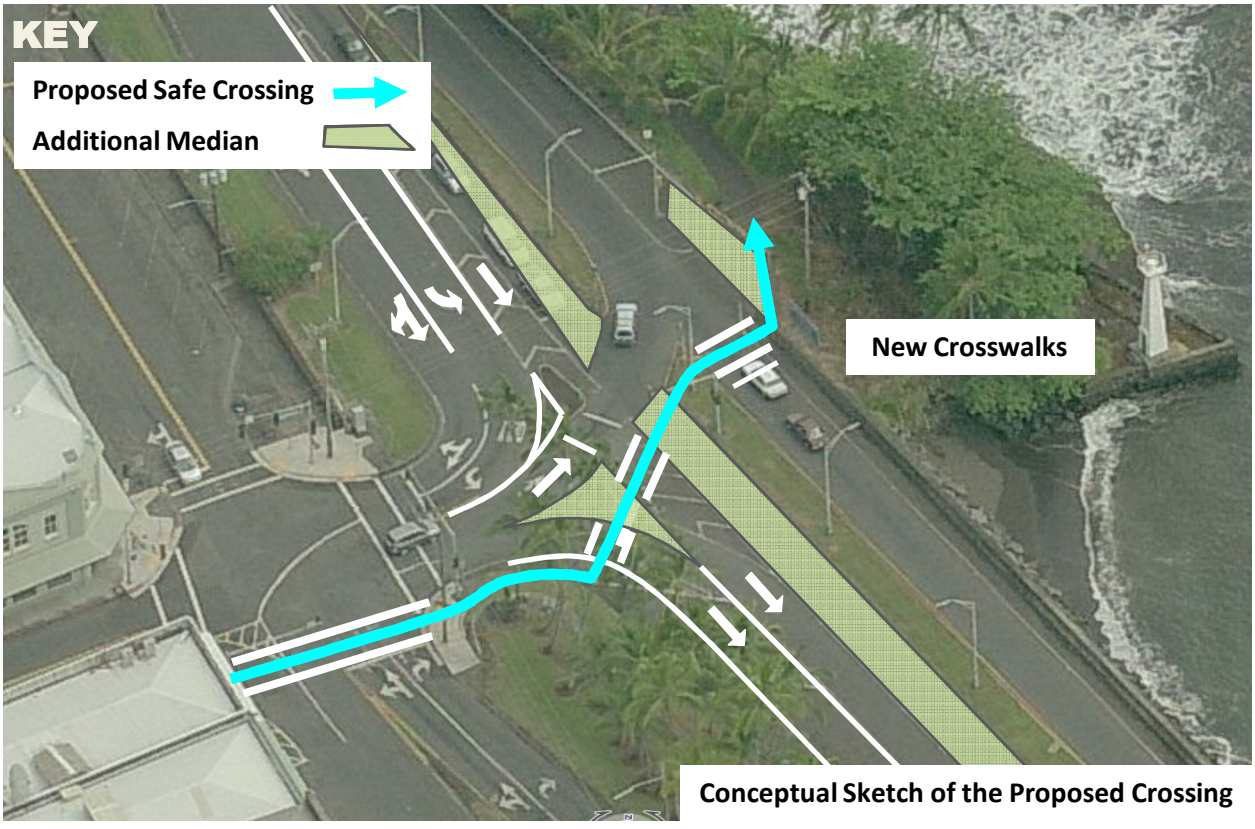
Hilo, HI

Analysis

There is a need to accommodate pedestrians that cross the Bayfront Highway. Pedestrians cross where Waianuenue Avenue intersects with the highway. Existing sidewalks from downtown lead towards this intersection, so it's understandable that pedestrians looking to access the waterfront would choose to cross in this location, in addition the closest viable option is 0.7 miles (over 3,700 feet) to the south.

Potential Solution

The site would benefit from the installation of a series of marked crosswalks to safely link Downtown Hilo to the waterfront, which is consistent with the EnVision Downtown Hilo 2025 plan. This would be achieved by adding new crosswalks on the south side of Waianuenue Avenue and across the Bayfront Highway. Existing and proposed medians could serve as refuge areas to enhance safety (see concept photo below). The new crossing would formalize the existing pedestrian pattern observed. A modified traffic signal is proposed to manage vehicular and pedestrian traffic safely and optimally. Because of the proximity of the intersections, a thorough study of the signal timing/phasing should be conducted.



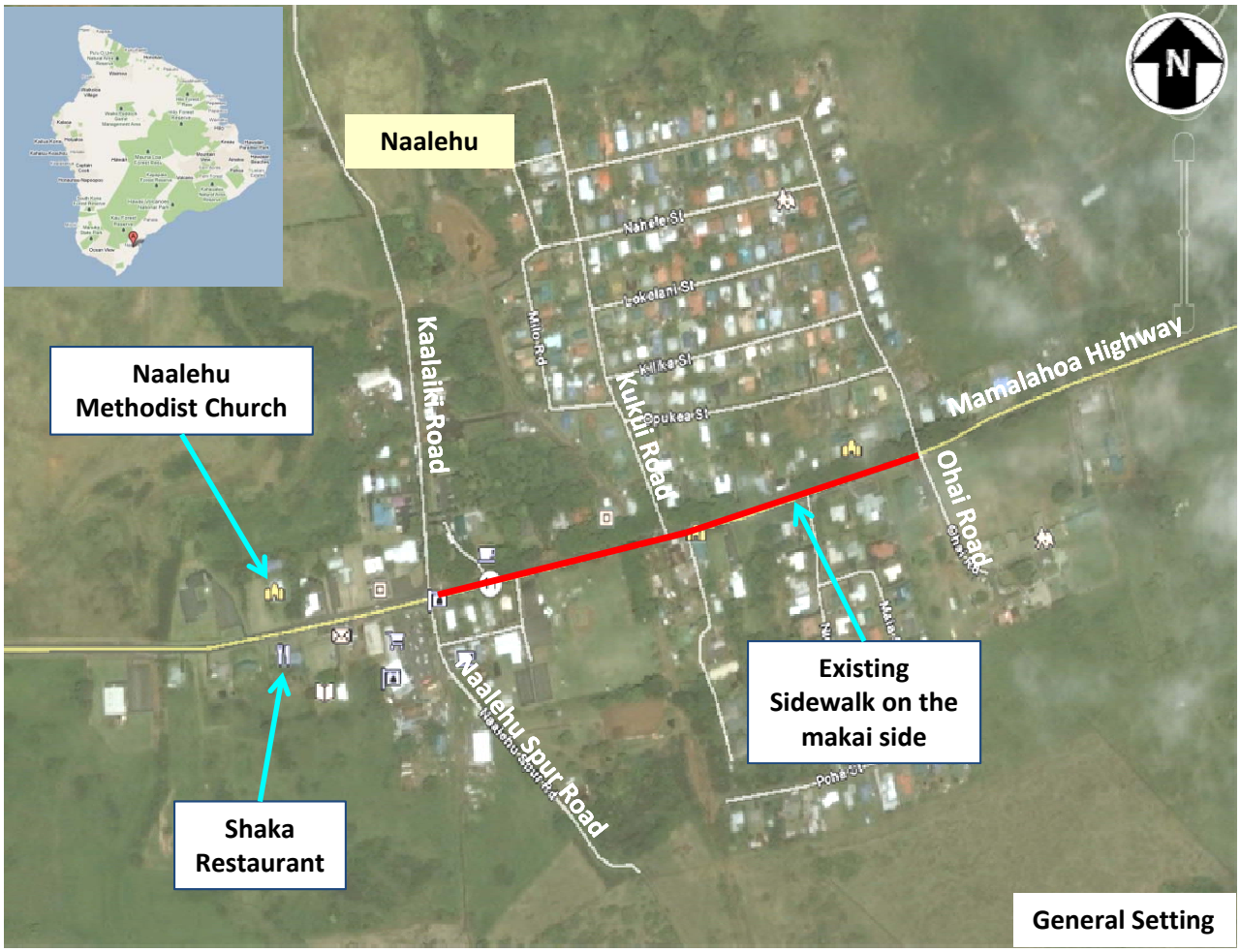
Conceptual Sketch of the Proposed Crossing

Cost Estimate

$249,000

Mamalahoa Highway
Naalehu, HI

H3



Description

Naalehu is a small, rural town near the southern end of the Big Island and has a population of around 1,000. The current pedestrian facilities available to the residents of Naalehu, HI along Mamalahoa Highway are a 4'- wide sidewalk on the makai side of the highway that serves most parts of the community and roadway shoulders (both paved and unpaved) beyond where the sidewalk ends. Within the study area, there is the Naalehu Elementary & Intermediate School, a community park, and town center services (post office, general store, church, restaurant, etc.)

Analysis

The mauka side of Mamalahoa Highway lacks adequate pedestrian facilities in Naalehu. Although the makai side has a sidewalk in good condition, it doesn't continue west through the town center. The shoulders beyond the serviced area can be narrow for pedestrian circulation. The site would benefit from additional sidewalks to enhance pedestrian connectivity from the parks, school and services.

Mamalahoa Highway
Naalehu, HI

H3

No sidewalks through the town center

Faded crosswalks at Kaalaiki Road

<u>Potential Solution</u>

The site would benefit from an enhancement of pedestrian connectivity. The addition of sidewalks at the following locations will better connect the park, school, and services:

- The mauka side of the highway from Naalehu Methodist Church to Ohai Road, and the crosswalk at Naalehu School.
- The makai side of the highway between Shaka Restaurant and Kaalaiki Road.

The community has a strong desire to preserve the rock wall and trees on the mauka side of the highway. Construction of the sidewalk or extension of existing sidewalk should protect these natural resources.

The condition of the existing pavement markings along the highway should also be reviewed and repainted as necessary.

End of the sidewalk near Ohai Road

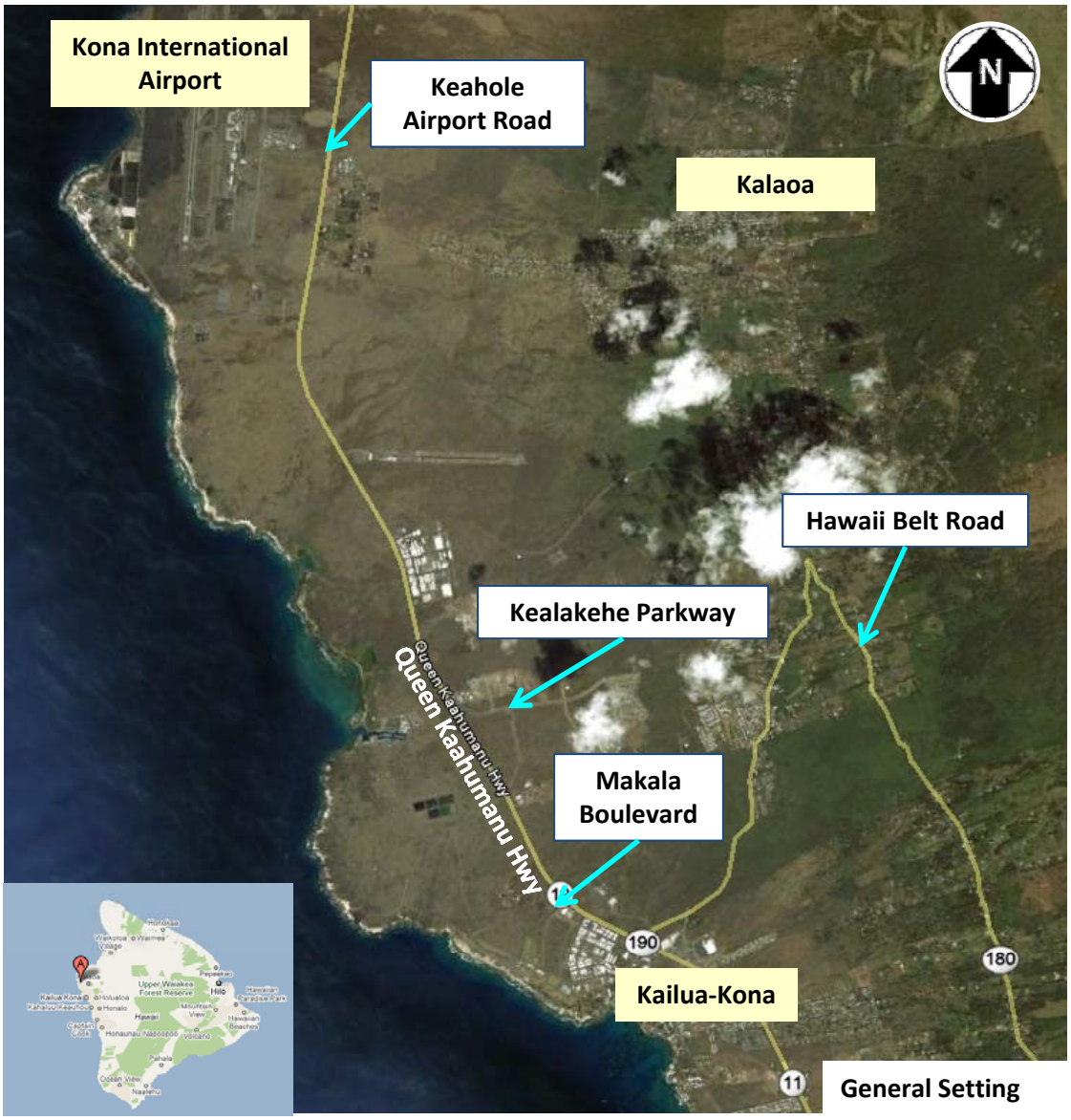
<u>Cost Estimate</u>

$209,000

North Kona, Queen's Lei

Kailua-Kona, HI

H4



General Setting

Description

Over the past few years, roadway improvements in Kona have not kept pace with development and traffic congestion grows worse with time. Major roadway improvements often take a long time to complete and limited financial resources need to be prioritized. The Kona Community Development Plan (Ordinance #08-131) states that, "Widening, improving, and extending major arterials, as well as increasing connectivity between and within existing and future development are necessary to enhance mobility in Kona." One of the transportation strategies of the CDP is to take advantage of Kona's mild climate and build a network of interconnected bike lanes, trails, and sidewalks within and outside of road right-of-ways to provide a healthy and green alternative to automobile use.

North Kona, Queen's Lei

Kailua-Kona, HI

H4

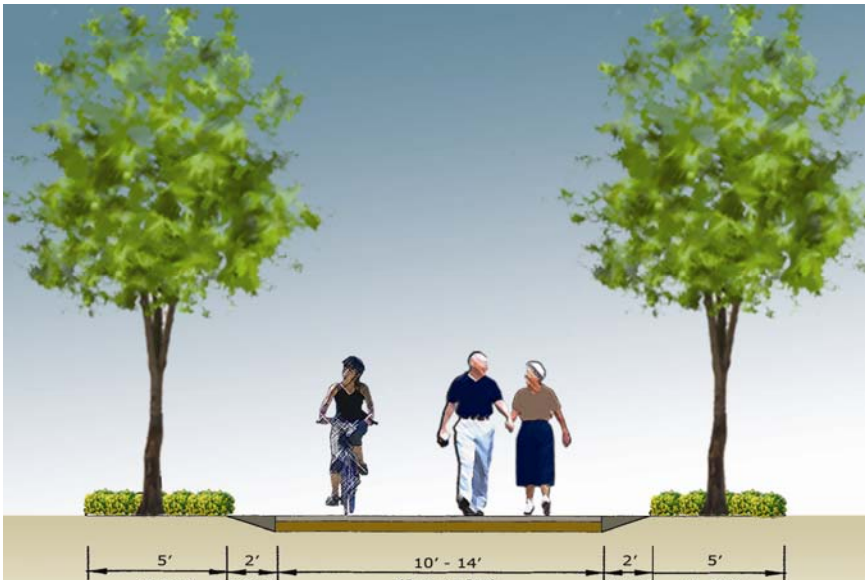
Analysis

The Kailua-Kona area lacks multi-modal connectivity options. Queen's Lei is a 16.75 mile circulation loop for bicyclists and pedestrians. It will provide for the needs of a variety of pedestrians and bicyclists, including commuters, school children, neighborhood residents, and recreational users.

Typical view along Queen Kaahumanu Highway

Potential Solution

The site would benefit from the construction of a portion of the Queen's Lei shared use pathway between Keahole Airport Road to Makala Boulevard to improve connectivity in the West Hawaii area. The proposed project will connect North Kona to the future West Hawaii University campus, a variety of existing and planned facilities such as schools, hospitals, parks, residential neighborhoods, restaurants, public buildings, and Keahole Airport.



Conceptual Sketch of a Shared Use Paved Pathway

Cost Estimate

$7,310,000

Akoni Pule Highway at Kawaihae Road Intersection

North Kohala, HI

H5

Local setting

Description

Akoni Pule Highway is the main road along the North Kohala Coast. It's a two-lane highway with a speed limit that varies from 35 mph to 55 mph. The speed limit is 35 mph through the Kawaihae Harbor and the Kawaihae town. There is no sidewalk, but 5-7 feet wide shoulders are on both sides of the highway.

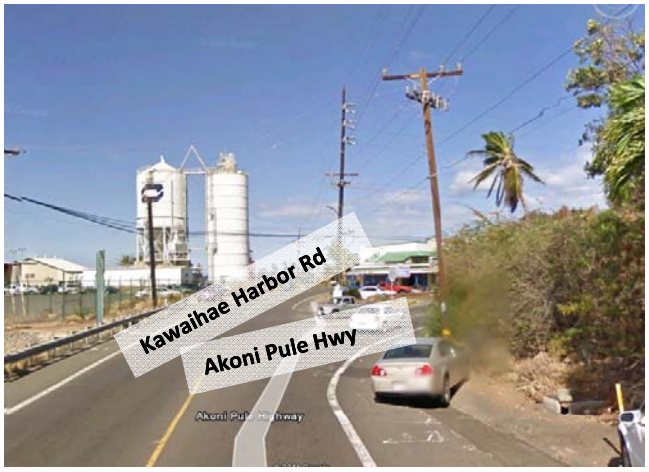
The Kawaihae Harbor is a fuel depot, shipping terminal and also a military landing site. The Kawaihae town is surrounded by a number of restaurants, shops , art galleries, as well as a popular surfing and canoeing spot. With an increasing amount of vehicle traffic and pedestrians in the area, the intersection of Akoni Pule Highway and Kawaihae Harbor Road has come up as a area of concern location.

Akoni Pule Highway at Kawaihae Road Intersection **H5**

North Kohala, HI

Analysis

There is a need to accommodate pedestrians crossing at the intersection of Akoni Pule Highway and Kawaihae Harbor Road. There is currently no crosswalk nor signage to warn motorists to be aware of pedestrian crossings. It also appears that the sight distance for motorists to see pedestrians at the mauka side of the intersection is limited due to parked cars at the shoulder and overgrown vegetation.



Akoni Pule Highway and Kawaihae Harbor Road Intersection

About 150' South of Akoni Pule Highway and Kawaihae Harbor Road Intersection

Potential Solution

In order to improve the intersection sight distance, it's recommended to realign the highway toward the makai side of the road for approximately 600 feet along Akoni Pule Highway and 120 feet along Kawaihae Harbor Road. This would improve the intersection sight distance and minimize the effect of any obstructions in the shoulder.

The site would be further improved by increasing motorists' awareness with the installation of an unsignalized pedestrian crosswalk and advance warning signs that will remind motorists to be prepared to stop for pedestrians. Lighting at the intersections should also be reviewed and enhanced as necessary.

Coordination with the Harbors Division and other potential projects along this corridor should occur to avoid any conflicts or duplicated effort.

W11-2

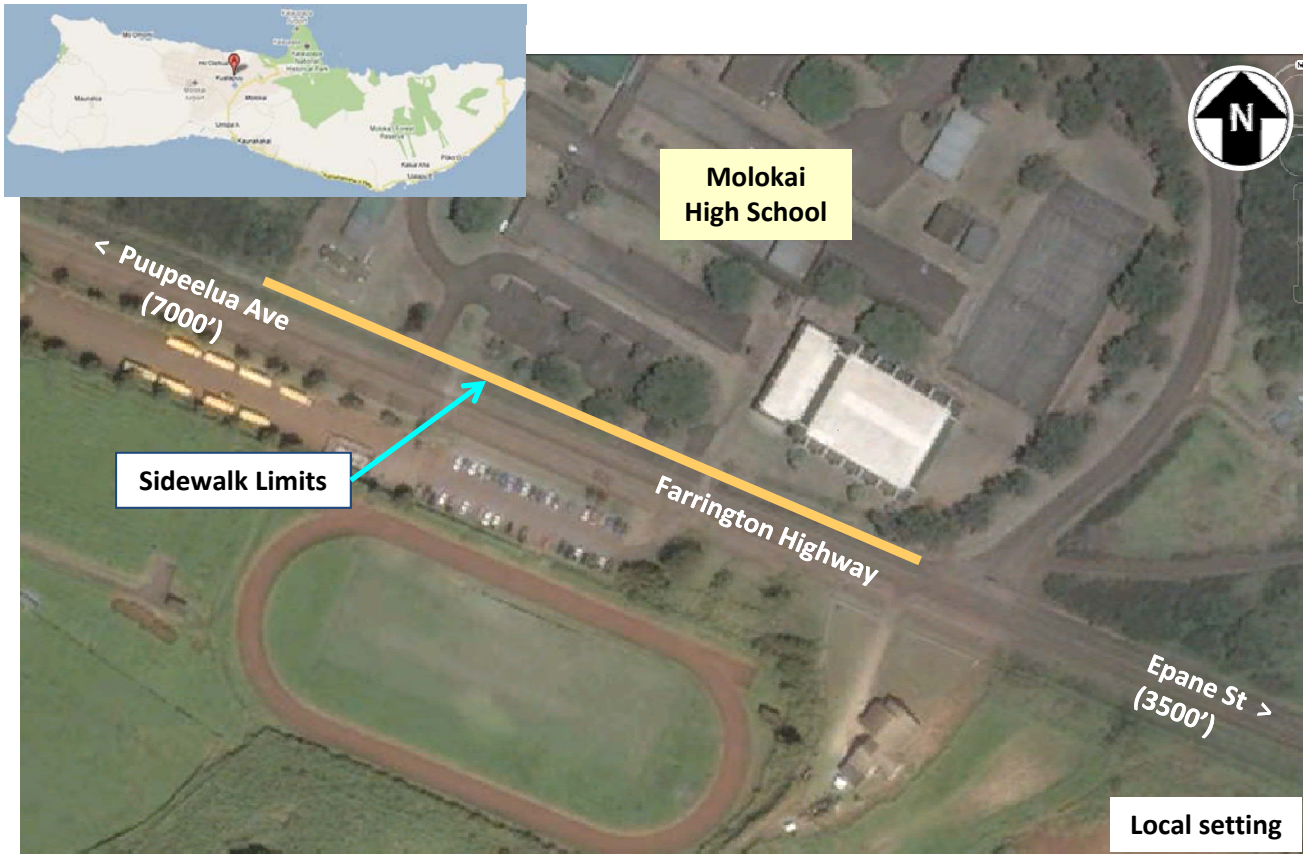
W16-9P

Cost Estimate

$548,000

Farrington Avenue, Molokai High School — M1

Hoolehua, HI



Description

Molokai High School fronts Farrington Avenue in Hoolehua, HI. Although the area is lightly populated and rural, the school area experiences periods of concentrated pedestrian activity. In terms of existing pedestrian facilities, there is a 4-foot paved path that stretches between Epane Street to Puupeelua Avenue, and a 6' concrete sidewalk in front the school, on the north side of the roadway (see map above). In other adjacent areas, there is either an asphalt pathway or wide shoulders for pedestrian use.

