



## RESOLUTION

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ADOPTING THE FINAL OAHU PEDESTRIAN PLAN DATED JULY 2022.

WHEREAS, the City Council (Council) finds that in the 2006 general election, the island's voters approved City Charter Amendment Question No. 8 by 76 percent, which established a policy of the Department of Transportation Services (DTS) to make Oahu more pedestrian- and bicycle-friendly, and the amendment is codified in Section 6-1706 of the Revised Charter of the City and County of Honolulu 1973 (Amended 2017 Edition), as amended; and

WHEREAS, in 2012, Ordinance 12-15 was enacted by the City and County of Honolulu (City) as a Complete Streets policy to ensure that the transportation system of the City served all roadway users, including pedestrians, and the ordinance is codified in Chapter 14, Article 33, Revised Ordinances of Honolulu 1990; and

WHEREAS, the Council finds that from 2014 through 2018, walking was a popular form of transportation on Oahu with 5.4 percent of commuters island-wide and 8.7 percent of commuters in Urban Honolulu using it as their primary commute mode according to United States Census Bureau data; and

WHEREAS, the Council further notes that within the same period from 2014 through 2018, there was an annual average of 21 pedestrian fatalities and 499 injuries in the City; and

WHEREAS, the City has 1,476 miles of improved existing walkways and 901 miles of unimproved missing walkways; and

WHEREAS, in July 2021, DTS published a public draft of the Oahu Pedestrian Plan as a final step in soliciting public input to help shape the plan and has integrated the input received into the final Oahu Pedestrian Plan, dated July 2022; and

WHEREAS, the Oahu Pedestrian Plan identifies the City's Pedestrian Priority Network and a tiered list of 145 miles of priority walkway projects along this network for City implementation; and

WHEREAS, the Oahu Pedestrian Plan identifies 38 High Pedestrian Injury Corridors and 107 High Pedestrian Injury Intersections/Crossings that account for a disproportionate share of pedestrian injuries and fatalities on City-owned streets; and

WHEREAS, the Council finds that the Oahu Pedestrian Plan is a critical long-term action plan to address the high pedestrian injury corridors, intersections and



**CITY COUNCIL**  
CITY AND COUNTY OF HONOLULU  
HONOLULU, HAWAII

No. 22-227

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**RESOLUTION**

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crossings, which is needed to create safe and accessible streets that allow everyone to get around comfortably by walking; and

WHEREAS, the Council further finds that as a policy statement in support of DTS' implementation of the Oahu Pedestrian Plan, and to protect and promote the safety of pedestrians on City streets, it is in the best interest of the City and its residents for the Council to adopt the final Oahu Pedestrian Plan, dated July 2022, in substantially the same form as attached hereto as Exhibit 1 and incorporated herein by reference; now, therefore,

BE IT RESOLVED by the Council of the City and County of Honolulu that the Council hereby adopts the final Oahu Pedestrian Plan, dated July 2022, in substantially the same form as attached hereto as Exhibit 1 and incorporated herein by reference; and



**CITY COUNCIL**  
CITY AND COUNTY OF HONOLULU  
HONOLULU, HAWAII

No. 22-227

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**RESOLUTION**

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BE IT FINALLY RESOLVED that copies of this resolution be transmitted to the Mayor, the Managing Director, the Director of Design and Construction, the Chief Engineer of Facility Maintenance, the Director of Planning and Permitting, and the Director of Transportation Services.