Analysis

Students lack dedicated pedestrian facilities to walk to school, as sidewalks transition into shoulders just past the high school (see photo, right). Improved pedestrian accommodations would benefit the community and enhance pedestrian connectivity within the area.

Sidewalks ends beyond Molokai High School

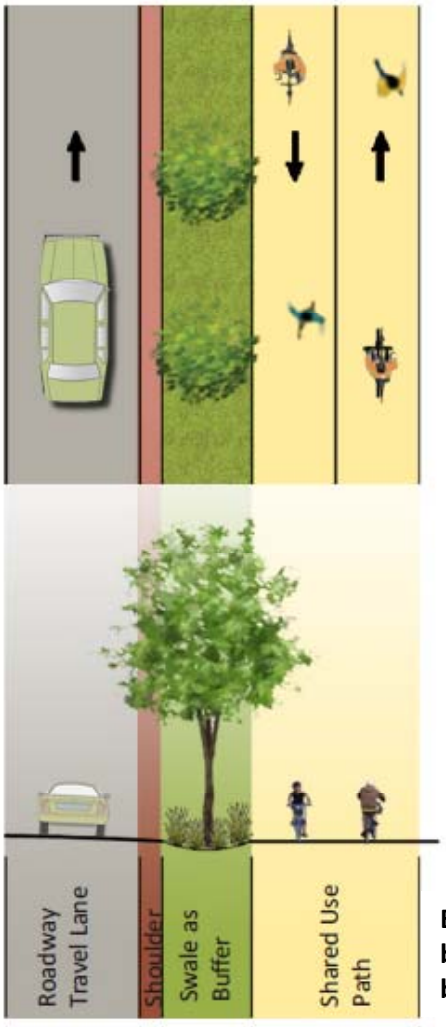
Farrington Avenue, Molokai High School M1

Hoolehua, HI

Potential Solution

The site would benefit from the construction of a shared-use asphalt pathway that could tie into the existing sidewalk in front of the school. This would provide students with a dedicated path separated from vehicular traffic (see illustration below) from Kalae Highway to Molokai High School and vice-versa.

Extending the sidewalks that are currently in front of Molokai High School is another option, though it would require new drainage infrastructure improvements in the area. Additionally, sidewalks may not be consistent with the rural setting of the site.



Conceptual Sketch of a Shared Use Paved Pathway

Buffers between shared use paths and roadways should be a minimum of 5' wide. Exact distance will be dictated by the clear-zone design requirements.

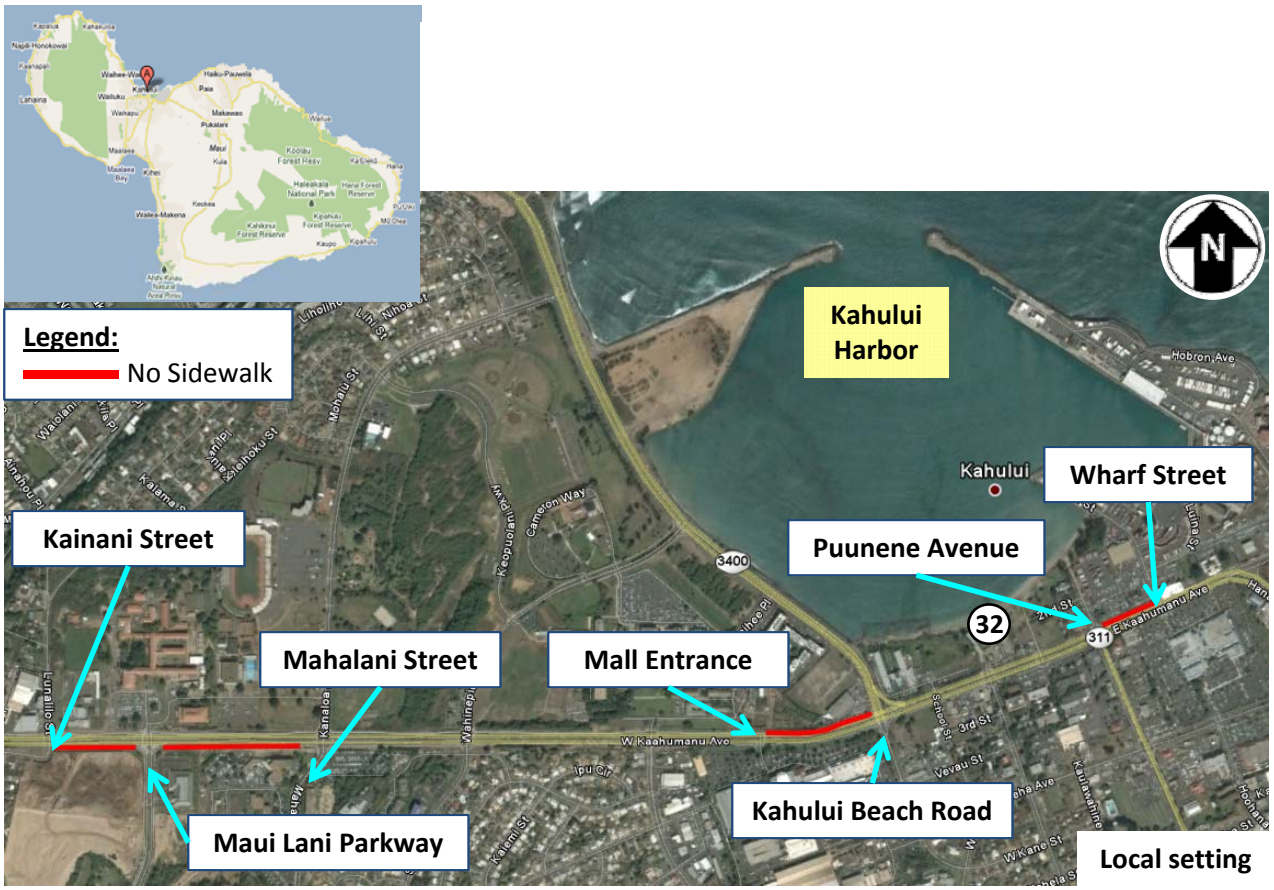
Cost Estimate

$413,000

Kaahumanu Avenue, Kahului Harbor

Kahului, HI

M2



Description

Kaahumanu Avenue is the main roadway through Kahului, HI. The area surrounding Kahului Harbor constitutes the heart of the Kahului central area, with a multitude of business/commercial land uses, government facilities, schools, parks, residential, and shopping centers. Therefore, there is a strong need to have pedestrian connectivity on both sides of the entire stretch of Kaahumanu Avenue.

Kahului Harbor, located on the makai side of Kaahumanu Avenue generates industrial and freight related traffic along Kaahumanu Avenue. The Harbor also introduces pedestrians to the area from the cruise ship vessels. These pedestrians access Kaahumanu Avenue at Wharf Street. Within the vicinity shown, sidewalks exist along both sides of Kaahumanu Avenue, with the exception of the makai side of the roadway, between Puunene Avenue and Wharf Street; the makai side between Kaahumanu Shopping Center and Kahului Beach Road; the mauka side between Kainani Street and Maui Lani Parkway; and the mauka side between Maui Lani Parkway and Mahalani Street.

Kaahumanu Avenue, Kahului Harbor

M2

Kahului, HI

Analysis

The area along Kaahumanu Avenue where the sidewalk is discontinuous creates a gap for pedestrian connectivity. In this area, people either walk along a private parking lot, in the bike lane, in the landscaping, or cross to the other side of the road. The landscaped areas are not well lit and contain trees and highway signage.

Potential Solution

The site would benefit from improving "way-finding" signage to clearly direct visitors to attractions and destinations (e.g. shopping malls) from the cruise ship docks in the safest manner possible. This is an opportunity to coordinate with the Harbor's Division to ensure information signage is provided from the cruise ships towards the highway.

The existing sidewalk gaps identified in the Description can be eliminated by constructing new sidewalks. If the mature trees that exist in this area (see photo below) are to be preserved, the new section of sidewalk should be constructed in the existing roadway prism, or in an area obtained via an easement on the adjacent properties.

No sidewalk exists along Kaahumanu Highway adjacent to the harbor. The landscaped buffer should either be improved for connectivity or blocked to prevent passage along this route to avoid unanticipated pedestrian movements.

Cost Estimate

$445,000

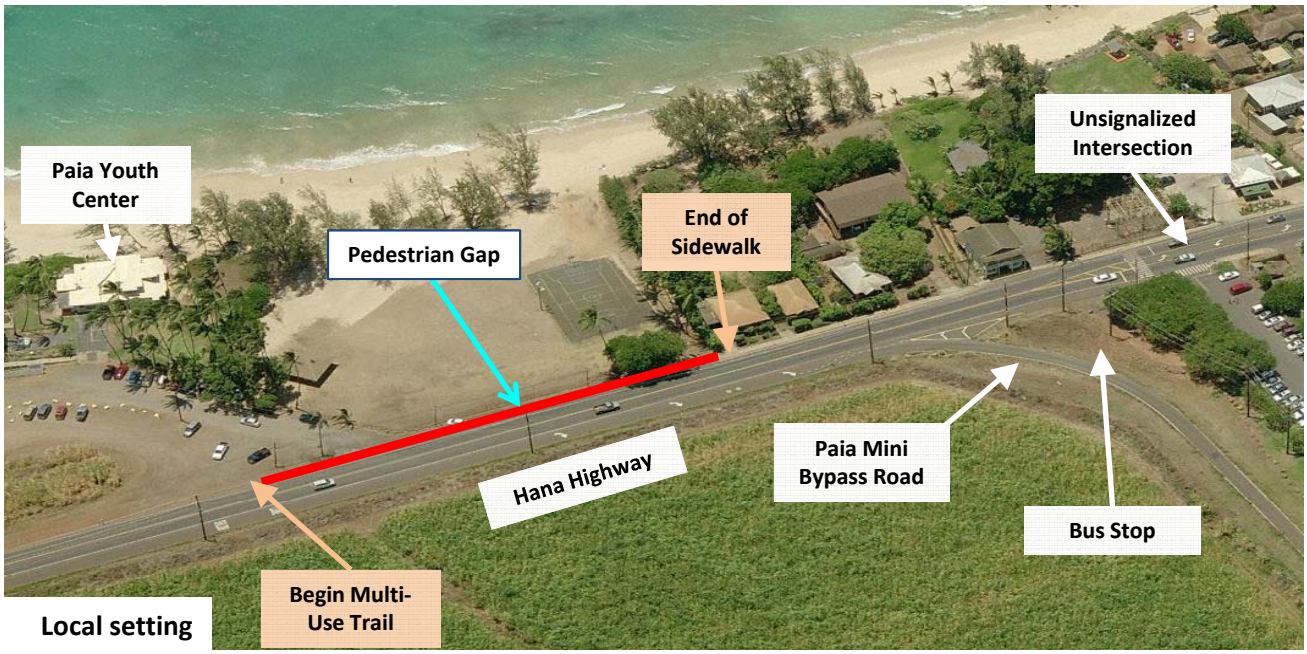
Hana Highway, Paia Youth Center

Paia, HI

M3

Description

The Paia Youth Center located along Hana Highway serves as the local community center in Paia, HI. A multi-use trail ends at the center's parking entrance. However, the existing sidewalk does not connect to the trail, creating a pedestrian gap. The closest bus stop is at the town entrance, off Paia Mini-Bypass Road, on the other side of Hana Highway. There are no sidewalks on this side of Hana Highway in the vicinity of the bus stop. The closest crosswalk to reach the existing sidewalk is at the unsignalized intersection east of the bus stop.



Hana Highway, Paia Youth Center

M3

Paia, HI

Analysis

Between 2004 and 2008, there have been four pedestrian-related crashes in this study area, primarily at the signalized intersection of Hana Highway and Baldwin Avenue. Vehicles often park in the shoulder along Hana Highway, blocking pedestrian access from the parking lot to the Youth Center.

Vehicles diagonally park along the shoulder on Hana Highway near the Youth Center and Baldwin Beach Park

Potential Solution

The site would benefit from closing the pedestrian gap in front of Paia Youth Center's parking lot. The existing sidewalk could be extended to the existing multi-use trail. This would decrease conflicts with adjacent traffic and parked vehicles. In addition, the unsignalized intersection could also benefit from the installation of warning signs at the crosswalk. These improvements would help improve connectivity for pedestrians when walking to the Youth Center. Further analysis would be necessary to study any impacts the extension of the sidewalk would have on drainage or the diagonal parking.

Possible signs to install are shown below:

Unsignalized Pedestrian Crosswalk and Advance Warning Signs. Source: MUTCD, 2009

Cost Estimate

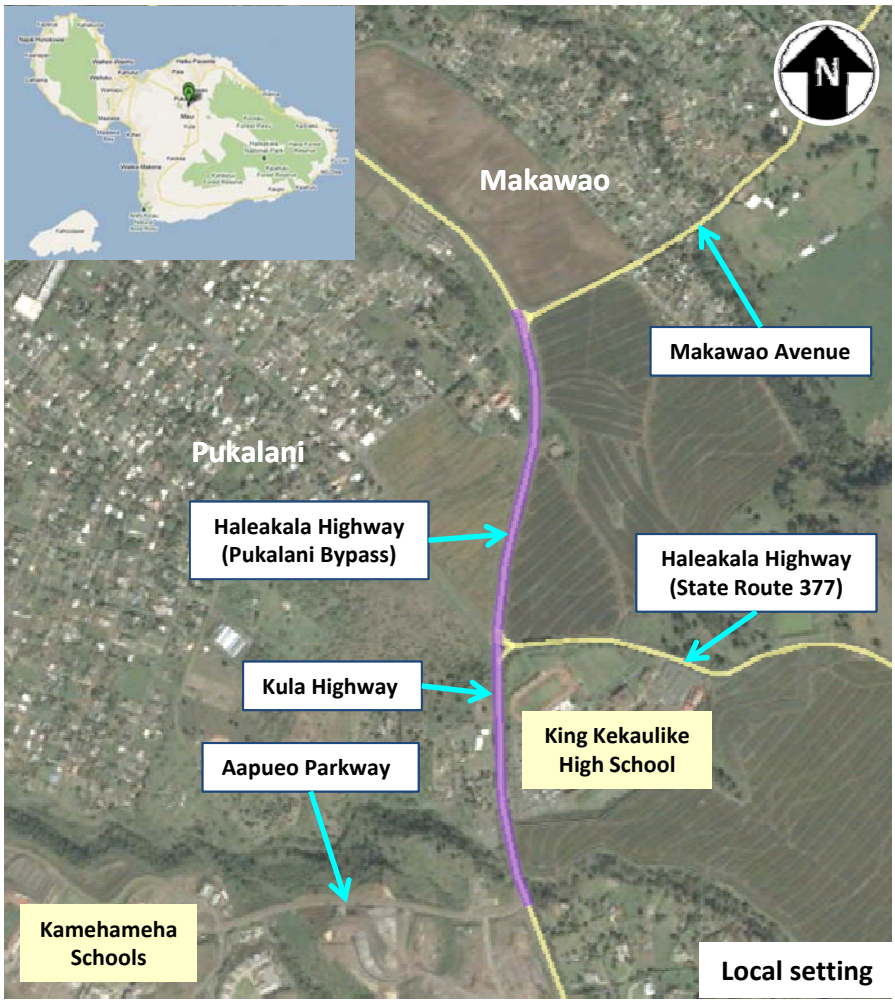
$52,000

Haleakala Highway, Kula Highway
Makawao, HI

M4

Description

Kula Highway in Makawao and Pukalani, HI is the primary access road that links multiple schools in the area. Currently, there are no sidewalks along Kula Highway between Aapueo Parkway and Haleakala Highway and along Haleakala Highway between the high school and Makawao Avenue. However, there is a 10'-wide shoulder on both sides of Kula Highway between Makawao Avenue and the high school.



Partially paved shoulder along Kula Highway

Analysis

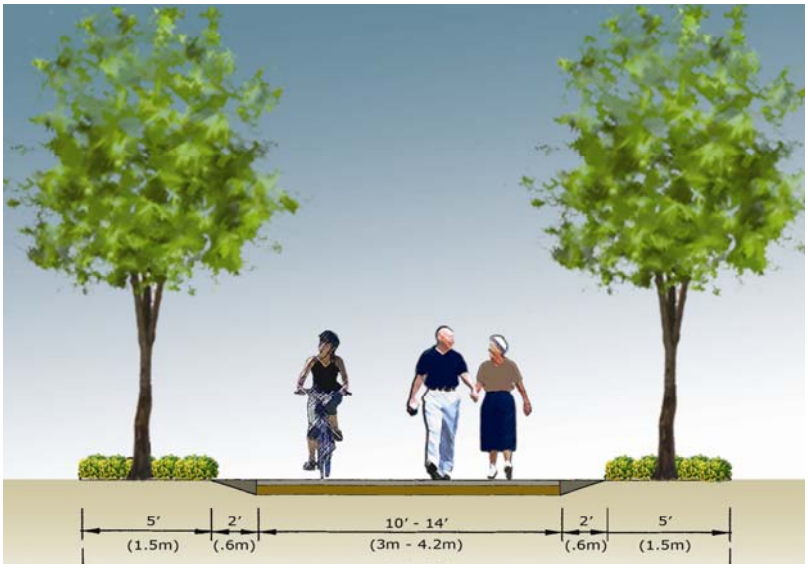
Students from the Makawao and Pukalani communities lack a dedicated path to walk/bike to school. It would be preferable for these young, inexperienced commuters to walk/bike on a facility separated from vehicular traffic.

Haleakala Highway, Kula Highway
Makawao, HI

M4

Potential Solution

The site would benefit from the construction of dedicated pedestrian facilities. A concrete sidewalk is recommended between the more urbanized stretch of corridor between Aapueo Parkway and King Kekaulike High School, where there are existing concrete sidewalks nearby and the future Kualono Subdivision is planned. A wide, shared use asphalt pathway is recommended between the high school and Makawao Avenue. This would provide the students with a safe access route from Makawao Avenue from their residence in Makawao/Pukulani to their school. Coordination with the County should occur to ensure that street connectivity is maintained at jurisdictional boundaries. In addition, the shared use path should be coordinated with the Bike Plan Hawaii (Maui Project #46) proposed shared-use path to the south between Kekaulike Avenue and Piilani Highway.



Conceptual Sketch of a Shared Use Paved Pathway

Shared use path, parallel to Mokulele Highway in Kahului, is designed to serve many types of users.

Cost Estimate

$395,000

Piilani Highway at Moi Place Intersection
Kihei, HI

M5

Local Setting

Description

The intersection of Piilani Highway and Moi Place in Kihei, HI, is currently unsignalized. A marked crosswalk is provided for pedestrians to cross the highway on the south side of the intersection. There is no advance signing to warn drivers of the potential presence of pedestrians.

Analysis

The intersections upstream and downstream from Moi Place along Piilani Highway are both signalized, where as the study intersection is non-signalized and has less visible cues for drivers on the Highway. This condition, combined with the lack of advance pedestrian warning signs, creates an environment where drivers are provided with less awareness to the potential presence of pedestrians.

Though no crashes have been reported at this location, for people crossing the highway, the existing crosswalk may convey a false sense of safety in an area where drivers are not given advanced warning of the crossing location.

Piilani Highway at Moi Place Intersection

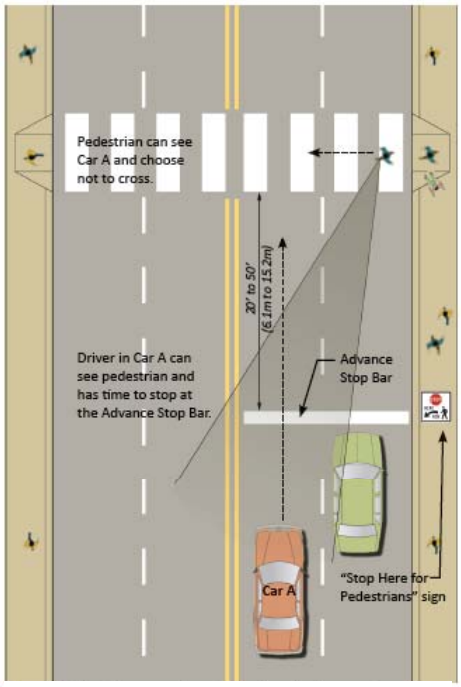
Kihei, HI

M5

Potential Solution

This intersection along Piilani Highway could be further improved by utilizing strategies that will increase pedestrian visibility with additional advance pedestrian signage (such as those shown below) and an advance stop bar. On multiple lane roadways at controlled approaches, advance stop bars increase the safety of the pedestrians by reducing the screening effect of vehicles in the right lane. The advance stop bars should be place 20 to 50 feet in advance of the crosswalk and used with a "Stop Here for Pedestrians" sign.

Unsignalized Pedestrian Crosswalk and Advance Warning Signs. Source: MUTCD, 2009



An advance stop bar gives both pedestrians and motorists better visibility.

High Intensity Activated Beacon (HAWK). Source: MUTCD, 2009

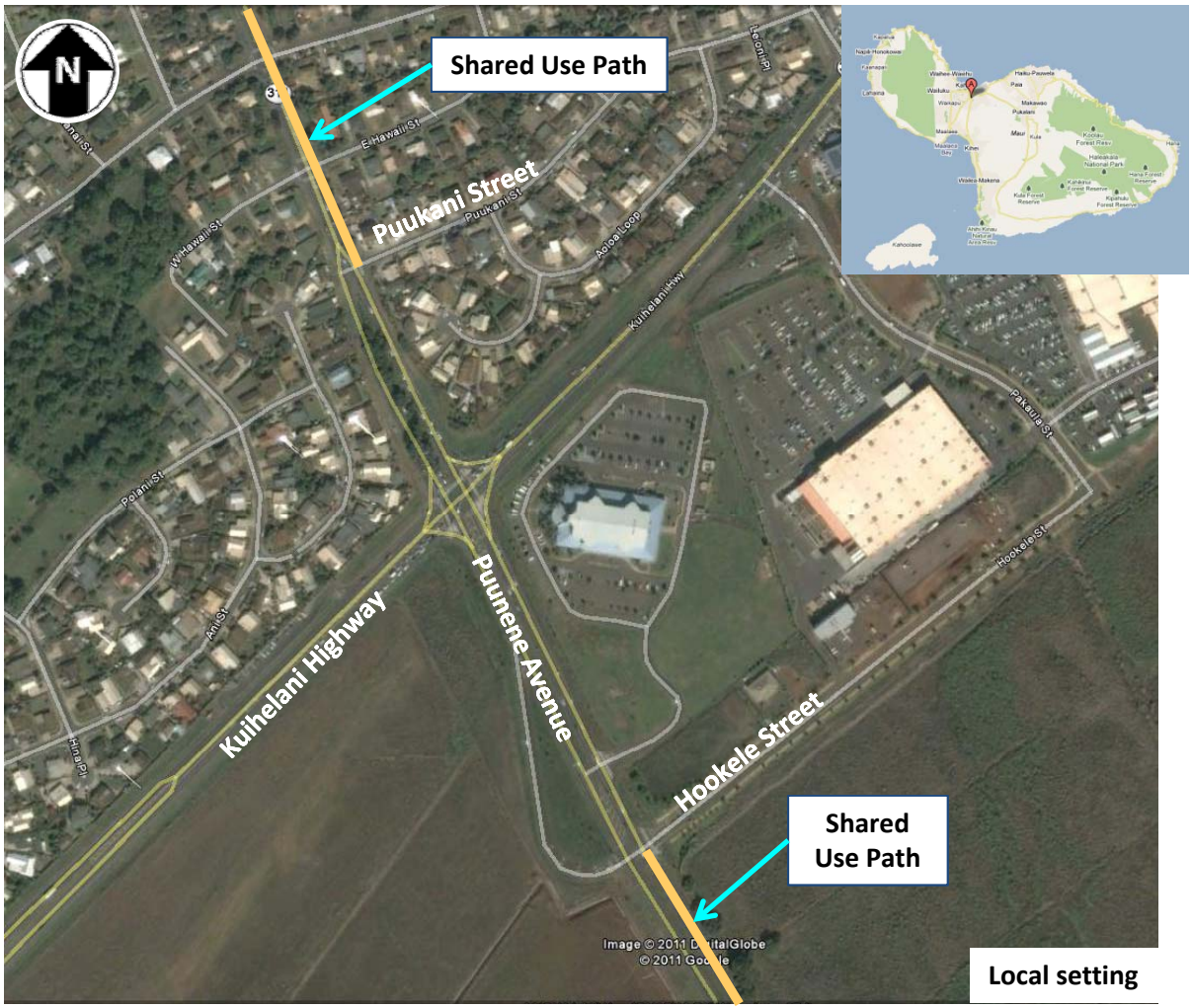
Additionally, further studies could be conducted to determine if a traffic signal or a pedestrian signal such as a high intensity activated beacon (HAWK) would be warranted at this location.

Cost Estimate:

$5,000

Mokulele Highway/Puunene Avenue
Kahului, HI

M6



Description

Mokulele Highway becomes Puunene Avenue north of Hansen Road, in Kahului, HI. A shared use path runs along Puunene Avenue on the makai side of the road, and ends at the intersection with Hookele Street. An existing shared use path also runs along Puunene Avenue, starting at the intersection with Puukani Street.

The mauka or makai shoulder on Puunene Avenue between Hookele Street and Puukani Street is wide (4' to 6') but is not a designated pedestrian facility. However, crosswalks across Puukani Street, Kuihelani Highway and Hookele Street currently lead pedestrians to walk on the shoulder or a grass pathway.

Analysis

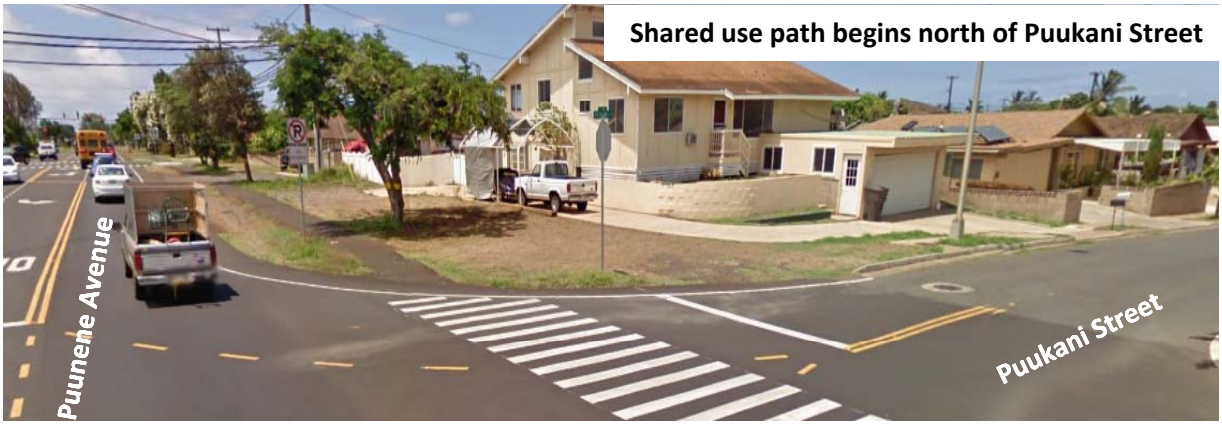
A gap in pedestrian connectivity exists between Hookele and Puukane Streets. Additionally, there is a conflict between the perceived use of the mauka or makai shoulder along Puunene Avenue and the allowed use.

Mokulele Highway/Puunene Avenue
Kahului, HI

M6

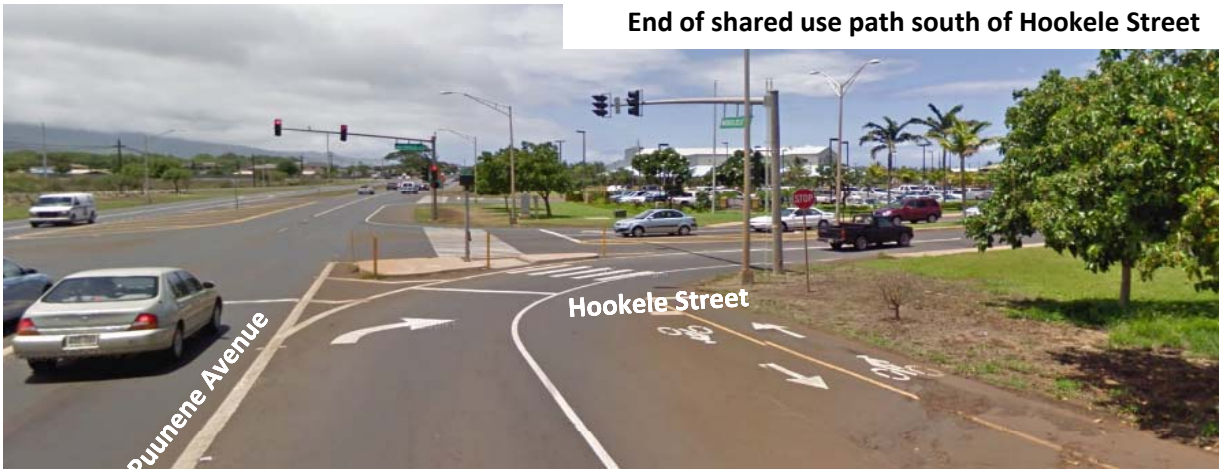
Potential Solution

The site would benefit from an extension of the shared use path south of Puukani Street to connect with the shared use path at Hookele Street. This would close the gap and create a seamless pedestrian facility between the two existing shared use paths.



Shared use path begins north of Puukani Street

Shoulder along Puunene Avenue between Puukani and Hookele Streets



End of shared use path south of Hookele Street

Cost Estimate:

$510,000

Main Street at Church Street and High Street Intersections

M7

Wailuku, HI

Local setting

Description

Main Street in Wailuku, HI is an arterial that passes through an urbanized area in the city. Intersections are regularly spaced and include sidewalks, ADA ramps, and marked crosswalks. Church Street and High Street both intersect Main Street in an area where there is a mix of office and retail buildings (see photo above). Both intersections experience relatively high levels of pedestrian activity. Two pedestrian crashes occurred near these intersections between 2004-2008.

Analysis

At both the Church Street and High Street intersections with Main Street, the design radii of several of the curb returns is very generous. This allows for vehicles to turn onto or off of Main Street at relatively high speeds, and reduces the amount of time that pedestrians and drivers have to react to the presence of one another. Several of the crosswalks are configured to meet at a single ADA ramp at the center of the curb return. This type of configuration can increase the length of the crosswalk, which adds crossing time and extends the time that pedestrians are exposed to traffic. In addition, there are a lot of turning movements at the Main and High Street intersection.

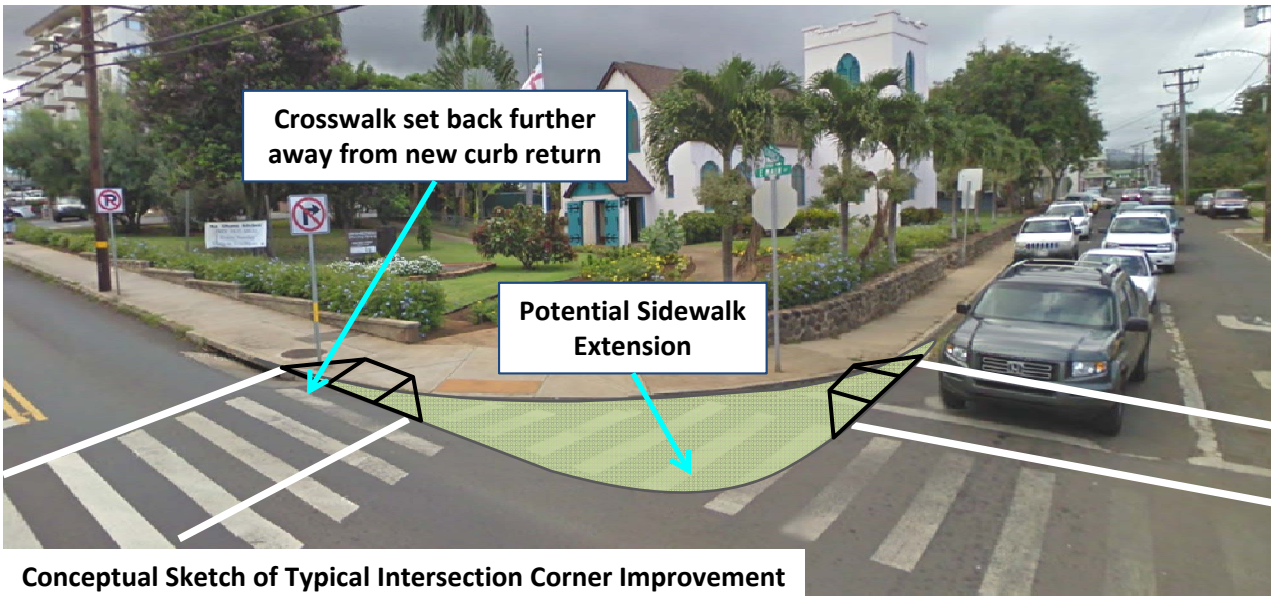
Main Street at Church Street and High Street Intersections M7

Wailuku, HI

Potential Solution

Both the Church Street and High Street intersections with Main Street would benefit from reducing the radius of the curb returns, which would create an environment where vehicles could navigate the two intersections at lower speed. This change would result in decreased crosswalk lengths, that would result in a reduced pedestrian crossing time-reducing exposure of pedestrians to vehicular traffic. Additionally, where possible, the crosswalks should be relocated further away from the curb return, allowing for better visibility of pedestrians by drivers, as they complete their turning movement before encountering a crossing pedestrian. The sketch below shows a conceptual solution at one of the corners at the intersection of Main and Church Streets. A similar treatment could be used at the High Street intersection as well. Note that other constraints, such as drainage and other utilities and turning radii of large vehicles, such as emergency trucks and tour buses, would need to be further evaluated.

The Main and High Street intersection could be further enhanced by restriping the intersection to allow for protected left turn phases (and the elimination of the shared left-thru lanes). Another consideration is the restriction of right turns on red from northbound High Street to eastbound Main Street. The site would benefit from installing additional signage that can remind turning drivers of the presence of pedestrians during the left or right turning movements. Further analysis is required to verify whether or not the proposed intersection and signal modifications mentioned are warranted and potential impacts could be mitigated.



Conceptual Sketch of Typical Intersection Corner Improvement

Cost Estimate:

$156,000

Kuhio Highway at Kawaihau Road Intersection K1

Kapaa, HI

Local setting

Description

Along Kuhio Highway in Kapaa, HI, three roads (Cane Haul Rd., Hauaala Rd., and Kawaihau Rd.) from the mauka side intersect the highway within a 250-foot stretch. Pedestrians from the residential neighborhoods in the area cross the highway to access the multi-use path on the makai side of the road. There are no marked crosswalks across the highway.

Analysis

To cross Kuhio Highway, pedestrians must navigate across two-way traffic without the visibility of a marked crossing. Adding to the challenge is the added traffic-related complexity of the closely spaced intersecting roads. Each of these roads has full access with the highway, drawing, or generating traffic. Drivers must focus on highway lane transitions and the three closely spaced roads, in addition to looking out for pedestrians. The combination of these factors creates challenging conditions for pedestrians intending to cross the highway.

Kuhio Highway at Kawaihau Road Intersection — K1

Kapaa, HI

Potential Solution

The site would benefit from a reduction in the number of access points (intersecting streets) to the highway. One approach to improve access control would be to convert Hauaala Road into a cul-de-sac and construct a new collector road, approximately 1300 feet mauka of the cul-de-sac, connecting to Cane Haul Road. Additional improvements might be needed on Cane Haul Road.

The site would also benefit from installing a marked crosswalk supplemented by advance warning signs across Kuhio Highway at Kawaihau Road. A marked crosswalk would provide pedestrian access to the multi-use path on the makai side of the highway.

Other alternative analysis for the intersection including installation of a traffic signal or a roundabout option is also recommended.

The potential solutions are consistent with recommendations of the draft Kapaa Relief Route Plan. The installation of a marked crosswalk at Kawaihau Road is also consistent with County's next phase of the multi-use bike path project. Any alternative to the potential solutions should be coordinated with the future plans for the Kapaa Relief Route and County's next phase of the multi-use bike path project.

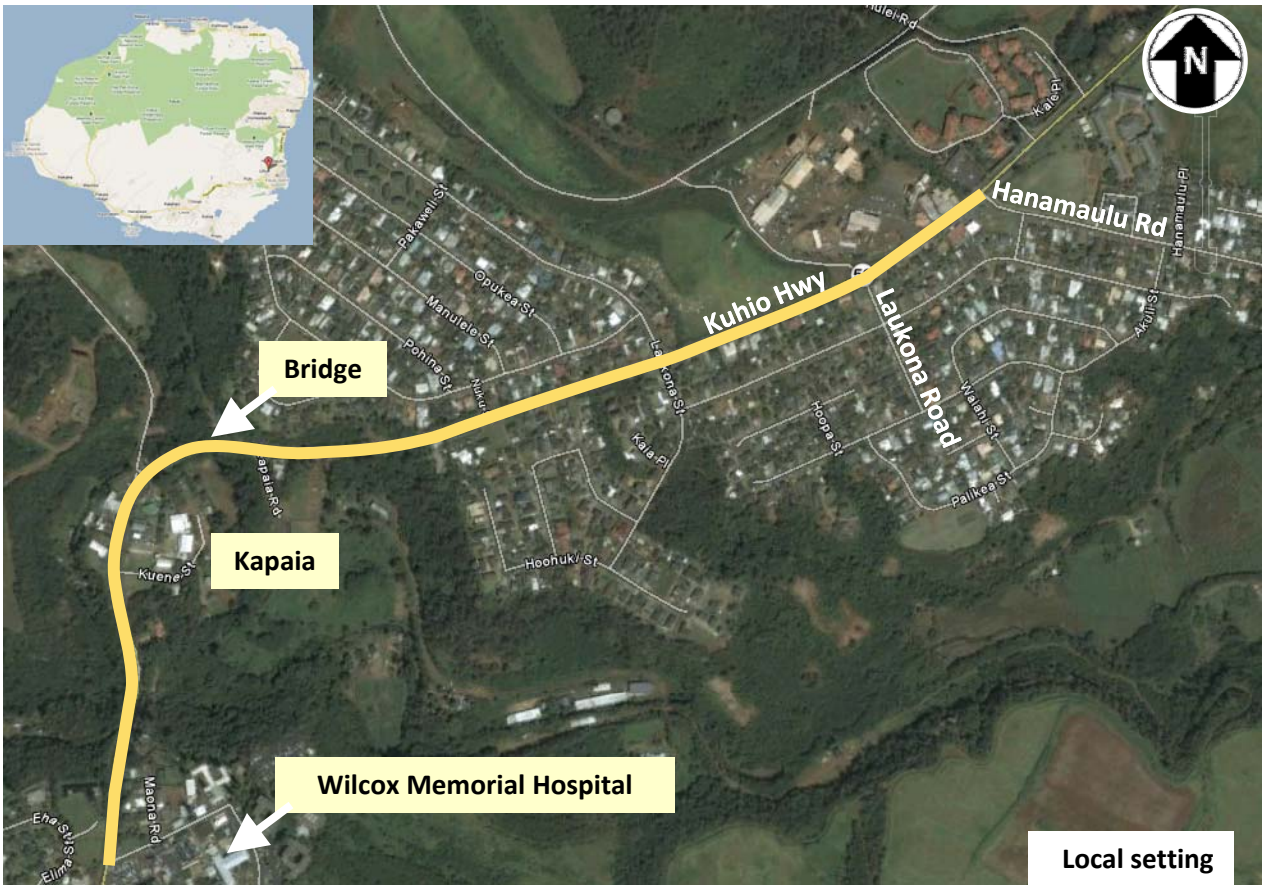
Cost Estimate

$2,550,000

Kuhio Highway **K2**

Between Wilcox Memorial Hospital and Hanamaulu Road

Lihue, HI



Description

Along Kuhio Highway from Wilcox Memorial Hospital to Hanamaulu Road, there are no sidewalks on both sides of the highway or narrow sidewalks on the makai side of the highway. Existing sidewalks run along the highway from Wilcox Memorial Hospital to Kapaia and from Laukona Road to Hanamaulu Road. Existing sidewalks are 2-3 feet wide with sections eroding or non-existent. A narrow two-lane bridge with approximately 12-18 inches shoulders is located at east of Kapaia. A crosswalk is located at the signalized intersection of Laukona Road and Kuhio Highway. Many residents walk along this section of the highway to go to the hospital or access the business services and shopping in Lihue Town.

Kuhio Highway **K2**

Between Wilcox Memorial Hospital and Hanamaulu Road
Lihue, HI

Analysis

It is a concern for pedestrians to walk along this section of Kuhio Highway where there are no sidewalks, eroding sections of sidewalks, or across the bridge with narrow shoulders. It is also difficult for pedestrians to cross the highway due to the lack of crosswalks. In addition, vehicles have been observed speeding along this section of the highway.

Potential Solution

The site would benefit from improved pedestrian connection, which could be done by replacing sections of eroding sidewalks and closing the sidewalk gaps. Crosswalks or other measures could be considered after further analysis is done. High visibility crosswalk markings should be used, and unsignalized pedestrian crosswalk and advanced warning signs should be installed to ensure that motorists are aware of the highway crossing. Widening of the sidewalks or replacing the narrow foot bridge for pedestrians and bicyclists could be considered in this area.

Kuhio Highway heading east; Existing 2-3' sidewalk on the makai side

Unsignalized Pedestrian Crosswalk and Advance Warning Signs. Source: MUTCD

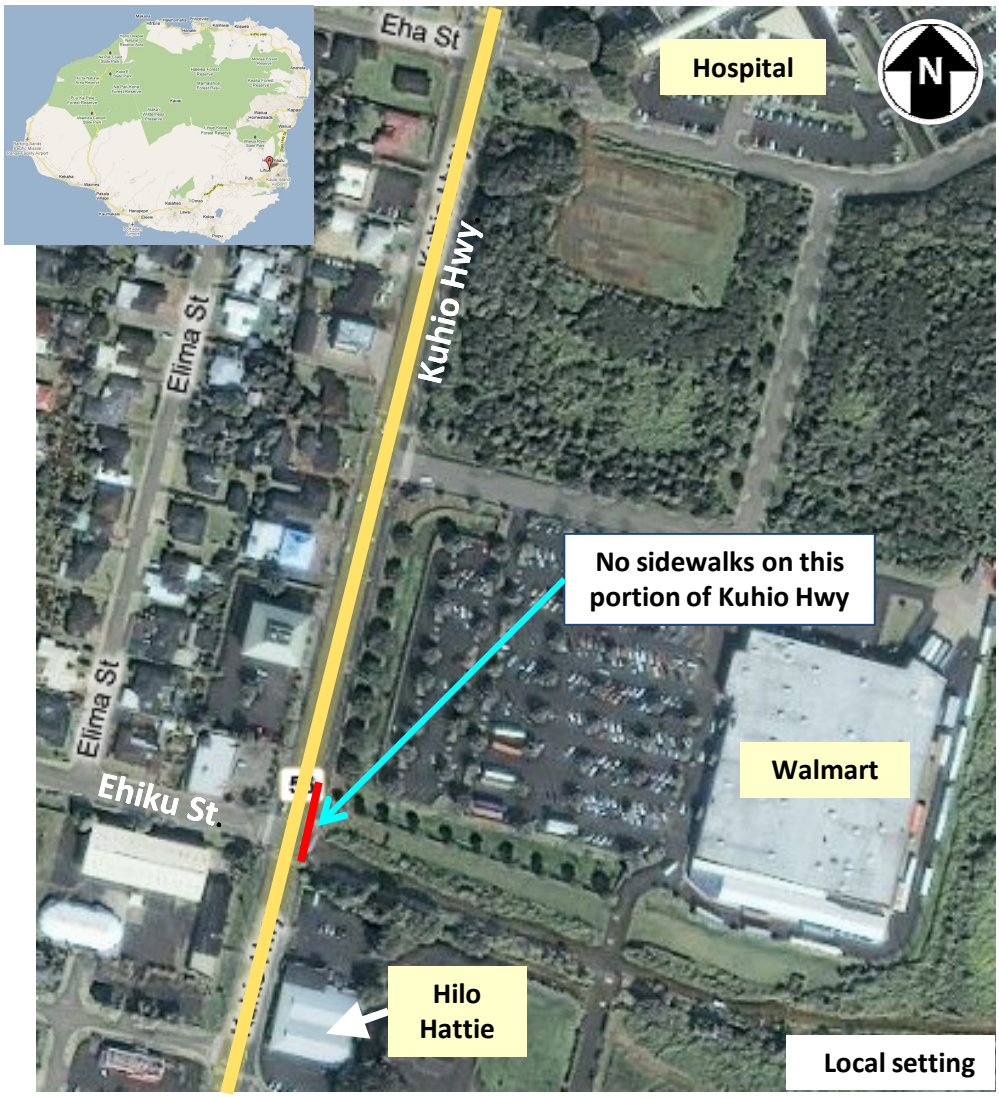
Cost Estimate

$6,393,000

Kuhio Highway at Ehiku Street

Lihue, HI

K3



Description

In this part of Lihue, Kuhio Highway is classified as a principal arterial, serving traffic generators such as shopping centers (including Walmart) and Wilcox Memorial Hospital. The posted speed limit is 25 mph. A gap in the sidewalk exists between the Hilo Hattie and Walmart stores. There is an existing traffic signal at the Ehiku Street intersection, but no crosswalks across Kuhio Highway at the intersection.

Analysis

Where there is a gap in the sidewalk, pedestrians have to walk on the grass buffer. An existing drainage swale and overgrown landscaping impedes passage. The lack of crosswalks across Kuhio Highway limits safe options for pedestrian connectivity along this corridor.

Kuhio Highway at Ehiku Street

Lihue, HI

K3

Potential Solution

The site would benefit from extending the sidewalk on makai side of the highway to the southeast corner of the intersection and installing a crosswalk across Ehiku Street to connect to existing sidewalk. The new sidewalk along Kuhio Highway would likely require the installation of a culvert to go across the existing drainage channel.

Another crosswalk across Kuhio Highway could be added to improve the pedestrian circulation options (see sketch of potential solution below). Modification of the traffic signal would be needed to accommodate pedestrian crossing. Additional studies will be needed to verify traffic operational impacts. Use of high visibility crosswalk markings and installation of advance warning signs are highly recommended to ensure motorists are aware of pedestrian crossing.