INTRODUCED BY:

Tony Water (br)

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DATE OF INTRODUCTION:

SEP 20 2022  
Honolulu, Hawaii

Councilmembers



# O A H U PEDESTRIAN P L A N



Department of Transportation Services  
City and County of Honolulu

*Honolulu*  
COMPLETESTREETS

**FINAL**  
July 2022



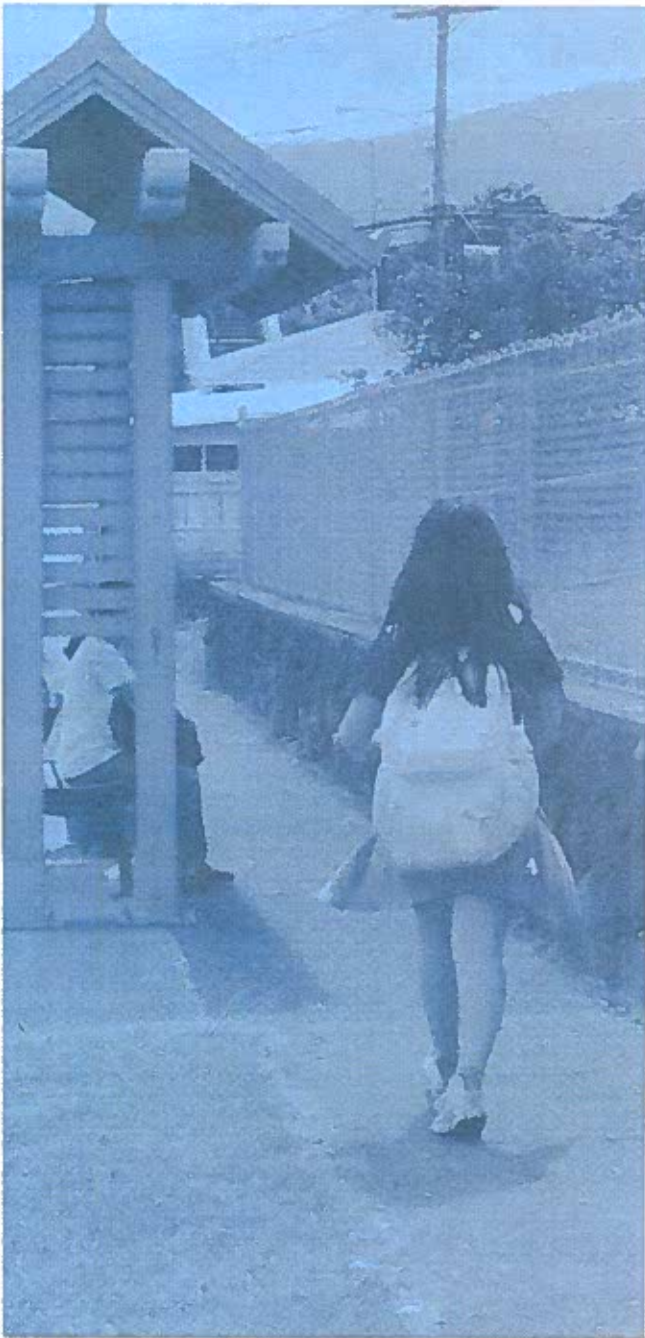
*"Prepared by The City and County of Honolulu, Department of Transportation Services in Cooperation with the Oahu Metropolitan Planning Organization and the United States Department of Transportation";*

*"This report was funded in part through grants from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation. The views and opinions of the agency expressed herein do not necessarily state or reflect those of the U.S. Department of Transportation."<sup>11</sup>*









# EXECUTIVE SUMMARY

The Oahu Pedestrian Plan (Plan) is a long-term action plan to create safe and accessible streets that allow everyone to get around comfortably by walking. Walking is the oldest form of transportation. It is the most affordable and is environmentally friendly. Pedestrian activity contributes to strong communities and mental and physical health. It is how keiki and kupuna can independently get to community destinations; how transit riders get to and from their stops; and how drivers and cyclists get from parking to the front door.

Preparation of the City and County of Honolulu's (City) first Pedestrian Plan included an extensive inventory of existing pedestrian conditions and the state of pedestrian infrastructure on our island. This assessment was followed by public outreach, analysis of pedestrian crash data, and the identification of High Pedestrian Injury locations. Based on the needs identified, the Plan prioritizes where safety and infrastructure improvements are most critical for supporting walking and multimodal travel, consistent with the City's Complete Streets law.