Sidewalk gap along Kuhio Highway; looking southbound

Conceptual Sketch of Potential Solution

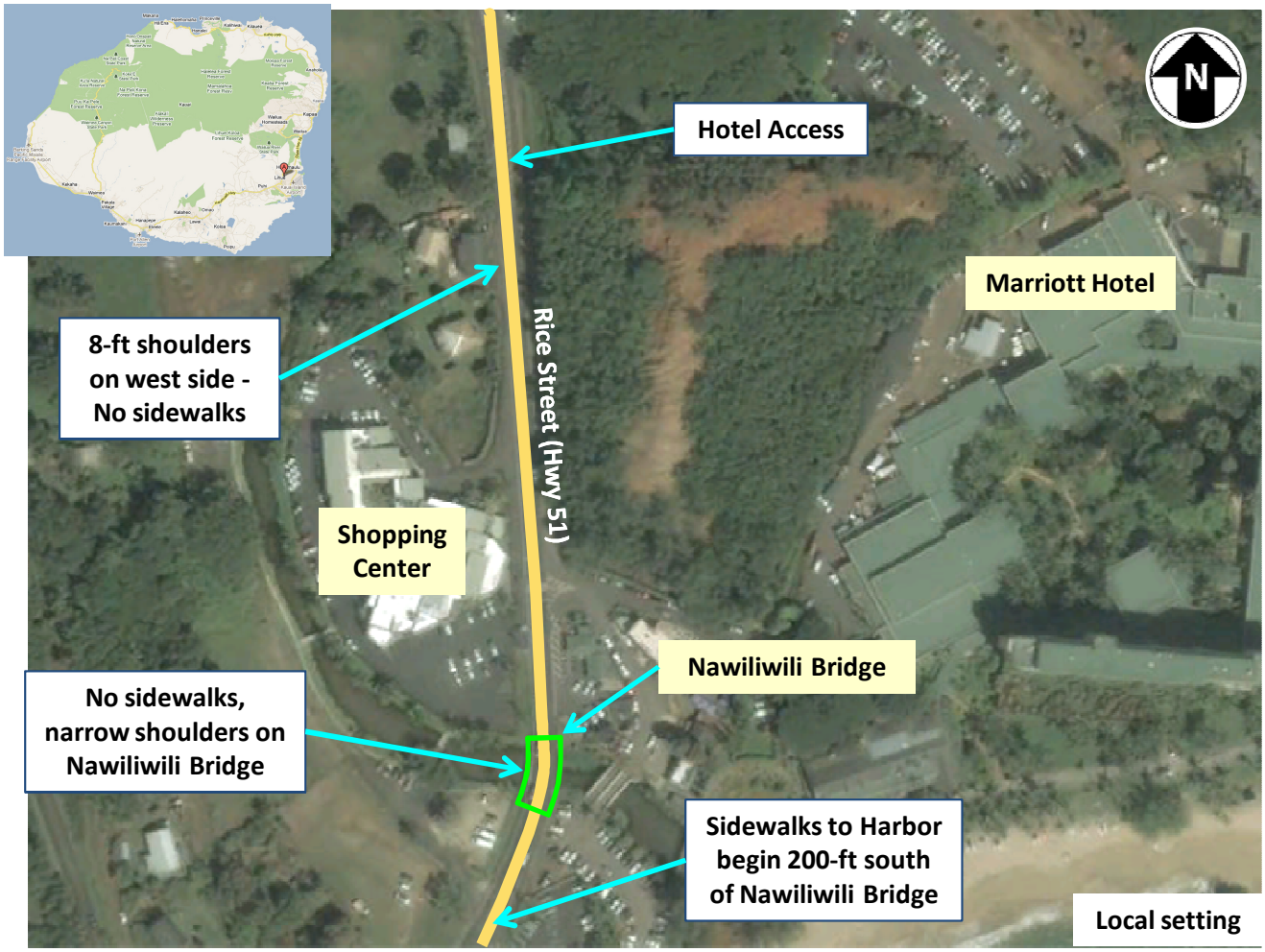
Cost Estimate

$226,000

Rice Street near Nawiliwili Harbor

Lihue, HI

K4



Description

Rice Street serves as a principal arterial near Nawiliwili Harbor in Lihue, HI. The roadway follows mountainous terrain and has sections that are of moderate to substantial grade. Rice Street links Nawiliwili Harbor to shopping and services, the Marriott Hotel and other destinations to the north. Sidewalks that connect to the harbor begin approximately 200 feet south of Nawiliwili Bridge. North of the bridge, there are no sidewalks, but 4-6 foot shoulders are provided on the west side of the roadway and 2-4 foot shoulders are provided on the eastside of the roadway. The bridge has no sidewalks and 1-2 foot shoulder width on both sides.

Nawiliwili Bridge

Rice Street near Nawiliwili Harbor
Lihue, HI

K4

Analysis

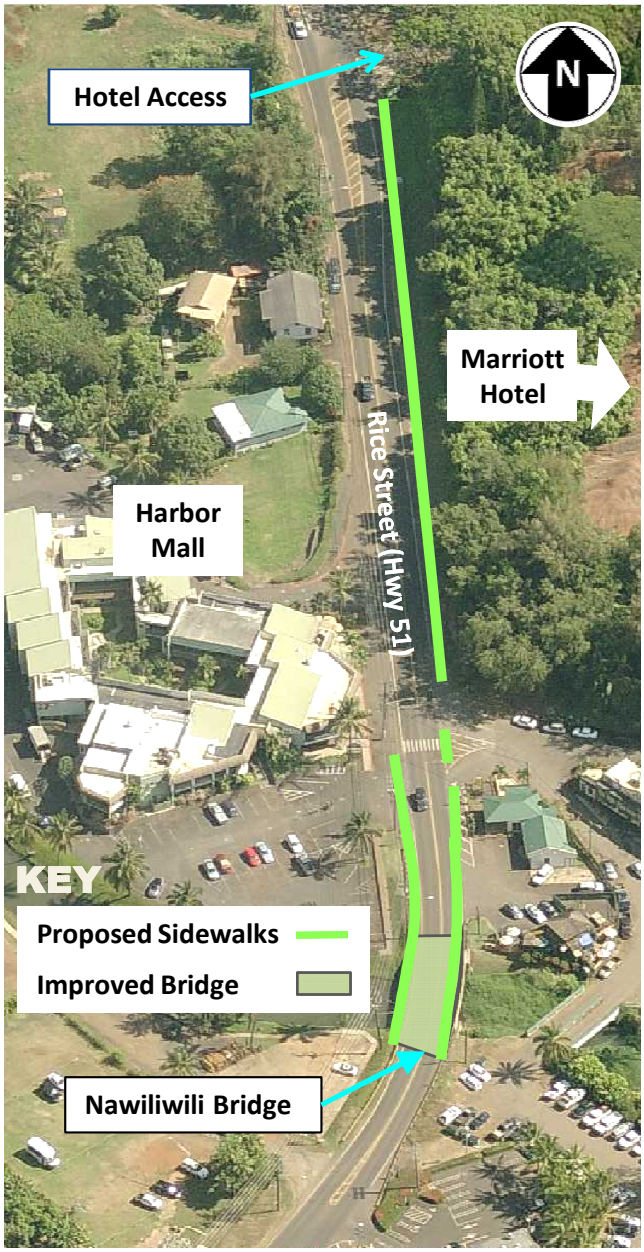
Along this section of Rice Street, pedestrians walk on paved shoulders between the harbor and hotel. There are areas that are narrow for pedestrian use, including crossing Nawiliwili Bridge. The existing bridge does not appear to have available width to accommodate pedestrian facilities.

Potential Solutions

The site would benefit from improved pedestrian connections between the harbor, and popular destinations such as shopping, services, and the hotel. A sidewalk is recommended to be installed on the eastside of the roadway from Nawiliwili Bridge to the hotel access and on the west side from Nawiliwili Bridge to Harbor Mall. Completing this connection would necessitate replacement or improvements to Nawiliwili Bridge because the existing bridge is too narrow for the addition of sidewalks or wider shoulders.

In addition, warning signs should be placed along Rice Street to improve motorist awareness of the presence of pedestrians along and crossing the roadway.

Extending the sidewalk all the way to Lihue Town could be beneficial and should be considered when funding is available.



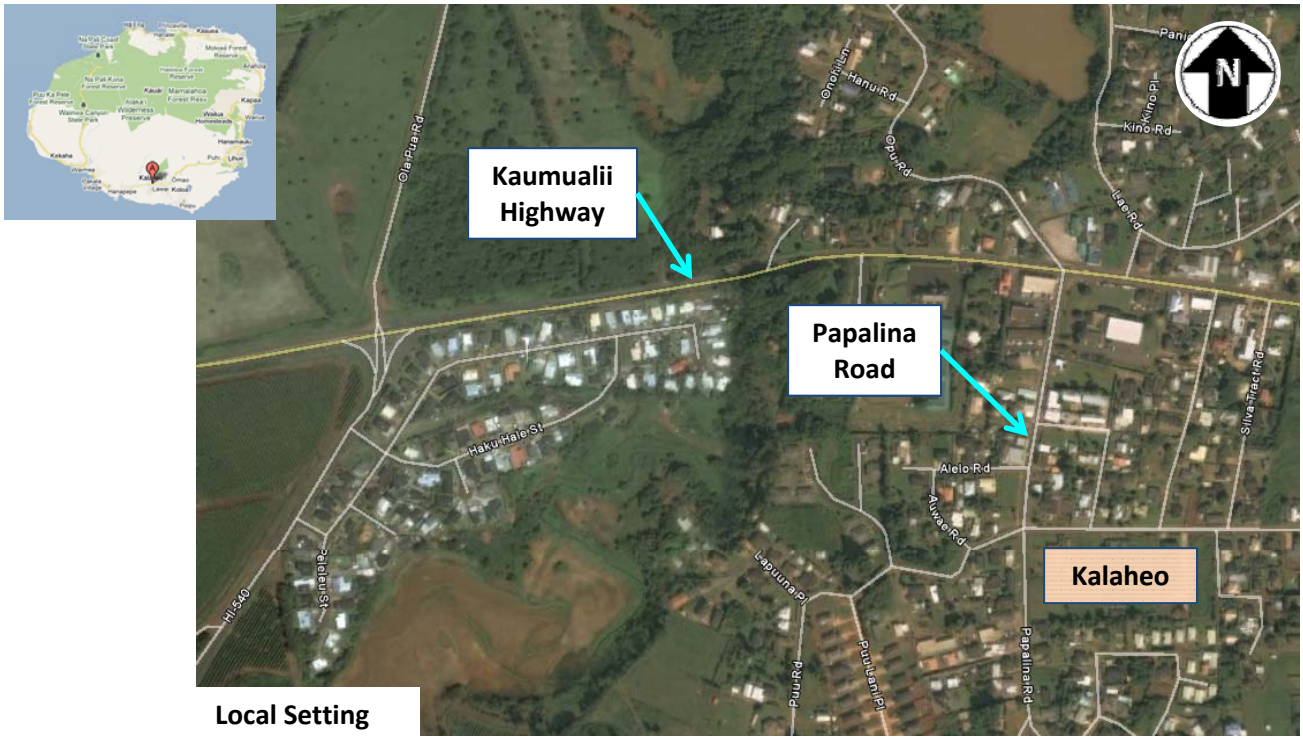
Potential Sidewalks and Bridge Improvements

Cost Estimate

$9,459,000

Kaumualii Highway at Papalina Road Intersection
Kalaheo, HI

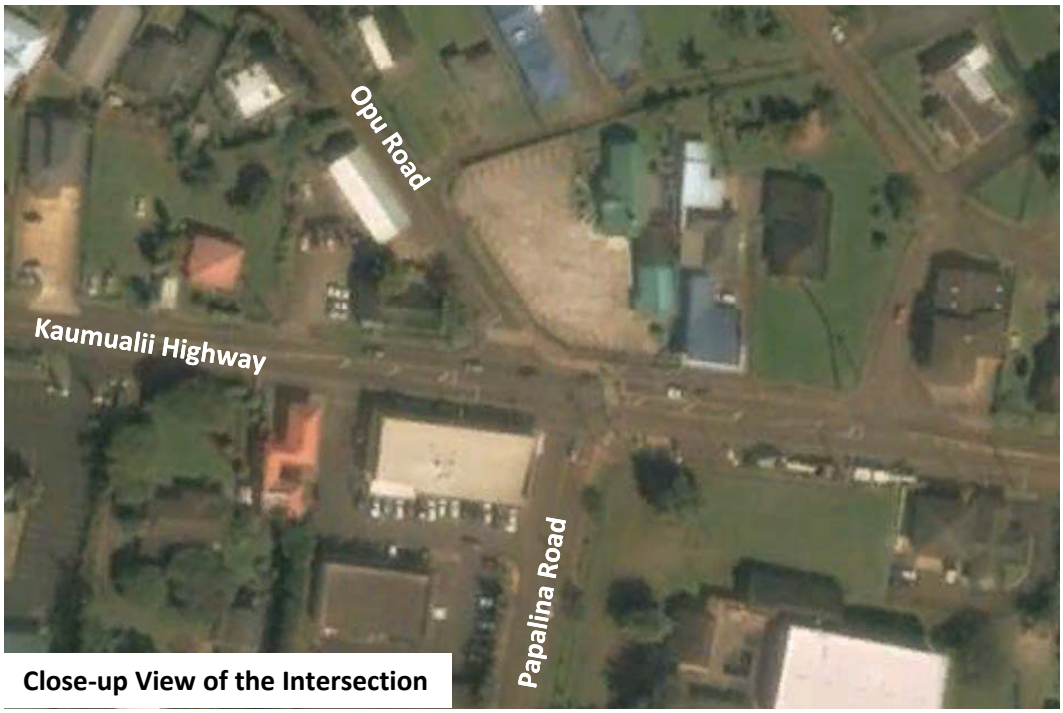
K5



Local Setting

Description

In Kalaheo, HI, Kaumualii Highway has 4'-8' paved shoulders on both sides of the highway. The intersection of Kaumualii Highway and Papalina Road is the only signalized intersection in Kalaheo town. There have been pedestrian crashes at this intersection.



Close-up View of the Intersection

Kaumualii Highway at Papalina Road Intersection
Kalaheo, HI

K5

Analysis

There were four crashes recorded at this intersection between 2004 and 2008. Three out of the four crashes involved a pedestrian crossing in the crosswalk. The fourth crash resulted from a motorist running off the roadway. All crashes occurred on a clear day during daytime.

Potential Solution

The site could benefit from helping pedestrians determine when it is safe to cross by installing pedestrian countdown timers at the intersection. Results from a San Francisco study shows that the crash reduction factor (CRF) is 25% after pedestrian countdown signals were installed. High visibility crosswalk markings and advanced warning signs could also be installed to help improve motorist awareness of pedestrians.

Examples of Advanced Warning Signs

Source: MUTCD

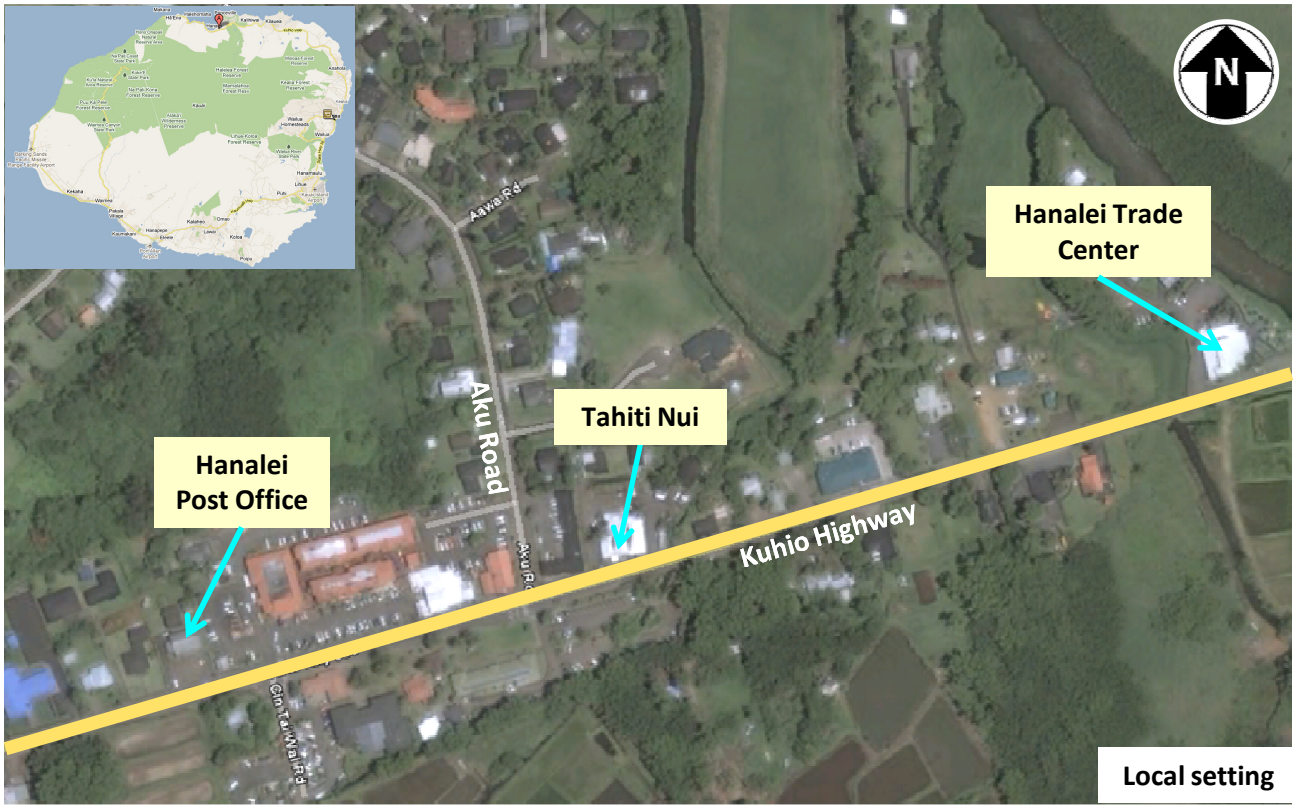
Pedestrian Countdown Timer Example

Cost Estimate

$8,000

Kuhio Highway K6

Between Aku Road and Hanalei Dolphin Center
Hanalei, HI



Description

Kuhio Highway in Hanalei, HI is the primary access road through town. Vehicular traffic on this facility is relatively high. From the Hanalei Post Office to the Hanalei Trade Center, the shoulders on both sides of Kuhio Highway are either 1' to 2' paved or 6' grass shoulders (see photo below). The unpaved areas sometimes have overgrown tall grass. The posted speed limit is 25 mph.

Analysis

As mentioned in the *Kuhio Highway (Route 560) Historic Roadway Corridor Plan 2005* and the *North Shore Path Alternatives Report*, there is a desire to create a safe, pedestrian-friendly environment along Kuhio Highway through the Hanalei Town Center. Improvements should be pedestrian-oriented through Hanalei Town Center (Hanalei Post Office to Hanalei Trader), where commercial and public facilities occur.

Kuhio Highway across from Tahiti Nui

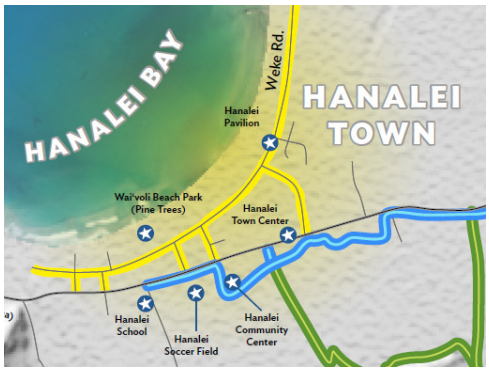
Kuhio Highway K6

Between Aku Road and Hanalei Dolphin Center

Hanalei, HI

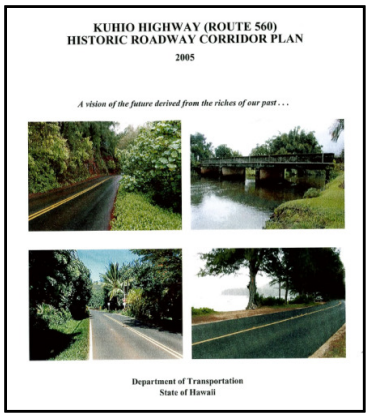
Potential Solution

The site would benefit from improved pedestrian accommodation. As mentioned in the *Kuhio Highway (Route 560) Historic Roadway Corridor Plan 2005* and the *North Shore Path Alternatives Report*, the design of any pedestrian facilities should reflect the small town/rural character of Hanalei. The recommendation is the construction of a shared use path between the Hanalei Post Office and the Hanalei Trade Center, separated from road travelway where possible. The improvement would create a safer pedestrian environment and is an appropriate alternative to a sidewalk. The path should be constructed of materials that are consistent with the rural character of the area and meets ADA standards. Additional signage or markings for vehicles and pedestrians should be considered, as necessary.

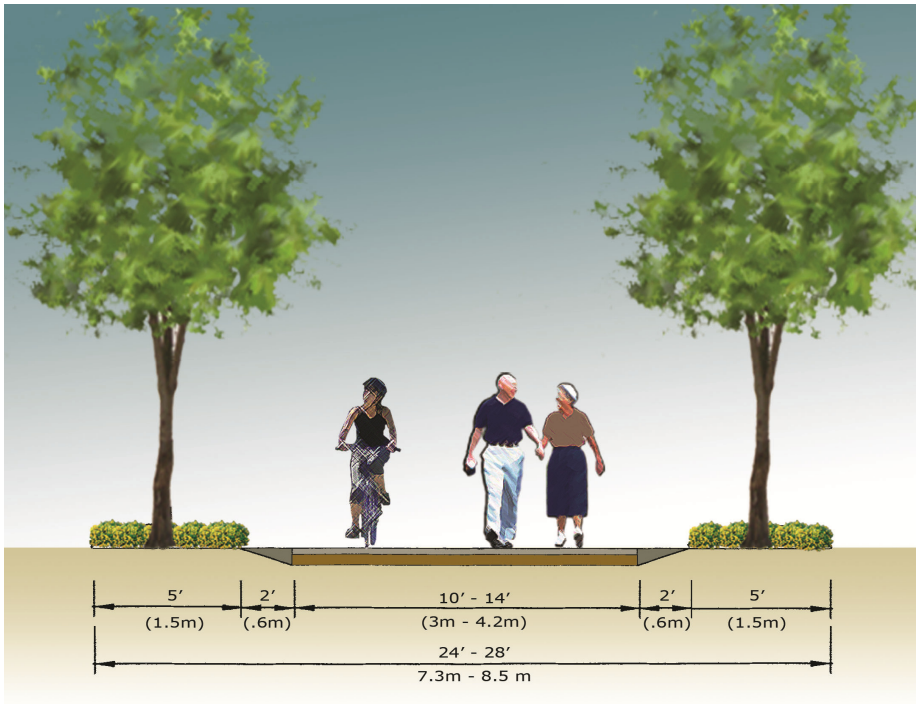


North Shore Path, Alternatives Report, 2012

It should be noted that the existing right-of-way width, historic road pavement width, and road alignment should be retained. In 2003, Route 560 was approved for placement on the Hawaii State Register of Historic Places (SRHP) and in 2004, it was placed on the National Register of Historic Places (NRHP).



Kuhio Highway (Route 560) Historic Corridor Plan, 2005



Conceptual Sketch of a Shared Use Paved Pathway

Cost Estimate

$329,000

Kamehameha Highway at Pualalea Street

Kahuku, HI

O1

Local setting

Description

Kamehameha Highway is the only arterial through the Kahuku community. It is a four-lane highway. The posted speed limit near Pualalea Street is 35 mph. There is no sidewalk on both sides of the highway. Pedestrians have to walk on the 4-foot shoulders or the grass area. The intersection of Pualalea Street and Kamehameha Highway is a major intersection for the community. It is not only an access point for motorists to get onto Kamehameha Highway, but also one of the few crossings for pedestrians to go to the bus stop, post office, clinic, restaurants, and grocery stores that are located on the other side of the highway.

Looking West at the intersection of Kamehameha Highway and Pualalea Street

Kamehameha Highway at Pualalea Street

Kahuku, HI

O1

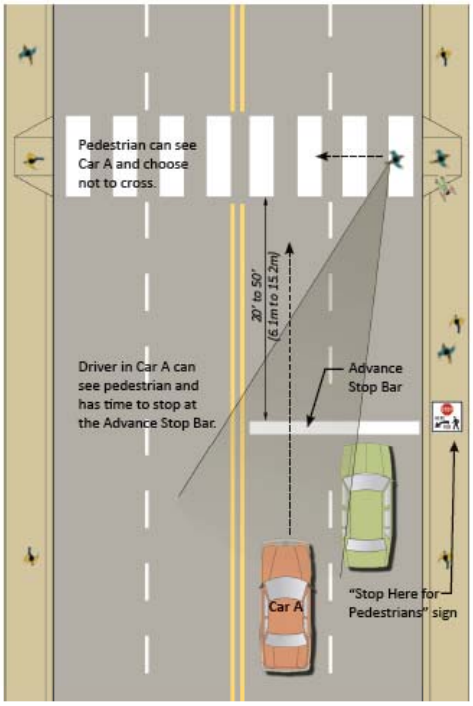
Analysis

Between 2004 and 2008, there were five pedestrian crashes, including one fatal pedestrian crash, that occurred at the intersection of Kamehameha Highway and Pualalea Street. The crashes took place during the day while pedestrians were crossing within the crosswalks. Unsignalized pedestrian crosswalk and advance warning signs are not installed on site. Given that information, it is likely that drivers are not expecting crossing pedestrians.

Potential Solution

The site would be improved by increasing motorists' awareness of the pedestrian crossing with the installation of unsignalized pedestrian crosswalk and advance warning signs. The signs will alert motorists in advance of crosswalks and remind them to be prepared to stop for pedestrians.

In addition, the site could be enhanced by relocating the stop bar further away from the crosswalk. Relocating the stop bar further away from the crosswalk will allow motorists to have a better view of the crosswalk and pedestrians in the crosswalk.



An advance stop bar gives both pedestrians and motorists better visibility.

R1-5b

R1-5c

W11-2

W16-9P

Source: MUTCD

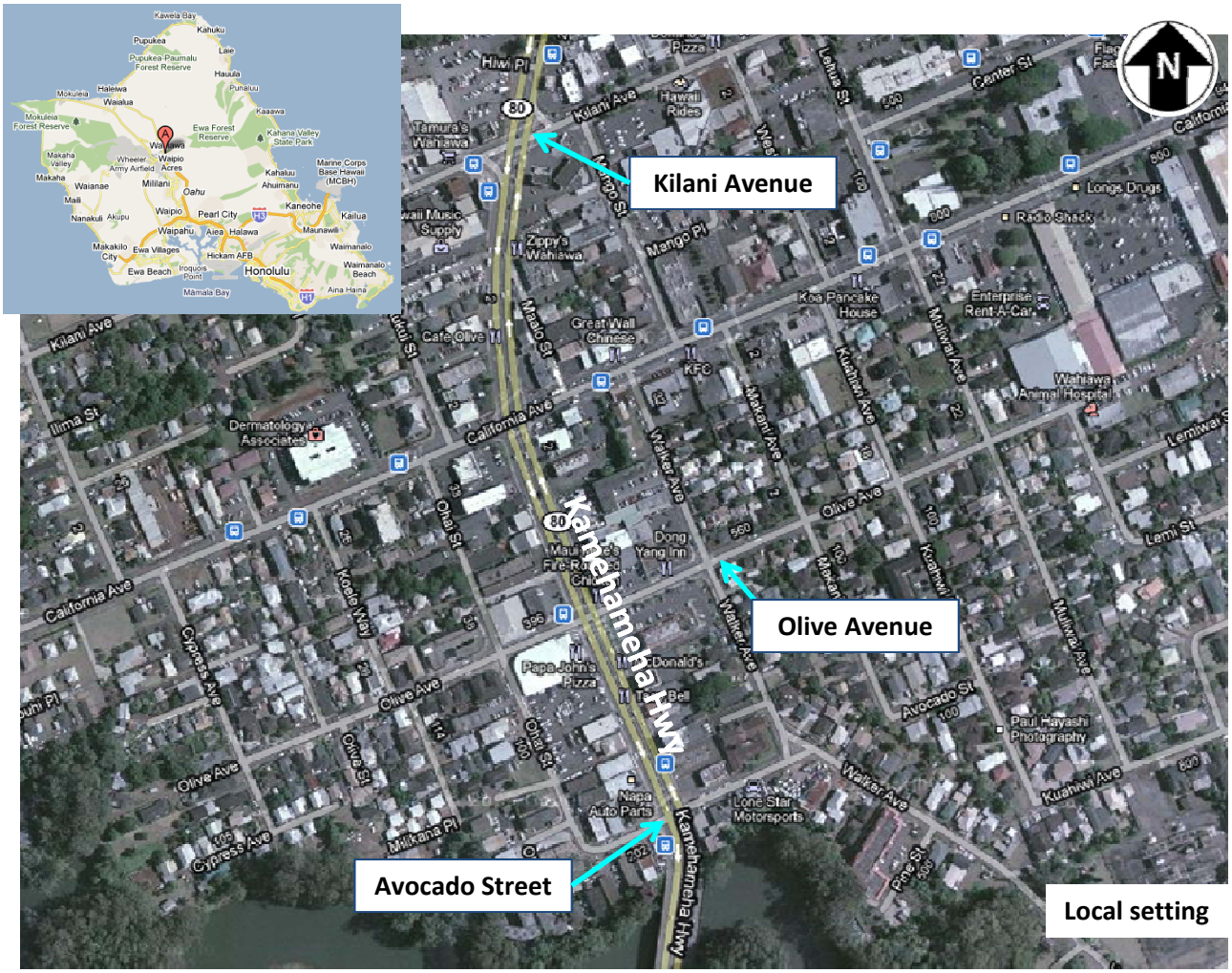
Cost Estimate:

$3,000

Kamehameha Highway

O2

Between Avocado Street and Kilani Avenue
Wahiawa, HI



Description

Kamehameha Highway has sidewalks on both sides between Avocado Street and Kilani Avenue in Wahiawa, HI. Currently, there are no midblock crossings on this section of the highway; all four existing crossings are at signalized intersections, which are between 570' to 740' apart. The roadway experiences considerable vehicular traffic as it connects to the H-2 freeway to the south.

Analysis

Between 2004 and 2008, there were ten pedestrian crashes that occurred on this section of Kamehameha Highway. Six of them occurred at the intersection of the highway and Olive Avenue. Most crashes occurred in the crosswalk when there was a conflict between turning vehicles and pedestrians crossing. Left turns from Kamehameha Highway onto Olive Avenue are protected but vehicles are also allowed to make left turns on green when it's permissive. Left turns from Olive Avenue onto Kamehameha Highway are permissive on green.

Kamehameha Highway

O2

Between Avocado Street and Kilani Avenue
Wahiawa, HI

Potential Solution

The site would benefit from installing additional signage that can remind turning drivers of the presence of pedestrians when they are making a right turn or a permissive left turn. A review of signal phasing should be conducted to explore whether or not the permissive left turn movement is needed or if it could be handled by a longer phase of protected left turn movement.

Looking north on Kamehameha Hwy

The existing public educational program "Walk Wise Hawaii" would also be an effective solution to address pedestrian safety concerns in this area. Walk Wise Hawaii is an educational program of the State DOT, which works through community partnerships, presentations, and the media to educate pedestrians and drivers on safe walking and driver awareness of pedestrians. This program operates with grants from the National Highway Traffic Safety Administration and currently has partnered with many key businesses, community organizations, and government agencies. An important and powerful element of the outreach is the Walk Wise Hawaii Pedestrian and Driver Pledges. The audience that takes the pledge is asked to share what they have learned with at least one member of their family. Outreach events and presentations done by Walk Wise Hawaii speakers at various elementary, middle, and high schools, as well as community centers, senior centers, and businesses within the neighborhood are strongly recommended.

Walk Wise Hawai'i

Walk Wise Hawai'i

PEDESTRIAN PLEDGE

As a good pedestrian, I will always look *LEFT-RIGHT-LEFT* before crossing and *CONTINUE LOOKING* while crossing the street.

As a good pedestrian, I will *MAKE EYE CONTACT* with drivers whenever possible.

Cost Estimate

$405,000

Waialae Avenue at Hunakai Street
Honolulu, HI

O3

Description

The signalized intersection of Waialae Avenue and Hunakai Street is situated beneath the H-1 freeway, which is elevated in this area of Honolulu (see image below). The intersection is surrounded by many services, including restaurants, supermarkets, gas stations, and Kahala Mall Shopping Center. The intersection has marked crosswalks and includes sidewalks on both sides of Waialae Avenune and Hunakai Street. Median islands are provided in the middle of Waialae Avenue and refuge islands (pork chop islands) are located at the makai side of the intersection.

Pedestrian walk signals are installed at intersection crosswalk locations, with the exception of the crosswalks between the refuge island and the sidewalk on the makai side. Left-turns/U-turns from Waialae Avenue are protected, while left-turns from Hunakai Street onto Waialae Avenue are permissive.

Waialae Ave. / Hunakai St. Intersection (looking mauka)

Waialae Avenue at Hunakai Street
Honolulu, HI

O3

Analysis

Between 2004 and 2008, six pedestrian crashes occurred at the subject intersection, including two fatal crashes. The majority of pedestrian crashes occurred between vehicles turning from Hunakai Street and pedestrians crossing Waialae Avenue. It has been observed that traditional text-based pedestrian walk signals are still in place at the intersection.

Example of Existing Traditional Pedestrian Signal

Potential Solution

The intersection could be improved by replacing the traditional pedestrian walk signals with new pedestrian countdown timers. Countdown timers provide pedestrians with better information to make decisions in crossing the street. Results from a San Francisco study indicates that there is a crash reduction factor of 25% after countdown signals are installed (ref. PBIC). In this location, countdown timers can invite pedestrians to stop on the median island, and wait for the next signal phase if they find the time left to be too short to finish crossing.

The intersection could also be improved by installing an additional signal for the crosswalks between the refuge island and the sidewalk on the makai side of the intersection. The pedestrian signal could be set to be activated by the pedestrian so that the impact to the right-turn traffic could be minimized.

Example of the New Pedestrian Countdown Timer

Looking mauka from Hunakai Street

Cost Estimate:
$12,000

Fort Weaver Road and Makule Road

O4

Ewa Beach, HI

Local Setting

Description

The Fort Weaver Road and Makule Road intersection in Ewa Beach, HI is unsignalized. The intersection is stop-controlled on Makule; there is a stop bar northbound on Fort Weaver Road, but none southbound. The leg east of Fort Weaver Road is a one-way vehicle entrance to Ilima Intermediate School Circle (see photos). Students typically walk along Papipi Road and cross Fort Weaver Road at the signalized intersection. If they encounter a red light, the students head southbound on Fort Weaver Road and cross at the Makule Road intersection. In 2010, the State DOT installed 4 pedestrian countdown timers at the intersection with Papipi Road.

Fort Weaver and Makule Road, Unsignalized Intersection, looking north

Fort Weaver Road and Makule Road

O4

Ewa Beach, HI

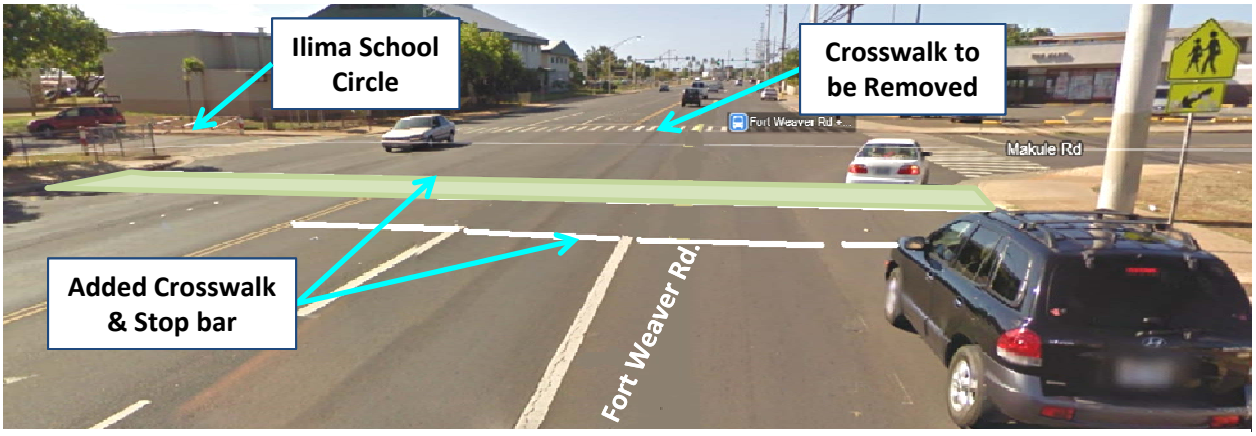
Analysis

Out of the 11 pedestrian crashess on Fort Weaver Road, which occurred between 2004 and 2008, four of them occurred while pedestrians crossed near the crosswalk at Makule Road. With the current crosswalk layout, students cross Makule Road, then Fort Weaver Road and possibly the school access road before entering the school. Reducing the number of crosswalks that students must negotiate on their way to and from school would reduce their exposure to traffic and create safer conditions.

Potential Solution

The site would benefit from relocating the crosswalk across Fort Weaver Road to the other side of the intersection. Relocating the crosswalk to this new location, students would have a safer and more direct connection to access the school grounds. A traffic study should be conducted in the near future to determine if traffic signals are warranted at this intersection.

Additional school-related traffic signage and higher visibility crosswalk markings are also recommended to increase motorist awareness of students crossing the highway.



Potential solution for the Makule Road/Fort Weaver Rd intersection - looking southbound

Cost Estimate

$504,000

Farrington Highway
Nanakuli, HI

O5

Description

In Nanakuli, HI, Farrington Highway has narrow paved shoulders and no sidewalks. Nanakuli Intermediate and High School students often stand in the travel way waiting for the bus because the shoulder is too narrow.

The State DOT has indicated that they intend to add left turn lanes on Farrington Highway at Nanakuli Avenue and Haleakala Avenue. The narrow shoulders leave little space available for widening the travel way without acquiring new right-of-way.

In 2010, the State DOT installed pedestrian countdown timers at intersections along Farrington Highway between Nanakuli Avenue and Hakimo Road.

Farrington Highway
Nanakuli, HI

O5

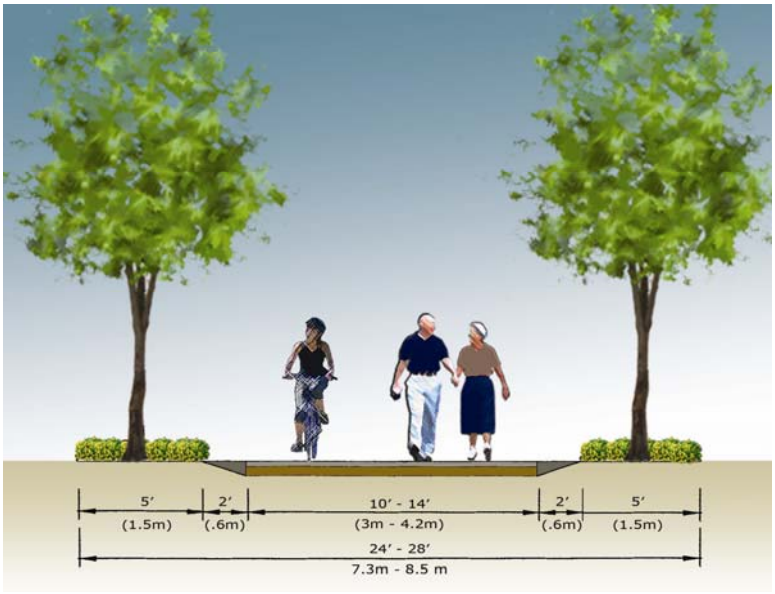
Analysis

Local residents lack a dedicated path to walk/bike. It would be preferable for the community commuters to walk/bike on a facility separated from vehicular traffic. The new facility would especially benefit the town of Nanakuli because services are spread along Farrington Highway.

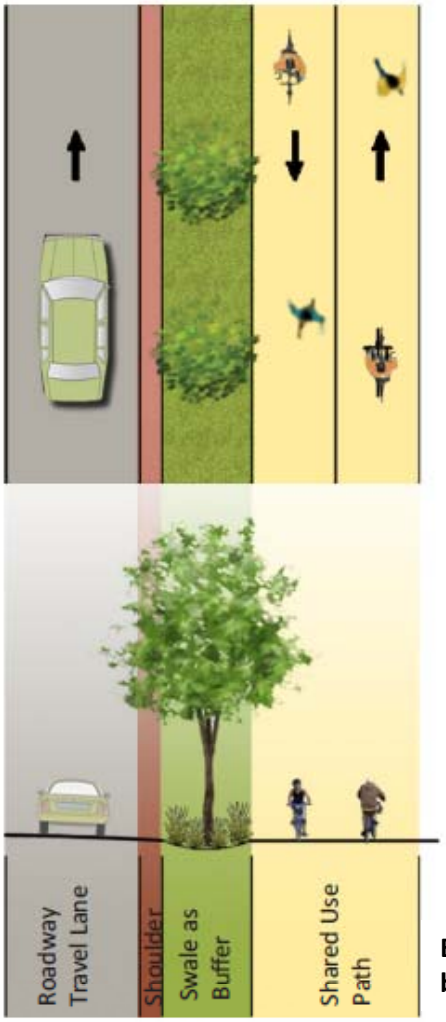
Potential Solution

The site would benefit from the construction of a wide, multi-use asphalt pathway along Farrington Highway. This would provide the local students and residents with a access route to their school or other local destinations (see examples below).

Coordination with the Leeward Bikeway Project is necessary to ensure smooth connection with its planned facilities.



Conceptual Sketch of a Multi-Use Paved Pathway



Buffers between shared use paths and roadways should be a minimum of 5' wide.

Cost Estimate

$7,905,000

Farrington Highway

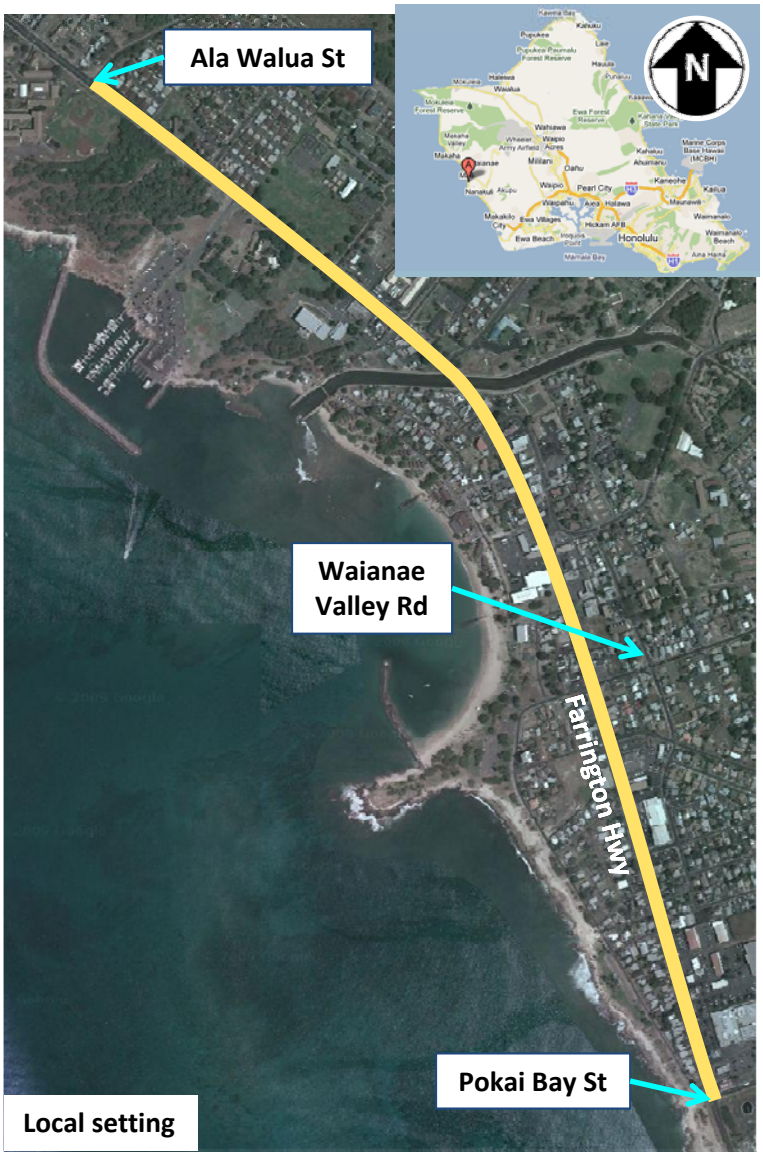
Between Pokai Bay Street and Ala Walua Street
Waianae, HI

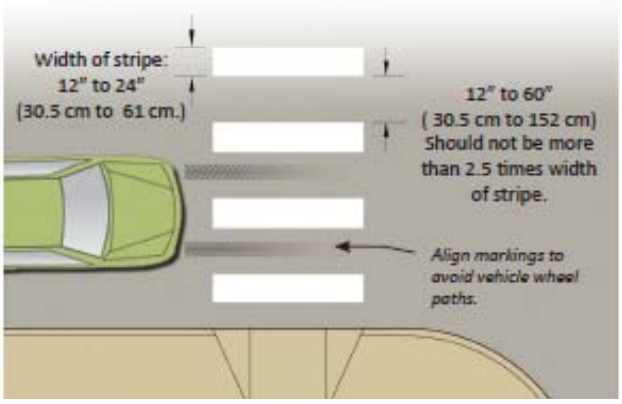
O6

Description

From Pokai Bay Street to Waianae Valley Road in Waianae, HI, Farrington Highway (Hwy 93) is bordered by a sidewalk on the mauka side, and a grass or paved shoulder on the makai side of the highway. From Waianae Valley Road to Ala Walua Street, there are sidewalks are on both sides of Farrington Highway. Crosswalks are provided along the highway; their spacing varies greatly.

In 2010, pedestrian countdown timers were installed at seven signalized intersections along this section of Farrington Highway. An ongoing State DOT restriping project aims at making crosswalks safer by relocating stop bars 30' back of crosswalks and installing advance pedestrian warning signs.