## SAFETY

The Plan was developed around a primary goal of pedestrian safety and the principle that everyone should be able to walk in their community without fear of harm. The reality is that we have much work to do to achieve this goal. In the five-year period that began in 2014, there were an average of 21 people killed and 499 injured while walking each and every year on Oahu, and these numbers are on the rise. Particularly impacted are those over 65 years old and those living in Environmental Justice communities.

Pedestrian safety issues are not evenly distributed around Oahu, so a critical output of the Plan was identifying the streets with the greatest safety needs. The Plan identifies 38 High Pedestrian Injury Corridors and 107 High Pedestrian Injury Intersections/Crossings that account for a disproportionate share of pedestrian injuries and fatalities on City-owned streets. The High Pedestrian Injury Corridors comprise only 2% of City roadway mileage, yet they account for 60% of pedestrian fatalities and 42% of injuries.

### Pedestrian Fatalities and Injuries Per Year (2009-2018)

	FATALITIES	INJURIES
2009-2013	15.2 per year	452 per year
2014-2018	21 per year	499 per year
% INCREASE	38%	10%

\*Note: Data on injuries for 2021 is not available

## PEDESTRIAN PRIORITY NETWORK

The pedestrian infrastructure needs of the entire City roadway system are significant. The cost to provide missing walkways—just one area of deficiency—is over \$2.6 billion. To help the City efficiently invest limited public resources, the Plan established a Pedestrian Priority Network that maps the City streets and paths that provide the most important walking connections to transit, schools, employment and commercial centers, and other major destinations. The Plan presents a tiered list of priority walkways projects along this network for City implementation.

### City and County of Honolulu Walkway Network

EXISTING WALKWAYS	1,476 miles
MISSING WALKWAYS	901 miles
PROPOSED WALKWAYS	145 miles
PROPOSED COST	\$539 million

## THE 6 E'S

Achieving a pedestrian-friendly Oahu requires addressing all 6 "E"s – engineering, education, encouragement, enforcement, equity, and evaluation. Much of the Plan focuses on engineering (e.g., walkways and paths, safe crosswalks), and equity is integrated throughout the Plan. Education, encouragement, and enforcement are also important for making our streets safer and getting more people to walk.

## TAKING ACTION

The Plan identifies numerous City-led actions that address the following Plan elements: Safety, Pedestrian Priority Network, Education, Encouragement, and Enforcement. These actions require dedication of significant City resources, both in the near term and in the decades ahead.

While there is much work to be done, we are excited that progress is already happening. The City has improvements under development for 7 High Pedestrian Injury Corridors, 24 High Pedestrian Injury Intersections/Crossings, and 29 priority missing walkways. The Plan prepares the City to align with US Department of Transportation priorities and leverage federal funding to implement more improvements. With appropriate resources, the City can make major strides in improving the pedestrian network, making Oahu a safer place for everyone to walk.