Clearly mark all pedestrian crosswalks

Sidewalks along Farrington Highway

Farrington Highway

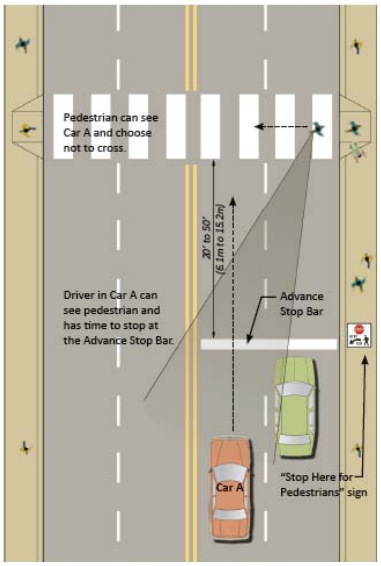
O6

Between Pokai Bay Street and Ala Walua Street
Waianae, HI

Analysis

Between 2004 and 2008, there were 22 pedestrian crashes that occurred along the study segment, with 15 pedestrian crashes occurring in the northern half mile approaching Ala Walua Street. The majority of pedestrian crashes occurred while the pedestrians were crossing within the crosswalks. Given that information, the installation of additional marked crosswalks may not be an appropriate countermeasure. crashes that occur in the less developed parts of town are likely due to drivers traveling at higher speeds, and not expecting crossing pedestrians.

The crash data does not reflect the current site condition with recent improvements by the State DOT. Results from a San Francisco study shows that the crash reduction factor (CRF) equals 25% after pedestrian countdown signals were installed. In addition, relocating the stop bars further away from the crosswalks will allow motorists to have a better view of the crosswalks and pedestrians in the crosswalk. Therefore it is recommended that the site be monitored to determine if recent improvements have improved pedestrian safety at this location.



An advance stop bar gives both pedestrians and motorists better visibility.

Potential Solution

In addition to the State DOT's recent improvements, this section of Farrington Highway could be further improved by utilizing strategies that will increase pedestrian visibility with additional signage and markings, larger signs, and improved lighting.

An enforcement program and the existing public educational program "Walk Wise Hawaii" would also be an effective solution to address pedestrian safety concerns in this area. Walk Wise Hawaii is an educational program of the State DOT, which works through community partnerships, presentations and the media to educate pedestrians and drivers on safe walking and driver awareness of pedestrians. Outreach events and presentations done by Walk Wise Hawaii at various elementary, middle, and high schools, as well as community centers, senior centers, and businesses within the neighborhood are strongly recommended.

Pedestrian Countdown Timer Example

Walk Wise Hawai'i

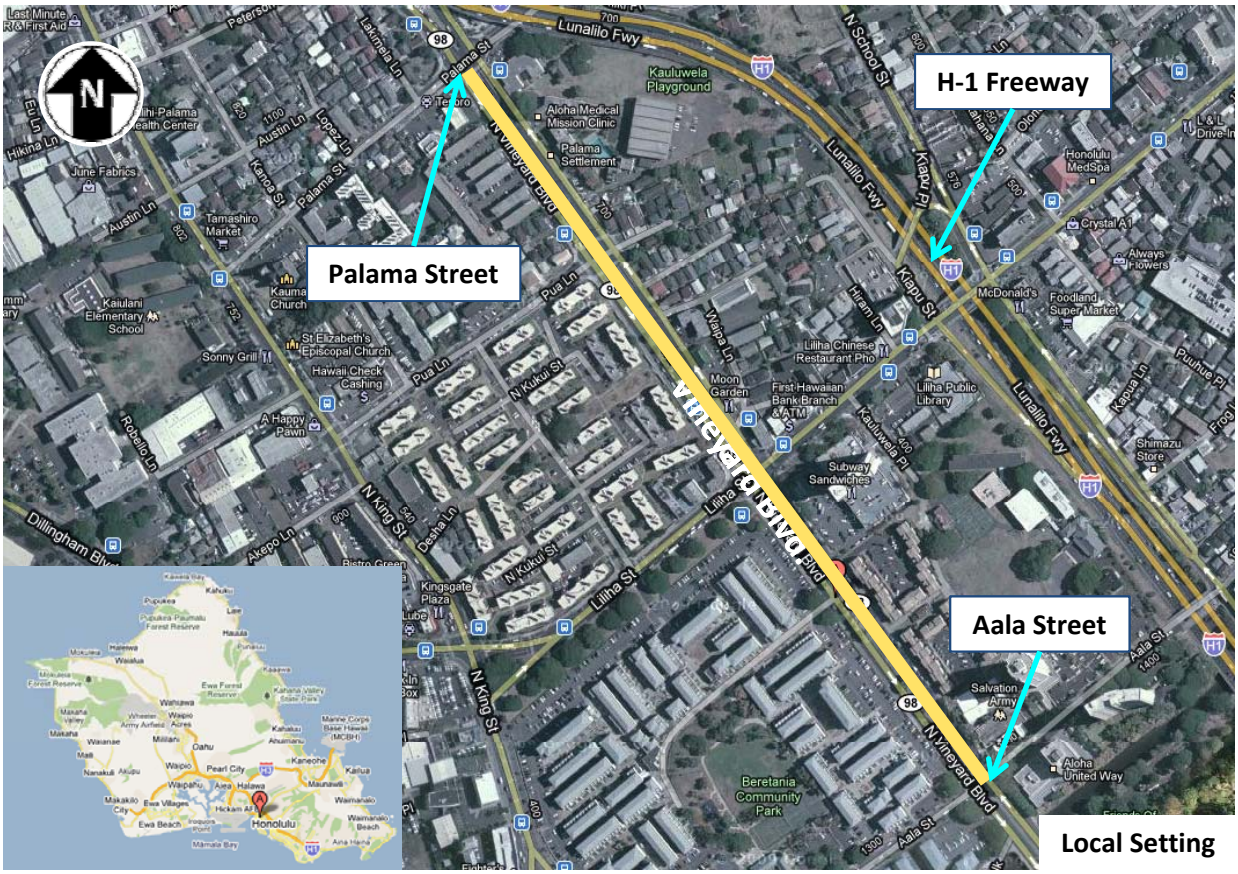
Cost Estimate:

$20,000

Vineyard Boulevard

Between Palama Street and Aala Street
Honolulu, HI

O7



Description

In Honolulu, HI, Vineyard Boulevard is a divided principal arterial with a 30 mph posted speed limit. There are sidewalks on both sides of the street with a median refuge. A fence along the grass median helps prevent jaywalkers from crossing outside of marked crosswalks. There is high pedestrian activity in this commercial/residential neighborhood. In 2010, the State DOT installed pedestrian countdown timers at all intersections in the stretch of roadway.

Analysis

Crash data indicates that conflicting movements of turning vehicles and pedestrian crossings, and pedestrians crossing outside of a crosswalk or against the walk signal were primary factors involved in the 13 pedestrian crashes that occurred within this section of Vineyard Boulevard between 2004 and 2008. Note that the effectiveness of the State DOT's recent improvements could not be measured since the crashes were recorded between 2004 and 2008. Therefore, this site should be monitored to determine if the improvements help reduce the number of pedestrian crashes at this location.

Vineyard Boulevard

O7

Between Palama Street and Aala Street
Honolulu, HI

Potential Solution

This section of Vineyard Boulevard could be further enhanced through signal modification to convert permissive left turns to protected only left turns at specific intersections and/or to include a leading pedestrian interval when the technology is available within the State DOT. A leading pedestrian interval would enable the walk signal several seconds before the green traffic signal, which would allow pedestrians to enter the crosswalk before vehicles are allowed to make the permissive left-turn. This would make pedestrians more visible to motorists. Further analysis is required to verify whether or not the modifications are warranted and potential impacts could be mitigated.

Additional signage that can remind turning drivers the presence of pedestrians would help improve driver awareness of pedestrian crossing when they are making a right turn after stop or a permissive left turn.

The existing public educational program "Walk Wise Hawaii" would also be an effective solution to address pedestrian safety concerns in this area. Walk Wise Hawaii is an educational program of the State DOT, which works through community partnerships, presentations, and the media to educate pedestrians and drivers on safe walking and driver awareness of pedestrians. This program operates with grants from the National Highway Traffic Safety Administration and currently has partnered with many key businesses, community organizations, and government agencies. An important and powerful element of the outreach is the Walk Wise Hawaii Pedestrian and Driver Pledges. The audience takes the pledge and is asked to share what they have learned with at least one member of their family. Outreach events and presentations done by Walk Wise Hawaii speakers at various elementary, middle, and high schools, as well as community centers, senior centers, and businesses within the neighborhood are strongly recommended.

Walk Wise Hawai'i

Cost Estimate

$814,000

Liliha Street at Kukui Street
Honolulu, HI

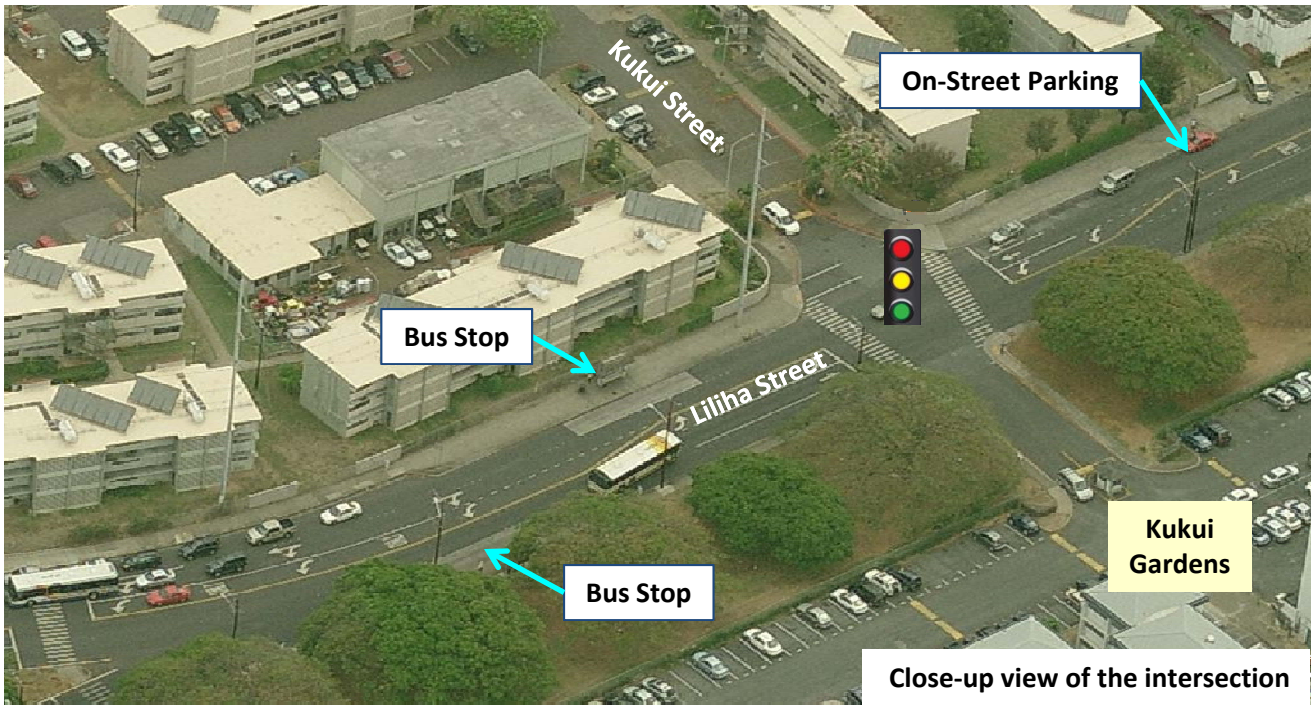
O8

Description

Liliha Street is a major collector that motorists use to access the H-1 freeway to the east. The posted speed limit on Liliha Street is 25 mph and there are sidewalks on both sides of the street. At the intersection of Kukui Street and Liliha Street, there are marked crosswalks, but the intersection is neither stop-controlled nor signalized. There is high pedestrian activity in this neighborhood due to the presence of a community park, church, and the nearby bus stops at the Liliha Street and King Street intersection. On-street parking is allowed on the north side of Liliha Street, however, the State DOT is currently considering modifications to the roadway that may eliminate this condition.

Liliha Street at Kukui Street
Honolulu, HI

O8



Close-up view of the intersection

Analysis

Crash data indicates the intersection area has experienced ten pedestrian crashes, all of which have occurred while pedestrians were in a crosswalk. The presence of crosswalks can give pedestrians a false sense of security in instances where there is no stop control (traffic signal or stop sign) for vehicles. Lack of attention by motorists, on-street parking, and bus maneuvers could be other potential factors that may have contributed to creating the conditions in place today.

Potential Solution

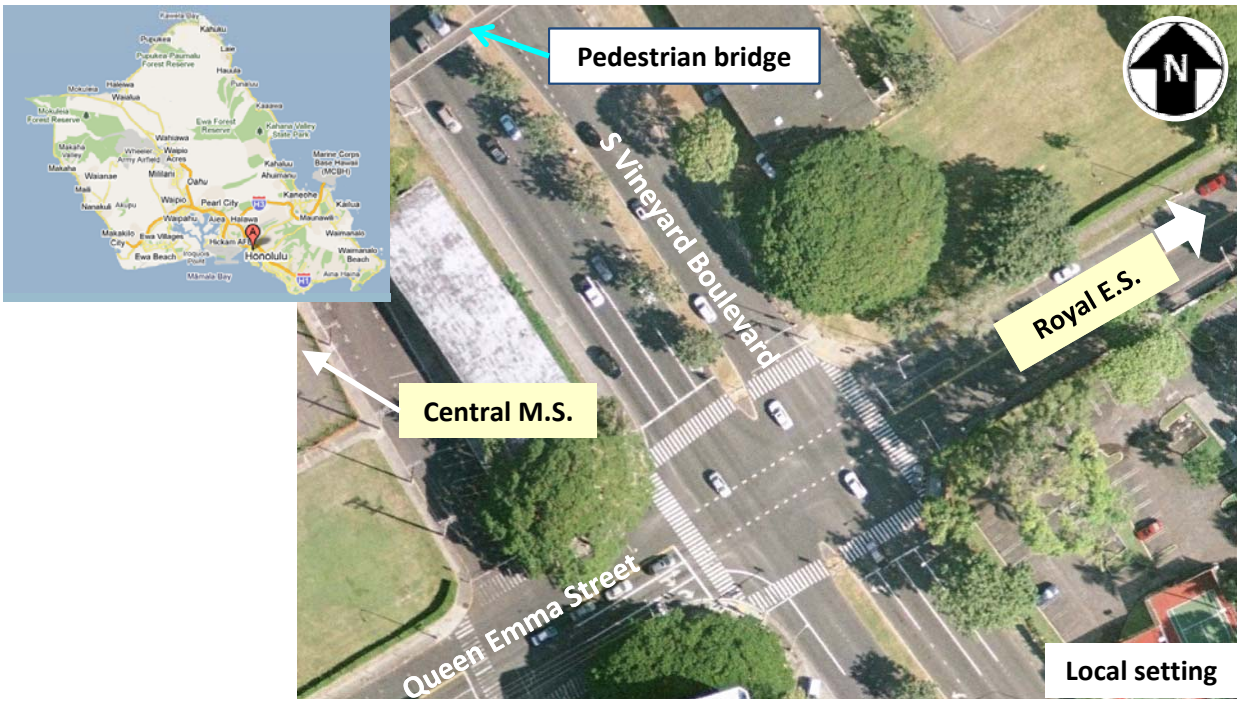
The site would benefit from being improved to a signalized intersection. The installation of traffic signal would provide pedestrians with a dedicated crossing phase, which would result in a safer pedestrian environment, providing definition to both motorists and pedestrians.

Cost Estimate

$502,000

Vineyard Boulevard at Queen Emma Intersection O9

Honolulu, HI



Description

In Honolulu, HI, Vineyard Boulevard is a divided principal arterial with a 30 mph posted speed limit. There is considerable pedestrian activity in the area of the Vineyard Boulevard Queen Emma Street intersection with two schools and senior housing nearby. The intersection is signalized with crosswalks, pedestrian countdown timers, and a median refuge. There is an existing pedestrian bridge 250' north of the intersection with Queen Emma Street that provides pedestrian access between the school campuses.

Analysis

Between 2004 and 2008, crash data indicates that most crashes occurred when there was a conflict between turning vehicles and pedestrians crossing Vineyard Boulevard. Left turns from Queen Emma Street onto Vineyard Boulevard are permissive. Pedestrians involved in these crashes were primarily senior citizens. In 2010, the State DOT completed a project that installed pedestrian countdown timers at this intersection, in addition to eight other locations along Vineyard Boulevard from Palama Street to Punchbowl Street. The current crash data does not reflect this new site condition, therefore it is recommended that the site be monitored to determine if recent improvements have improved pedestrian safety at this location.

Pedestrian Countdown Timer Example

Vineyard Boulevard at Queen Emma Intersection O9

Honolulu, HI

Potential Solutions

This intersection could be further enhanced through signal modification to include a leading pedestrian interval when the technology is available within the State DOT. A leading pedestrian interval would enable the walk signal several seconds before the green traffic signal, which would allow pedestrians to enter the crosswalk before vehicles are allowed to make the permissive left-turn. This technology solution would make pedestrians more visible to motorists and is most effective when restricting vehicles from turning right on red. Converting permissive left turns from Queen Emma Street onto Vineyard Boulevard to protected only left turns could also be considered to avoid the conflicting movements. Another consideration is a review of the signal timing and increasing the pedestrian crossing time. Further analysis is required to verify whether or not the proposed signal modifications mentioned are warranted and potential impacts could be mitigated.

Additional signage reminding turning drivers of the presence of pedestrians would help improve driver awareness of pedestrians when they are making a right turn on red or a permissive left turn.

Median Refuge on Vineyard Boulevard

The existing public educational program "Walk Wise Hawaii" would also be an effective solution to address pedestrian safety concerns in this area. Walk Wise Hawaii is an educational program of the State DOT, which works through community partnerships, presentations and the media to educate pedestrians and drivers on safe walking and driver awareness of pedestrians. This program operates with grants from the National Highway Traffic Safety Administration and currently has partnered with many key businesses, community organizations, and government agencies. An important and powerful element of the outreach is the Walk Wise Hawaii Pedestrian and Driver Pledges. The audience that takes the pledge is asked to share what they have learned with at least one member of their family. Outreach events and presentations done by Walk Wise Hawaii speakers at various elementary, middle, and high schools, as well as community centers, senior centers, and businesses within the neighborhood are strongly recommended.

Walk Wise Hawai'i

Walk Wise Hawai'i PEDESTRIAN PLEDGE

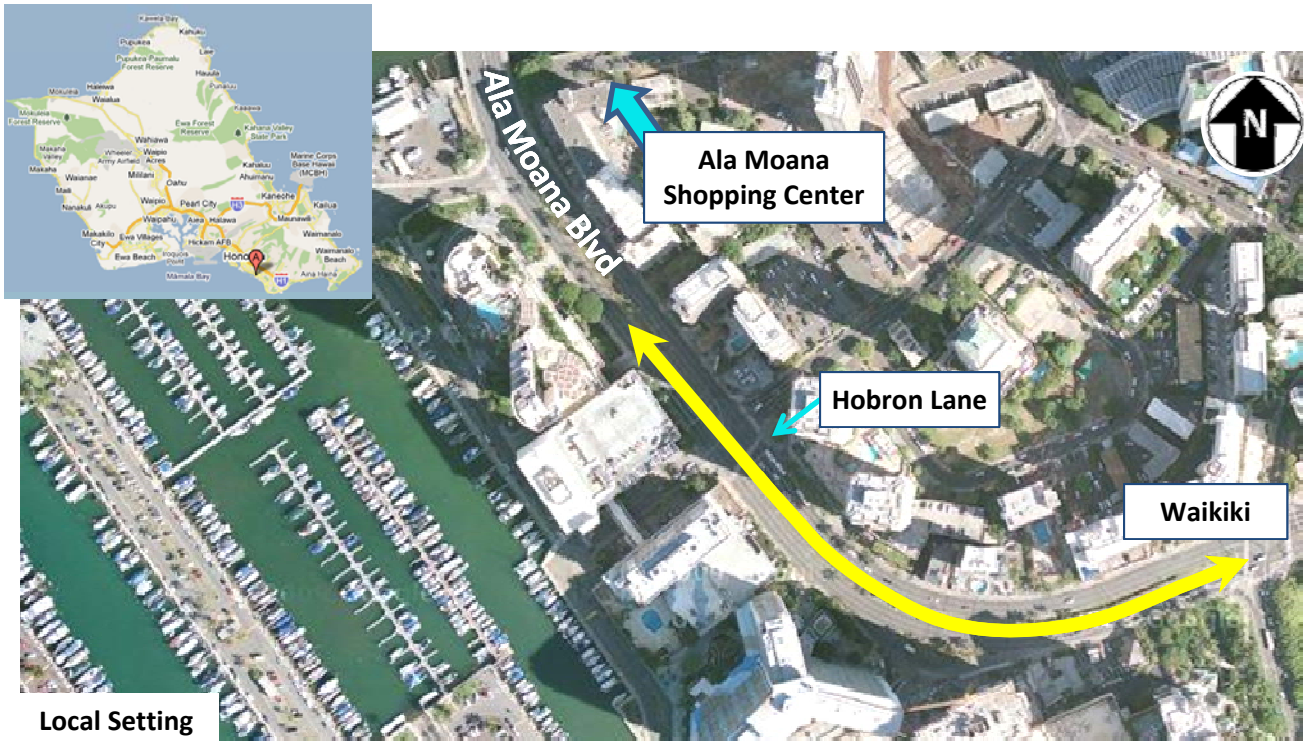
Cost Estimate

$207,000

Ala Moana Boulevard at Hobron Lane Intersection

Honolulu, HI

O10



Local Setting

Description

Ala Moana Boulevard in Honolulu, HI attracts many pedestrians - both locals and visitors. It connects Ala Moana Shopping Center to Waikiki. Ala Moana Boulevard is a divided facility, with a few openings for crossing. Pedestrian traffic crossing Ala Moana Boulevard at Hobron Lane is heavy. Crossing is only allowed on the south side of Hobron Lane at this intersection. The crosswalks have pedestrian signal heads with countdown timers and pedestrian-activated push buttons.

Crosswalk across Ala Moana Blvd at Hobron Lane (looking east)

Ala Moana Boulevard at Hobron Lane Intersection

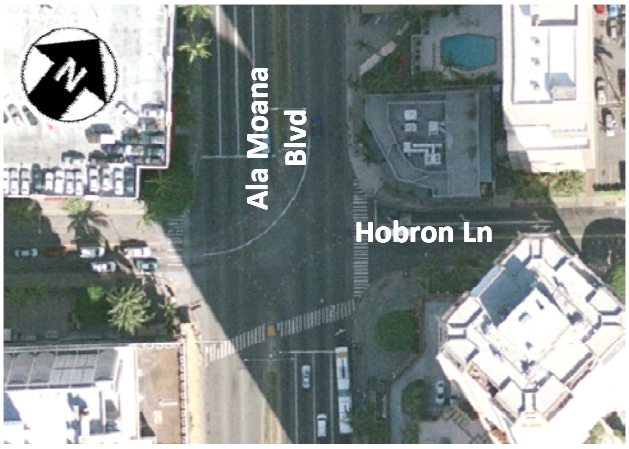
Honolulu, HI

O10

Analysis

Between 2004 and 2008, there were four pedestrian crashes that occurred at this intersection for various reasons while the pedestrian was crossing within the crosswalk. The State DOT has made recent improvements to straighten the crosswalk skew on the south side. The crash data does not reflect this new site condition. Therefore, the site should be monitored to determine if the improvements would help improve the pedestrian environment at this intersection. Completing the intersection with a fourth crosswalk leg was considered, but this would require an additional signal phase and could result in a longer signal cycle.