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# 1.0 INTRODUCTION

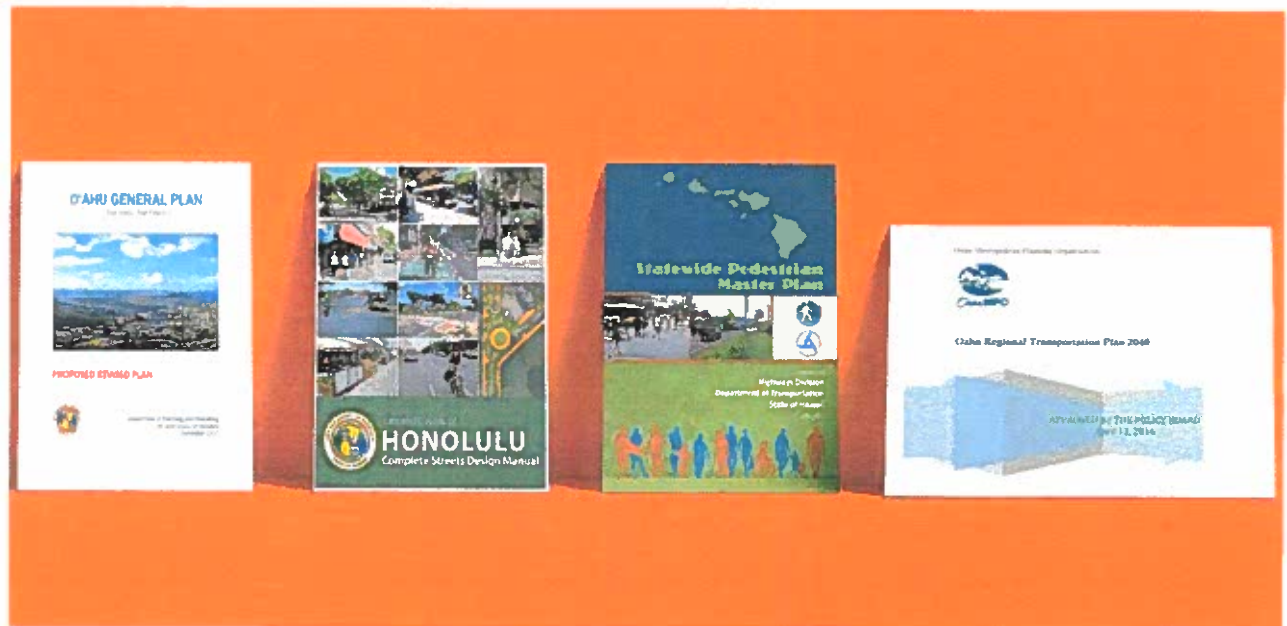
## 1.1 PLAN CONTEXT

The policy framework for this Plan integrates the goals and objectives of local plans with the implementation lessons and best practices of the City and County of Honolulu and other peer city pedestrian plans. This plan is for the City and County of Honolulu and focuses on City and County of Honolulu streets.

The Plan framework is consistent with the Revised Charter of the City & County of Honolulu (2017 Edition), which establishes the priority to make Honolulu a pedestrian-friendly city. The Plan is also consistent with several State and local plans, including the Oahu General Plan,

the Hawaii Statewide Pedestrian Master Plan, the Oahu MPO Regional Transportation Plan (ORTP) 2040, Vision Zero directives of City and County of Honolulu and State of Hawaii (Act 134), Making Honolulu an Age-Friendly City: An Action Plan (2015), and the Complete Streets Ordinance (2012).

A combination of these visions and commitments provides the approach for the final recommendations of this Plan. All final recommendations will consider ADA compliance during implementation.





## 1.2 PLAN FRAMEWORK

*Oahu will create sustainable, safe, and context sensitive streetscapes that inspire pedestrian activity.*

### GOALS

Oahu's transportation environment should be:



#### Safe and Healthy (S&H)

Make Oahu's pedestrian environment safe, comfortable, and clean, including prioritization of modes that improve physical fitness and public health.



#### Sustainable (E)

Prioritize modes of travel and infrastructure projects that preserve Oahu's natural environment, limit the use of natural resources, and optimize economic return on investment.



#### Responsive (R)

Engage the people of the City in a transparent manner to ensure that Oahu creates and maintains an active and context-sensitive pedestrian environment.



#### Equitable (E)

Focus investment to form geographically and demographically equitable walking conditions among Oahu's diverse communities.

### OBJECTIVES

Each of the ten objectives in this Plan ties to one of the ten Complete Streets objectives developed as part of the Honolulu Complete Streets Ordinance<sup>1</sup>, signed into law in 2012. The objectives in this Plan present a pedestrian-focused version of the more multi-modal objectives

in the Complete Streets Ordinance. Each objective addresses one or more of the Plan goals, highlighting the interdependence of environmental, economic, and social planning decisions.