Because of the heavy turning movement from the dual left turn lane from Hobron Lane onto Ala Moana Boulevard, the left turn movement needs to be a protected only left turn, in which pedestrians are not allowed to cross at the same time. In the case of a permissive left turn, left turn capacity would be significantly reduced and potentially lead to delays and congestion for motorists because drivers would have to yield for pedestrian crossings.



Study Intersection. Note skewed crosswalk across Ala Moana Blvd which has since been straightened.

Potential Solution

The intersection could be further enhanced by conducting a traffic study to determine how to modify the existing signal timing to optimize signals and lengthen pedestrian crossing time along this corridor.

Additional signage that reminds drivers to yield for pedestrians when they are making a right turn could be installed to help improve drivers' awareness of pedestrian crossing.

Looking northeast: Straightened crosswalk across Ala Moana Blvd at Hobron Lane.

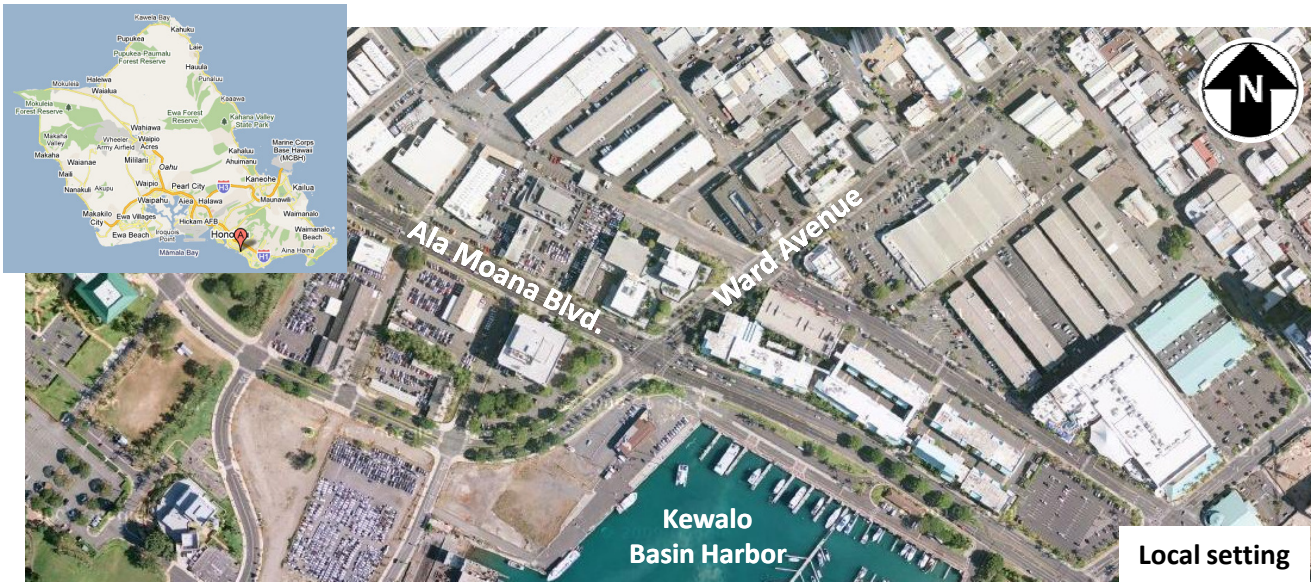
Cost Estimate

$202,000

Ala Moana Boulevard at Ward Avenue Intersection

O11

Honolulu, HI



Local setting

Description

The intersection of Ala Moana Boulevard and Ward Avenue in Honolulu, HI experiences high volumes of traffic and considerable pedestrian volumes. The crosswalks across Ala Moana Boulevard are long and do not have median refuges for crossing pedestrians. The makai side crosswalk at Ward Avenue crosses at a skewed angle, which adds to its length (see photo below).

Ala Moana Blvd/Ward Ave intersection (looking northwest)

Ala Moana Boulevard at Ward Avenue Intersection
Honolulu, HI

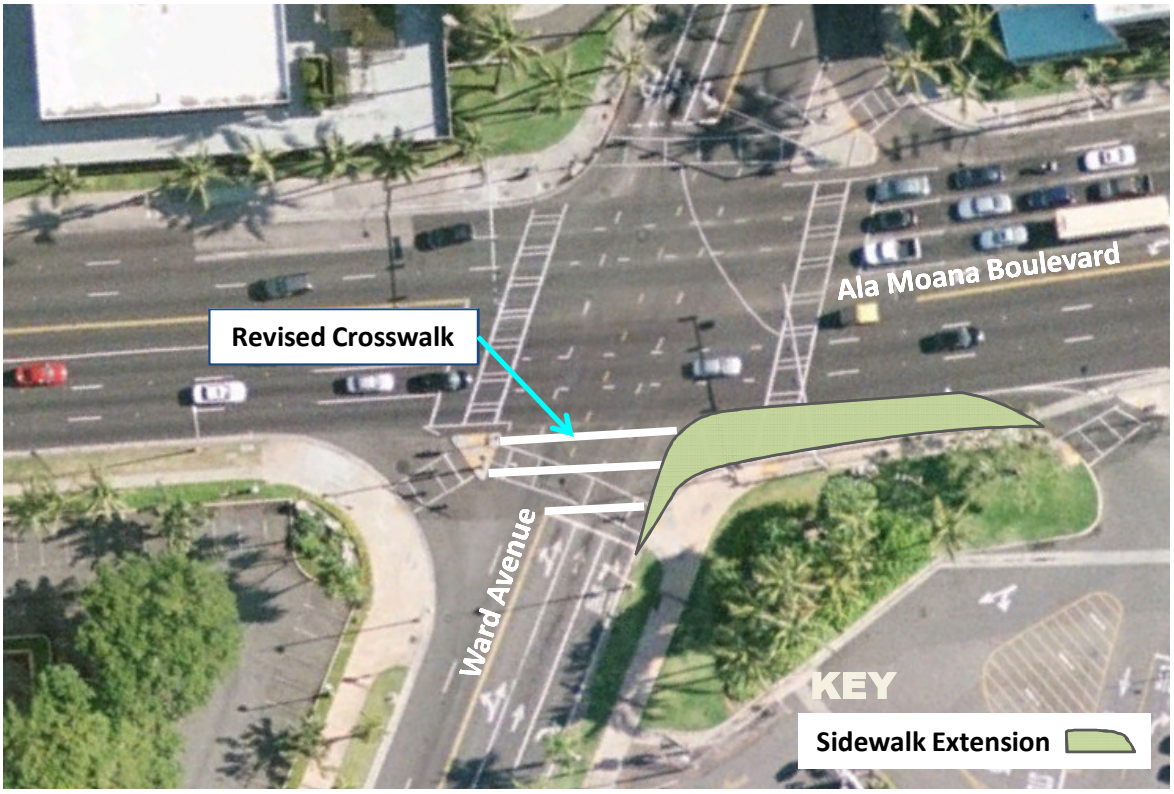
O11

Analysis

The study intersection has drawn numerous complaints from the public. Pedestrians would benefit from shorter crosswalk distances to decrease their walk time and exposure to vehicular traffic. The lane configuration is complex and could be simplified to avoid confusion and driver uncertainty and improve driver/pedestrian interactions.

Potential Solution

The site would benefit from the removal of the dedicated northbound right turn lane. The existing sidewalk could be widened, which would consequently decrease the length of the crosswalks across makai side of Ward Avenue and east side of Ala Moana Boulevard. The existing skewed crosswalk across Ward Avenue could be realigned at a 90-degree angle with the new curb return (see drawing below).



Potential solution showing sidewalk extension and revised crosswalk alignment

Cost Estimate

$239,000

Ala Moana Boulevard

Between Bishop Street and Richards Street
Honolulu, HI

O12

Description

Ala Moana Boulevard in Honolulu, HI experiences high volumes of traffic and considerable pedestrian volumes. There is a sidewalk gap on the makai side of Ala Moana Boulevard between Richards Street and Bishop Street, which is impractical for pedestrians traveling along Ala Moana Boulevard.

Ala Moana Blvd/Bishop Street intersection (looking northeast)

Ala Moana Boulevard

O12

Between Bishop Street and Richards Street
Honolulu, HI

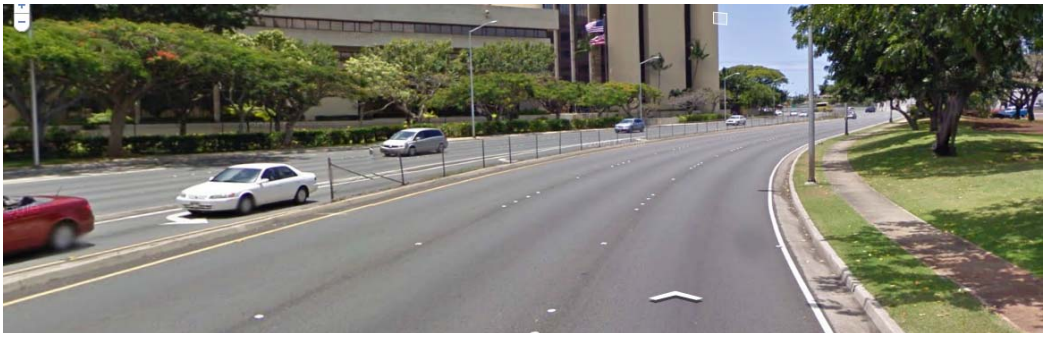
Analysis

Between 2004 and 2008, three pedestrian crashes within the study location occurred. It is unknown as to whether the existing sidewalk gap may have indirectly contributed to the crashes. The crosswalks across Ala Moana Boulevard at each end of the segment provide an accessible route through the area on the mauka side of the street. However, it is often impractical for pedestrians. They would need to cross seven lanes of traffic twice.

Ala Moana Blvd/Richards Street intersection (looking northeast)

Potential Solution

The site would benefit from closing the sidewalk gap on the makai side of Ala Moana Boulevard between Bishop Street and Richards Street. As you can see from the picture on the previous side and above, the route is often used by pedestrians. When pedestrians create a "goat path", sidewalks need to be considered and constructed. The proposed sidewalk will need to incorporate or relocate some existing utilities and signs.



South of Ala Moana Blvd/Richards Street intersection – Sidewalk Exists

Cost Estimate

$108,000

Kalihi Street

O13

Between N. King Street and Dillingham Boulevard
Honolulu, HI

Description

Kalihi Street, between N. King Street and Dillingham Boulevard, passes through a residential area, with sidewalks on both sides of the roadway. Kalihi Street provides a connection between the H-1 freeway and N. Nimitz Highway and experiences considerable vehicular traffic. There are multiple crosswalks along this segment of Kalihi Street. The majority of the intersections are unsignalized and many are not stop-controlled. A few of the crossings have pedestrian advance warning signage. In 2010, the State DOT installed pedestrian countdown timers at the N. King Street intersection. This new condition was not reflected in the available crash data.

Typical crosswalk along Kalihi Street

Pedestrian Countdown Timer Example

Kalihi Street

O13

Between N. King Street and Dillingham Boulevard
Honolulu, HI

Analysis

Eight crashes involving pedestrians occurred on Kalihi Street between 2004 and 2008. Four crashes occurred while the pedestrian was crossing within a marked crosswalk, while three occurred outside of crosswalks. The lack of crosswalks may not be the primary contributing factor, since there are crosswalks at most, if not all, street intersections along Kalihi Street.

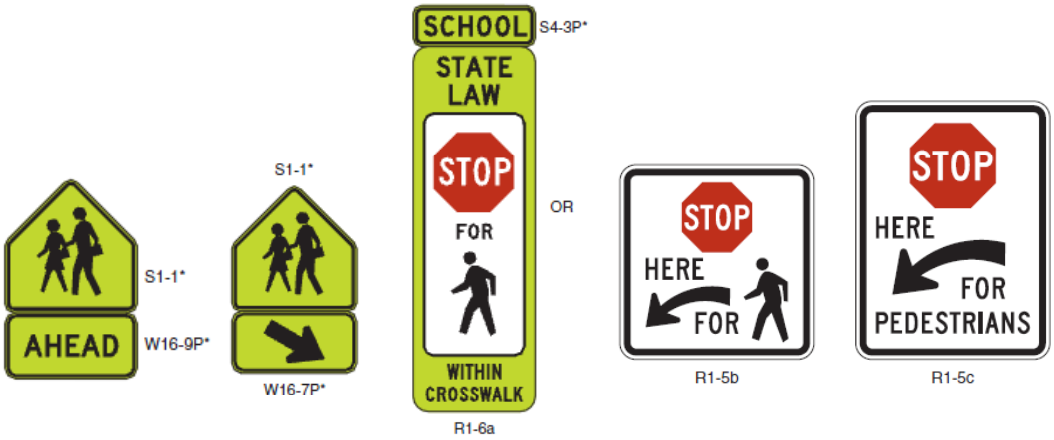
Potential Solution

The site would benefit from the consolidation of some of the crosswalks and the installation of a Rectangular Rapid Flash LED Beacon (RRFB) at the consolidated crosswalk. Studies have indicated that motorist yield rates increased from about 20% to 80% with the use of the RRFB. Currently, the State DOT is in the process of getting FHWA approval to use the RRFB technology. Further studies will be needed to ensure that the RRFB does not conflict with existing signals and is appropriate on Kalihi Street.

Example of the RRFB

The site would also benefit from the installation of enhanced crosswalk markings at all existing intersections. Enhanced crosswalk markings consist of using wider white lines (15” to 24” versus 12”). The replacement or installation of unsignalized pedestrian crosswalk signage and school area signs/in-street signs in school areas compliant with current MUTCD standards would create better visibility for pedestrians.

Traffic calming measures that encourage safe travel speeds along Kalihi Street should be explored. A possible solution, appropriate for this roadway, includes restriping to narrow travel lane widths. Narrower lanes typically encourage motorists to drive slower, as navigating a vehicle within a narrow lane is difficult at higher speeds.



Examples of Unsignalized Pedestrian Crosswalk Signs, School Area Signs, and In-Street Signs in School Areas

Source: MUTCD

Cost Estimate

$52,000

Appendix F

Prioritization Process

Appendix F: Prioritization Process

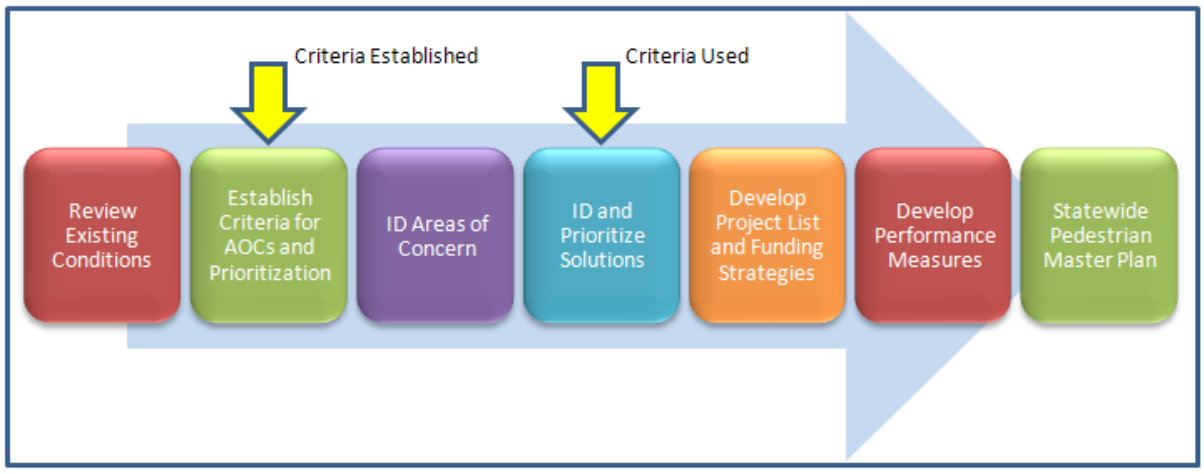
Although the prioritization criteria would be applied later in the planning process, it was important to develop and weight the criteria early to ensure transparency and to provide clear direction relating to the selection of higher-priority projects and programs.

Introduction

This memorandum outlines the process and criteria for prioritization of capital projects and educational and enforcement programs for the Statewide Pedestrian Master Plan (Plan). The purpose of the criteria is to evaluate proposed projects or programs by how they address different stakeholder and community values. The criteria were assigned a weighting indicating importance in coordination with the Technical Advisory Committee (TAC) and the Citizen Advisory Committee (CAC) to determine the collective importance of the criteria to stakeholders. The criteria and weightings were validated with the public through a series of public meetings in July and August 2010 and via the project website. This process shows how both committees would prioritize the projects and programs identified as part of the Statewide Pedestrian Master Plan. These steps are part of the project process outlined in Figure 1.

FIGURE 1

STATEWIDE PEDESTRIAN MASTER PLAN PROCESS



Evaluation Process

A draft framework is proposed to ensure that projects and programs do not falsely rate higher or lower due to the differences in scope, cost, and implementation. It is important to note that the evaluation criteria were created

before projects and programs were developed to guarantee that the evaluation criteria are not tailored or biased towards specific projects or programs.

The process includes five main steps outlined below. It occurs once for each proposed solution.

Step 1 – Develop criteria

Step 2 – Assign weights to the criteria

Step 3 – Rate the projects according to the criteria

Step 4 – Calculate results

Step 5 – Compare and report results

After the criteria were agreed upon by the TAC and CAC, they were weighted by importance by the two groups. Following the weighting exercise, ratings were determined for recommended projects and programs and then weighting was added to the scores. The results of the evaluation were used to develop the prioritized list and shared with the TAC and CAC.

Criteria

The following criteria were used to evaluate and provide detailed analysis on proposed projects and programs to determine how each performs based on project goals.

- Connectivity
- Pedestrian Safety
- Environment
- Land and Access Impacts
- Cost
- Property Impacts
- Pedestrian-Oriented Populations

The criteria were derived from the project scope and goals and were refined based on conversations with the TAC and CAC. These criteria are not listed in any particular order, nor do they reflect a weighting at this time. A weighting exercise was conducted with the TAC and CAC to determine the relative importance of each of the proposed criteria and is discussed in the Weighting Section on page 5.

The criteria are intended to show the advantages and disadvantages of the proposed solutions in relation to each other. Comparisons of the scores for the projects are more important than the scores themselves.

Table 1 describes the criteria and measures used to evaluate projects for the Statewide Pedestrian Master Plan.

TABLE 1
Evaluation Criteria and Measures for Project Solutions

Evaluation Criteria Categories	Criteria	Criteria Description	Evaluation Measures
Connectivity	Pedestrian connectivity to pedestrian attractors	*To what extent does the project provide a direct new or improved connection to pedestrian attractors?* Special attention will be given to pedestrian attractors including: -Schools -Stadiums -Harbors -Hotel Areas -Commercial districts -High Density Residential Areas -Beaches -Parks -Transit stops -Trails	The scale for pedestrian connectivity near attractors is as follows: 5 – The project connects more than three pedestrian attractors 3 – The project connects 1-2 pedestrian attractors 0 – The project does not connect with a pedestrian attractor
	Pedestrian System Gaps	*To what extent does the project fill a sidewalk gap (or address any area where the sidewalk is in need of repair)?* Sidewalk gaps are locations along state highways in urban and rural areas where sidewalks are missing on both sides of the highway. In urban areas, the gaps would be for approximately 1/8 of a mile. In rural areas, the gap would be for approximately 1/2 of a mile. On Kauai, the gap may be 1 mile or less.	The scale for addressing pedestrian system gaps is as follows: 5 – Project addresses more than one gap in the pedestrian system 3 – Project addresses one gap in the pedestrian system 0 – Project does not fill a gap in the pedestrian system

Evaluation Criteria Categories	Criteria	Criteria Description	Evaluation Measures
Pedestrian Safety	Pedestrian Safety	*To what extent does the project address pedestrian safety?* This criterion evaluates the degree to which the recommended projects address pedestrian safety hot-spots. There are two thresholds for urban vs. rural areas, as the likelihood of crashes differs depending on the character of the area.	The scale for pedestrian safety is as follows: 5 – Project addresses multiple pedestrian hot-spot areas: Urban – areas with more than five accidents or more than two fatalities Rural – areas with more than three accidents or two fatalities 3 – Project addresses a few pedestrian hot-spot areas: Urban – areas with between one and five accidents or one and two fatalities Rural – areas with between one and three accidents or one fatality 0 – Project does not address hot-spot area
Environment	Minimize impacts to environmental resources	*Does the project impact mountainous terrains, coastal roads (global warming impacts), cultural and historic resources, threatened and endangered species, or Section 4(f) park resources?* This criterion evaluates the degree to which the recommended projects impact known sensitive natural and built environments, including historic resources and park lands.	The scale for impacts to environmental resources is as follows: 5 – The project does not impact sensitive environmental resources 3 – The project has few impacts that can be mitigated and/or minimized 0 – The project has impacts that cannot be mitigated or minimized Note that the significance of some environmental resources may be greater than others.
Property Impacts	Minimize impacts to adjacent land	*To what extent does the project impact property?* Acquisition acreage and building impacts are considered land impacts.	The scale for impacts to property is as follows: 5 – The project requires no land acquisition or building impacts 3 – The project has minimal impacts—i.e. it requires 1 land acquisition or building impact 0 – The project has significant impacts—i.e. it requires more than 1 land acquisition or building impact

Evaluation Criteria Categories	Criteria	Criteria Description	Evaluation Measures
Cost	Cost	*How costly is the project?* All projects will have costs associated with development and implementation. This criterion evaluates the relative cost of the concepts and the level of investments for the improvements.	The scale for cost is as follows: 5 – The project requires a relatively low level of investment. 3 – The project requires a moderate level of investment. 0 – The concept requires a relatively high level of investment.
Funding Availability	Availability and potential funding sources	*To what extent does the project have potential funding sources and how competitive is the project for funding among similar projects?* Certain projects may qualify for specialized funding or grant sources that would improve the chances of receiving funds and being constructed.	The scale for availability and potential funding sources is as follows: 5 – The project has multiple potential funding sources, and/or a high likelihood that it would be funded by at least one of the sources. 3 – The project has only one potential funding source and/or the process is competitive and it is unclear if it would receive funds. 0 – The project has no potential funding sources and/or the process is very competitive and it is unlikely to receive funds.
Pedestrian-Oriented Population Areas	Pedestrian-Oriented Population Areas	*To what extent does the project serve pedestrian-oriented populations, which include high concentrations of elderly persons, youth, persons earning below the poverty line, and persons with limited access to vehicles, as defined by the US Census?* Census and other survey data will be used to determine where these populations exist.	The scale for high pedestrian potential is as follows: 5 – The project addresses areas with multiple concentrations of pedestrian-oriented populations. 3 – The project addresses one area with concentrations of pedestrian-oriented populations. 0 – The project does not address areas with concentrations of pedestrian-oriented populations.

Weighting

Similar to the factors for developing areas of concern, feedback was provided by the TAC, the CAC, and the public at seven public meetings located on the islands of Hawaii, Maui, Kauai, and Oahu. The criteria were ranked in regards to priority, with 1 being the highest priority and 8 being the lowest priority. The overall ranking results are shown on Table 2.