**Table 1 : Pedestrian Plan Objectives**

COMPLETE STREETS ORDINANCE OBJECTIVE	PEDESTRIAN PLAN OBJECTIVE
Improve safety	Improve pedestrian safety.
Apply a context-sensitive solution process that integrates community context and the surrounding environment, including land use	Apply a context-sensitive approach to pedestrian planning that integrates community context and the surrounding environment, including land use
Protect and promote accessibility and mobility for all	Protect and promote accessibility and mobility for all pedestrians.
Balance the need and comfort of all modes and users	Balance the needs and comfort of pedestrians with other modes.
Encourage consistent use of national industry best practice guidelines to select Complete streets design elements	Encourage consistent use of national industry best practice guidelines to select pedestrian design elements, policies, and programs.
Improve energy efficiency in travel and mitigate vehicle emissions by providing non-motorized transportation options	Mitigate vehicle emissions by providing pedestrian connectivity to key destinations and transit.
Encourage opportunities for physical activity and recognize the health benefits of an active lifestyle	Encourage opportunities for physical activity and recognize the health benefits of walking for transportation and recreation.
Recognize complete streets as a long-term investment that can save money over time	Recognize Complete Streets as a long-term investment that can save money over time.
Build partnerships with stakeholders and organizations statewide	Build partnerships with stakeholders and organizations statewide.
Incorporate trees and landscaping as integral components of complete streets	Incorporate trees and landscaping as integral components of the pedestrian environment.

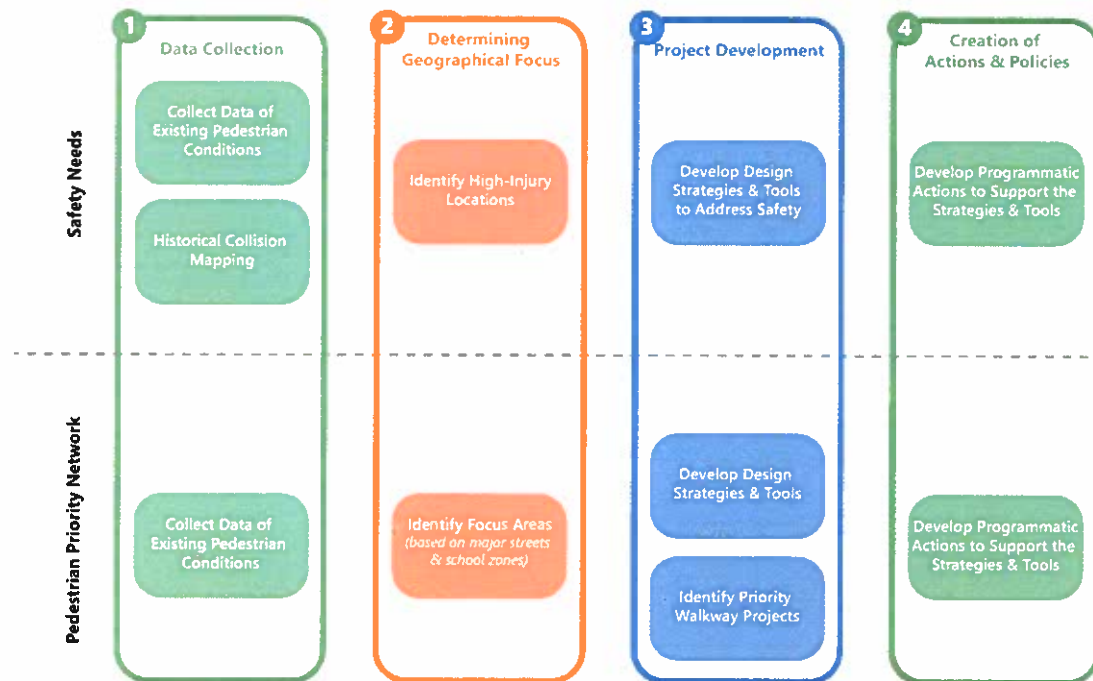
<sup>1</sup> [https://www5.honolulu.gov/docinfo/cityweb/GetDocument.cfm?DocID=17746916\\_2eq\\_8vncat](https://www5.honolulu.gov/docinfo/cityweb/GetDocument.cfm?DocID=17746916_2eq_8vncat)

## 2.0 PLAN DEVELOPMENT

### 2.1 PLAN PROCESS

This chart presents an overview of the development process for this plan. More details on this process are included in **Chapters 4 and 5** of this plan. These two areas of need represent separate goals of the plan. The safety needs identify geographical areas (streets and intersections) that are responsible for a disproportionate share of pedestrian injuries and fatalities on City and County of Honolulu streets, while the Pedestrian Priority Network represents the network of streets and off-street paths that provide connectivity and access

to key destinations. While these two areas of need were developed separately and represent two distinct areas of focus, there is geographical overlap between the two, which further reinforces the interdependence of safety, connectivity, and access. More on the topic of how these areas of focus further support additional goals such as equity is provided in **Chapter 4 and 5**.



Public engagement played a key role in the development of the Oahu Pedestrian Plan. General objectives of public engagement are:



Information sharing and collecting



Creative idea generation and problem-solving



Build trust and input between community groups, individuals, and the City

For the Oahu Pedestrian Plan, public engagement served two primary purposes: 1) to share the outcomes of the project's intensive data development and 2) to gain feedback on the proposed policies, programs, and key focus areas recommended by the project team.



The Public Engagement Plan is a comprehensive public engagement strategy and schedule that includes communications, education, stakeholder meetings and presentations, community events, and means of collecting and documenting input. The plan is coordinated with the recent Oahu Bike Plan update and Complete Streets implementation projects efforts to maximize the community's energy and minimize meeting "burnout." To best serve the objectives of the Oahu Pedestrian Plan, the community engagement objectives are:

- Inform the public of the project, the data collection, analysis, findings, and eventual concept designs.
- Consult with stakeholders with specific expertise through the analysis, and in the consideration of best practices and their applicability to Oahu.
- Involve the public and interested stakeholders in considering the prioritization of issues and opportunities.
- Collaborate with stakeholders on recommendations for phasing improvements, and to bring carry conceptual designs forward
- Empower stakeholders to carry implementation tasks forward and to enforce programs.
- To achieve these goals, a combination of public meetings, participatory mapping, social media, and stakeholder meetings were held.

## 2.2 PUBLIC ENGAGEMENT PLAN





## 2.3 PUBLIC ENGAGEMENT OUTCOMES

The Oahu Pedestrian Plan public engagement actions included:

- On-line participatory mapping
- Participating in pop-up events, paired with Blue Zones, Biki, Bike UHM, and Malama Honua
- Stakeholder Meetings
- Community Meeting

The community meeting held on April 24, 2019 was the project team's opportunity to share back the data developed throughout the project and collect feedback on the policies, programs, and priority focus areas that are recommended in the Plan. The meeting included a presentation, live on-line polling, and many interactive boards for attendees to provide feedback. The meeting was broadcast on Facebook Live and all materials were later posted on-line for public view. It is estimated that about 4,260 people were notified of the meeting through the project team's efforts on social media, email, neighborhood board announcements, and other public notices.