TABLE 2
RANKED PRIORITIZATION CRITERIA

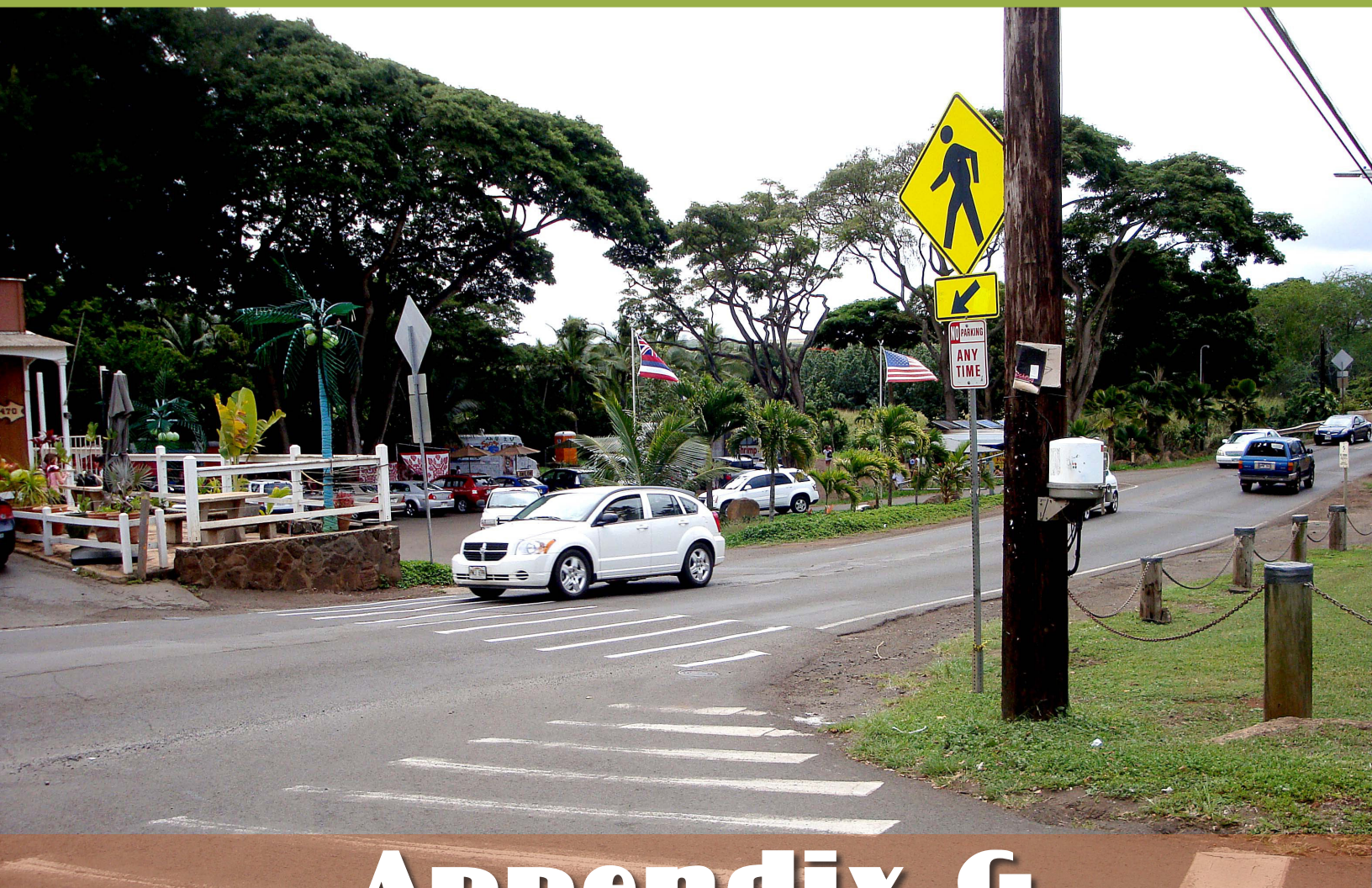
Criteria	TAC	CAC	Public Meetings				
			Hawaii	Maui	Kauai	Oahu	TOTAL
Pedestrian Safety	1	2	1	1	2	1	1
Pedestrian Connectivity	2	1	2	2	1	2	2
Pedestrian-Oriented Populations	3	3	3	3	3	3	3
Pedestrian System Gaps	4	4	4	4	4	4	4
Environmental Impacts	7	5	5	5	5	7	5
Funding Availability	7	6	7	7	6	6	6
Cost	5	7	6	6	7	5	7
Property Impacts	8	8	8	8	8	8	8

Based on the feedback from the TAC, CAC, and the public the pedestrian safety criterion was weighted twice as much as the property impacts criterion. The rest of the criteria were weighted evenly in between pedestrian safety and property impacts.

Prioritized Areas of Concern

After the final list of areas of concern was established and potential solutions were proposed, each project was evaluated using the criteria in Table 1. Weighting was applied to the evaluation criteria and a final prioritized list was developed.

The areas of concern and the prioritized project/program list are included in the final Statewide Pedestrian Master Plan.



Appendix G

Funding Strategies

Appendix G: Funding Sources

The pedestrian projects in the Statewide Pedestrian Master Plan (Plan) are located adjacent to or on highway facilities owned by the State Department of Transportation. Many of the areas of concern and subsequent projects can be implemented when highways are upgraded, reconstructed, or otherwise improved. Pedestrian projects can also be included in other projects such as safety, preservation, capacity, or congestion activities or as stand alone capital improvement projects.

Introduction

There are a variety of potential funding sources including local, state, and federal funding programs that can be used for pedestrian improvements. Most of these programs are competitive and some can involve the completion of extensive applications with a clear documentation of the project need, costs, and benefits. Described below are funding sources and mechanisms available in Hawaii.

Federal Funding Sources

Federal Highway Trust Fund

The Federal Highway Trust Fund allocates revenue to states through the Federal-Aid Highway Program. The revenues are apportioned to states based on a formula process that provides capital funding for the nation's most heavily used roads, maintaining interstates, and fixing bridges. The Federal-Aid Highway Program directs states to establish a classification of roads, based on function, so that roadways can be improved appropriately as funding opportunities arise. Revenues come from motor vehicle fuel taxes, sales taxes for heavy trucks and trailers, tire taxes, and annual heavy truck use taxes. Revenues are split into two accounts: the highway account and the transit account. Funds are appropriated to individual states on an annual basis under the current surface transportation legislation, the Moving Ahead for Progress in the 21st Century (MAP-21). It is a long-term highway authorization Act and guides transportation policy at the federal level. The Act includes funding for fiscal years 2013 and 2014, and outlines national goals and transportation performance targets. MAP-21 also condenses and streamlines transportation funding programs from the previous 90 into roughly 30. The Act builds on and refines many of the highway, transit, bike, and pedestrian programs and policies established in 1991.

Programs funded under MAP-21, and relevant to this plan, include the Surface Transportation Program (STP) and Transportation Alternatives Program (TAP). The TAP is funded by states setting aside a portion of the STP budget. Federal funds must be matched with state and local funds.

To receive funds from the Federal Highway Trust Fund, projects must be included in Hawaii's Statewide Transportation Improvement Program (STIP). Specific programs and grants through which these funds are allocated are described in the State Funding Sources section of this document.

Surface Transportation Program

Surface Transportation Program (STP) funds are distributed based on apportionment consistent with the Highway Trust Fund. The program provides flexible funding that may be used by states and localities for projects on any federal-aid highway, including the National Highway System, bridge projects on any public road, transit capital projects, and intracity and intercity bus terminals and facilities. It can be used for a broad array of highway purposes and flexibly used for major transit purposes as well.

In addition to funding motorized transportation, it provides funds for independent bicycle and pedestrian projects. Between 1992 and 2004, STP funds provided $3.9 million of bicycle- and pedestrian-related funding; 9% of the total by program type.

The Federal share is generally 80 percent, subject to a sliding scale adjustment. If the funds are used for Interstate projects to add high occupancy vehicle or auxiliary lanes, but not other lanes, the Federal share may be increased to 90 percent. Certain safety improvements qualify for a Federal share of 100 percent. Any remaining match must be provided locally by the HDOT, the City, County, or another State Department.

Transportation Alternatives Program

Transportation Alternatives Program (TAP) funds are also distributed based on apportionment formulas. This program encourages the pursuit of nonmotorized transportation facilities, and cultural, aesthetic, and environmental aspects of the surface transportation system. Funding is provided through FHWA's STP. Ten percent of STP's funding apportionment is specifically directed to transportation alternatives activities.

The HDOT receives approximately $3.6 million per year in federal funds for TAP efforts statewide.

TAP eligible projects relevant to the Plan include:

- Provision of facilities for pedestrians and bicycles
- Provision of safety and educational activities for pedestrians and bicyclists

TAP funding provides up to 80% of the project cost. The remaining 20% match must be provided locally by the HDOT, or a City, County, or State Department. Funding applications must meet eligibility, funding, and management requirements, and are submitted to the HDOT to be funded. TAP projects must be included in the STIP.

Safe Routes to School Program

Under the current Federal transportation legislation, MAP-21, SRTS program remains eligible under the Transportation Alternatives Program (TAP). Local governments, schools, and transit agencies can propose projects to the State DOT. Nonprofits are not eligible as direct grant recipients of the funds, however, they can partner with an eligible partner. This funding empowers communities to make bicycling and walking to school a safe and routine activity. Eligible activities include planning, design, and construction of projects that will substantially improve the ability of students to walk and bike to school. These include sidewalk improvements, traffic calming and speed reduction improvements, pedestrian and bicycle crossing improvements, on-street bicycle facilities, off-street bicycle and pedestrian facilities, secure bike parking, and traffic diversion improvements in the vicinity of schools (within approximately two miles). Such projects may be carried out on any public road or any bicycle or pedestrian pathway or trail in the vicinity of schools.

The SRTS Program provides funding to DOTs, and DOTs are responsible for administering the program (which consists of local/state partnerships). The Federal SRTS Program has been funded at about $978 million through fiscal year 2011. Funding can also be used for non-infrastructure-related activities to encourage walking and bicycling to school. These include public awareness campaigns and outreach to press and community leaders;

traffic education and enforcement in the vicinity of schools; student sessions on bicycle and pedestrian safety, health, and environment; and training of volunteers and managers of SRTS programs. The Hawaii SRTS program is managed by the HDOT and received a total apportionment of funding of $7.2 million between 2005-2011. Under MAP-21, HDOT has the option to continue eligible SRTS program activities.

Highway Safety Improvement Program

The Highway Safety Improvement Program (HSIP) is another funding source distributed based on apportionment to states. HSIP is a component of the FHWA Federal Aid Program. It provides improvements in areas characterized by high accident frequencies. The program also funds grants for safety related education and public outreach programs.

The Federal share is 90 percent, except that the Federal share is 100% for certain safety improvements listed in 23 USC 120(c).

National Highway Traffic Safety Administration

The National Highway Traffic Safety Administration (NHTSA) was established by the Highway Safety Act of 1970 to carry out safety programs previously administered by the National Highway Safety Bureau. Specifically, the agency directs the highway safety and consumer programs established by the National Traffic and Motor Vehicle Safety Act of 1966, the Highway Safety Act of 1966, the 1972 Motor Vehicle Information and Cost Savings Act, and succeeding amendments to these laws. NHTSA focuses on achieving highest standards in motor vehicle and highway safety. It provides grants for efforts related to its program areas. NHTSA's pedestrian safety programs are directed toward reducing pedestrian injuries and fatalities, improving the safety of elderly pedestrians, and reaching diverse communities through education, enforcement, and outreach. The HDOT obtains approximately $1.5 to 2.0 million a year through the Highway Safety Grant program. Some of these funds are used to sponsor the Walk Wise Hawaii Program.

Recreational Trails Program

To streamline federal highway transportation programs under MAP-21, a new program called the Transportation Alternatives Program (TAP) was established to provide for a variety of alternative transportation projects that were previously eligible activities under separately funded programs. The Safe Routes to School Program (SRTS), Transportation Enhancements Program (TE), and Recreational Trails Program (RTP) are all consolidated under TAP. MAP-21 requires each State to set aside a portion of its TAP funds for projects relating to recreational trails under 23 USC 206. [23 USC 213(f)-(g)]

- The amount to be set aside is equal to each State's FY 2009 RTP apportionment.
- 1% of the set-aside funds are to be returned for FHWA administration of the RTP.
- A State may opt out of this set-aside if the Governor notifies the Secretary no later than 30 days prior to the start of a fiscal year. A State opting out may not use TAP funds for RTP administrative costs for that fiscal year.
- If the State does not opt out of the RTP, the RTP provisions and requirements remain unchanged.

The Recreational Trails Program (RTP) provides funds to states to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. Federal transportation funds benefit recreation including hiking. This funding source may not fund many of the improvements included in the Plan. Locally, the funds received for the Recreational Trails Program are passed directly on to the Department of Land and Natural Resources (DLNR).

Enhanced Mobility of Seniors and Individuals with Disabilities Program

MAP-21 created a new formula grant program that provides capital and operating costs to provide transportation services and facility improvements that exceed those required by seniors and the Americans with Disabilities Act. Funds are apportioned for urbanized and rural areas based on the number of seniors and individuals with disabilities in the project area, and cover up to 80 percent of project costs; a local match is required for the remaining 20 percent. Examples of pedestrian/accessibility projects that can be funded include installing Accessible Pedestrian Signals (APS), enhancing transit stops to improve accessibility, and establishing a mobility coordinator position. Other eligible improvements include mid-block and high-visibility crossing improvements.

Congestion Mitigation and Air Quality Improvement Program

The Congestion Mitigation and Air Quality Improvement (CMAQ) program supports transportation projects or programs that will improve air quality and relieve congestion in areas that do not meet National Ambient Air Quality Standards. Additionally the CMAQ program issues flexible funds allocated to each state even if there are no non-attainment areas, similar to STP funds. Reducing pollution and other adverse environmental effects of transportation projects and transportation system inefficiency have been long-standing USDOT objectives. CMAQ funds may be used to establish new or expanded transportation projects or programs that reduce emissions, including capital investments in transportation infrastructure, congestion relief efforts, and diesel engine retrofits. Other CMAQ projects include bicycle/pedestrian facilities and programs.

Community Development Block Grant

The Community Development Block Grant (CDBG) program provides money from the US Department of Housing and Urban Development (HUD) for streetscape revitalization, which may be largely comprised of pedestrian improvements. Federal CDBG grantees may "use Community Development Block Grants funds for activities that include (but are not limited to): acquiring real property; reconstructing or rehabilitating housing and other property; building public facilities and improvements, such as streets, sidewalks, community and senior citizen centers, and recreational facilities; paying for planning and administrative expenses, such as costs related to developing a consolidated plan and managing Community Development Block Grants funds; provide public services for youths, seniors, or the disabled; and initiatives such as neighborhood watch programs." Locally, the CDBG program is run through the Community-Based Development Grants Program, which is administered by the Community-Based Development Advisory Council within the Department of Business, Economic Development and Tourism (DBEDT).

Transit-Oriented Development Planning Pilot

MAP-21 creates a new discretionary pilot program to advance planning efforts that support transit-oriented development (TOD) associated with new fixed-guideway and core capacity improvement projects. The comprehensive plans should seek to enhance economic development, ridership, and other goals; facilitate multimodal connectivity and accessibility; increase access to transit hubs for pedestrian and bicycle traffic; enable mixed-use development; identify infrastructure needs associated with the project; and include private sector participation. MAP-21 authorizes $10 million for FY 2013 and $10 million for FY 2014[1].

[1] http://www.fta.dot.gov/documents/MAP-21_Fact_Sheet_-_Transit-Oriented_Development_Planning_Pilot.pdf (May 2013)

State Funding Sources and Funding Mechanisms

The following are existing or potential funding sources and funding mechanisms at the state level that can be used to implement some of the Plan projects or other pedestrian-related projects.

State Highway Fund

The State Highway Fund is used to fund transportation projects in the State of Hawaii. These funds pertain to aviation, harbor and land transportation projects. The four primary revenue sources for the Highway Fund are the gas tax, rental car tax, vehicle weight tax, and vehicle registration fee.

Gas Tax

The revenues from fuel taxes are distributed to several special funds. Fuel taxes paid on liquid fuel sold for use in or used for small boats are deposited into the Boating Special Fund. Fuel taxes paid on sales of aviation fuel are deposited into the Airport Revenue Fund. Environmental response tax collections are deposited into the Environmental Response Revolving Fund, which is administered by the Department of Health for oil spill prevention and remediation programs.

The remaining State fuel tax revenues are deposited into the State Highway Fund, while the remaining county fuel tax revenues are deposited into the respective county's highway fund. The state increased the per gallon fuel tax from $0.17 to $0.27 in 2011.

Rental Car Tax

Currently the car rental tax is $5 a day and can only be legally used to support airport-related projects. An increase was approved in April to help address the state's budget deficit.

Vehicle Weight Tax and Vehicle Registration Fees

These taxes and fees are administered and collected by the counties and deposited into the State Highway Fund. The counties collected $63.3 million in state motor vehicle weight taxes and registration fees in fiscal year 2009.

State and County General Fund

The State and County general fund is the fund that is used to account for all transactions which are not accounted for by another fund. The major sources of revenue for the General Fund are the general excise tax and individual income tax. In 2012, of the $4.3 billion distributed to the General Fund, $2.5 billion came from general excise tax and $1.5 billion was from individual income tax. General fund appropriations can be used to fund transportation projects, but typically are not. In past years, the state has not used the general fund to fund any transportation capital or maintenance projects. The majority of the state's general fund goes to education and social services.

Government Obligation Bonds

Bonding allows state, municipal, and county governments to finance construction projects by borrowing money

and paying it back over time (with interest). Financing costs with bonds requires funding to pay back borrowed funds. Financing requires smaller regular payments over time compared to paying the full cost at once; however, financing increases the total cost by adding interest.

There are two types of Government Obligation Bonds: General Obligation Bonds and Revenue Bonds.

General Obligation Bonds are often used to pay for construction of large capital improvements. This method is typically used to fund road improvements that will benefit an entire community. General Obligation Bonds add the cost of the improvement to property taxes over a period of time. A majority vote of members of the Legislature is required at the state level to authorize the issuance of all general obligation bonds issued by the State. Counties are also able to issue general obligation bonds in Hawaii. Revenue for General Obligation Bonds is collected in property tax billings.

Revenue Bonds are repaid with dedicated revenue from a source other than property taxes. Revenues from a Systems Development Charge, Local Improvement District, or other reliable revenue streams can be used. Revenue bonds are typically used to fund improvements that primarily benefit the people who provide the revenue through fees and assessments.

Local Funding Mechanisms

Improvement District (District)

A District is created by an ordinance and voted on by property owners within a defined district to raise revenues for constructing street improvements within that district. Districts may be used to assess property owners for improvements that benefit properties within the district boundary and are secured by property liens. Property owners typically enter into Districts because they see economic or personal advantages to the improvements. Local jurisdictions generally work with property owners to acquire financing at lower interest rates than under other financing methods.

The formation of Districts is governed by State law and local jurisdictional development codes. Districts can vary considerably in the size of the district. District revenues are used solely for capital costs, and can be combined with other revenue sources to fully fund improvement costs. An example of a Special Improvement District in the City and County of Honolulu is the Fort Street Mall Special Improvement District No. 2.

Parking Fees and Fines

Increasing existing or implementing new parking fees and fines are a potential source of funding for pedestrian improvements in the transportation network. Generally, improvements are restricted to the areas where the fees and fines are collected to improve the immediate area where funds are collected. Sometimes parking districts are implemented to help organize the parking fees and fines.

The city of Pasadena, California generated revenue in this way by establishing the “Old Pasadena Parking Meter Zone” in 1993. Prior to establishment of this zone, curbside parking was free in old Pasadena and only restricted by a 2-hour time limit that was rarely enforced. Patrons of businesses in old Pasadena frequently reported difficulty finding parking spaces. In addition, sidewalk amenities and landscaping features were older and not well maintained. The Old Pasadena Parking Meter Zone included metered parking spaces that were initially priced at $1 per hour and were specifically labeled to indicate to travelers that all revenue generated from the parking meters would be used to improve infrastructure in old Pasadena. The revenue generated from the parking meters was used to finance a bond that provided $5 million of pedestrian and bicycle improvements and landscaping in old

Pasadena in the mid-1990s. As of the early 2000s, the bond had been paid off and the parking zone has generated additional revenue that was then fed back into Pasadena.[2]

Tax Increment Financing

Urban Renewal Areas (URAs) are formed in selected areas creating a tax-increment financing (TIF) mechanism to generate urban renewal funds. The county has governing authority over the TIF, and state statute requires a Project Plan and conformity with the plan. TIF works by 'freezing' property values at the beginning of an urban renewal plan, and assessing a fee only on the incremental growth in property value observed since the beginning of the urban renewal district plan. The revenues generated within an urban renewal district are used to secure bonds to finance projects and programs within that district. Hawaii state law allows any county council to establish a TIF district through adoption of an ordinance.[3]

URAs have been used with success in Portland, Oregon by the Portland Development Commission. As of 2011, there are eleven Urban Renewal Areas within the city of Portland; the oldest one has been active since 1974. The Portland Development Commission has used funds generated through use of the TIFs to develop infrastructure improvements and construct new affordable housing within each URA.[4]

Community Facilities District

Community Facilities Districts (CFD) can be formed in counties throughout the state of Hawaii. CFDs finance special improvements in the county, and the county has the power to levy and assess a special tax on property located in a district to finance the improvements. CFD funds are similar, but are more flexible than TIFs and Districts and can be used for facility maintenance.

Public-Private Partnerships

These are generally projects that are funded and operated through a partnership of government and one or more private sector companies. Public-private partnerships (PPP) allow for greater private sector participation in the delivery and financing of transportation projects. There are a wide variety of PPP structures, and the degree of involvement, responsibility, and risk for the private sector varies depending on the structure chosen. Due to the complex funding of this type of project, PPPs are unlikely to be an appropriate funding source for the Statewide Pedestrian Master Plan.

System Development Charges and Developer Obligations

Transportation System Development Charges (SDCs) are a one-time fee assessed on new development, to compensate for increased traffic associated with its use. The charge is applied to capital improvement projects that increase transportation system capacity associated with growth.

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[2] Shoup, Donald and Douglas Koloszvari, 2003. *Turning Small Change into Big Changes*. Access: Transportation Research at the University of California, number 23. http://www.techtransfer.berkeley.edu/newsletter/11-1/parking.php

[3] Hawaii Revised Statutes, 46-103.

[4] http://www.pdc.us/ura/default.asp (December 2012)

With developer obligations, an improvement is paid for or built by the developer to City standards and then deeded to the City or local municipality as a condition for development approval. Developer obligations and contributions can pay for pedestrian improvements in, adjacent to, or through new developments.

Parking Space Tax

Implementing a parking tax on off-street parking facilities can serve as a steady source of revenue. This concept could be implemented as a pilot project at key major employers in a downtown area or central business district. This type of tax has not previously been implemented in Hawaii. If the State or municipality is unable to implement this tax, they could propose a "Local Option Tax." This tax would be subject to a vote. Cities in other states have found a parking space tax as an effective revenue source. Residents and property owners may be more supportive of this tax if the revenues are spent on a pedestrian project that directly improves the site.

The city and county of San Francisco implemented a 25% tax on parking spaces in 1970 and 1971 on all public and private on and off-street parking spaces. The tax was based on the assessed value of the parcels they were contained within. This was done for the express purpose of generating revenue in lieu of a property tax increase and was not limited to use solely for transportation improvements.[5]

[5] Transit Cooperative Research Program, 2004. Report 95, Chapter 13: Traveler Response to Transportation System Changes: Parking Prices and Fees, page 13-6.