### Top Three Pedestrian Program Priorities



Decriminalizing Walking



Complete Streets Design Strategies



Preserve Pedestrian Rights in Traffic Code

### Top Three Pedestrian Crossing Treatments



Pedestrian Scramble



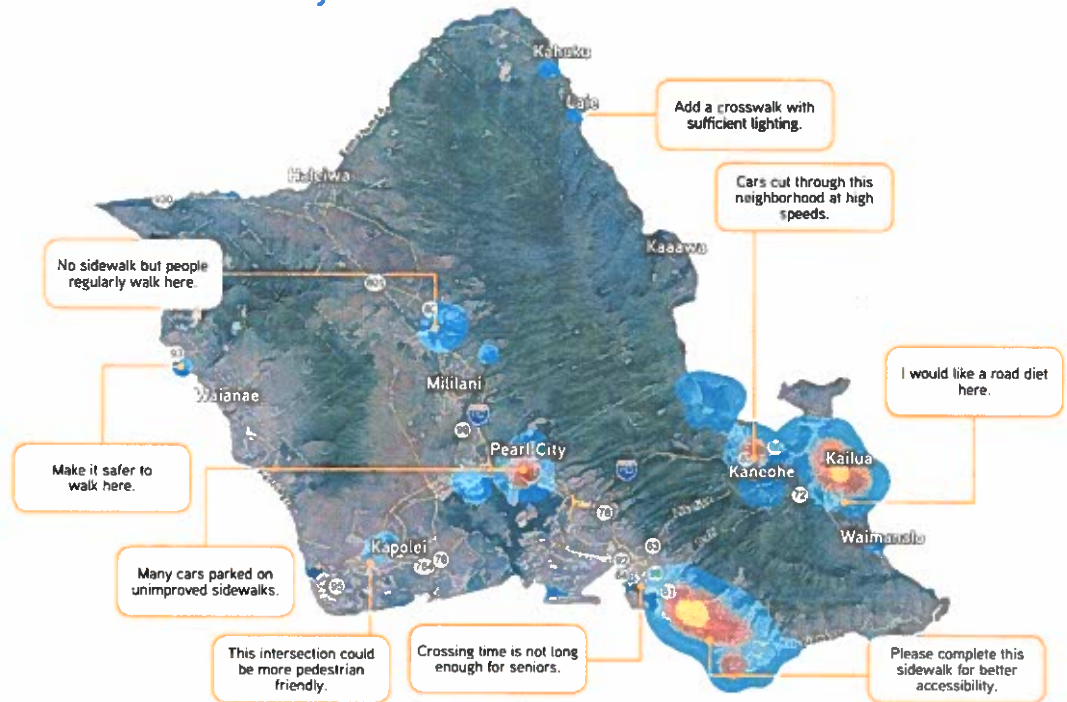
Rectangular Rapid Flashing Beacon



Parking Restriction on Crosswalk Approach



### What we heard from you!



This map shows the distribution of comments received at the time of the first public meeting. It is important to note that the spatial distribution of comments may identify areas of great need, but could also reflect locations where individuals with access to technology and passion for the subject matter are most concerned. To understand the areas of greatest need, please refer to the Safety Needs in **Chapter 4** and the Pedestrian Priority Network in **Chapter 5**, both of which were developed as part of the data-driven island-wide inventory and analysis.







## 3.0 EXISTING CONDITIONS

### 3.1 POLICIES/PROGRAMS

The City and County of Honolulu's pedestrian planning was benchmarked against pedestrian planning best practices throughout the United States. The benchmarking was organized into three topics—policies, practices, and programs—and from there is divided into subtopics. The best practice benchmark for each subtopic was determined using the California Pedestrian Safety Assessment Program while Oahu's baseline is based on a detailed review of policies and programs as well as communication with various City departments. The three-tiered benchmark system—Key Strength, Enhancement Area, or Opportunity Area—is based on the level of difference between the national best practice and the existing conditions or existing planning efforts on Oahu.

These benchmarks help focus Plan recommendations and City resources on the pedestrian planning areas with the greatest opportunity for improvement, while also recognizing the City's key strengths and those current practices that should be retained moving forward. The Implementation Chapter and the policies included in the Policy Framework concentrate on moving Oahu from the 'Opportunity' or 'Enhancement' benchmark to the 'Key Strength' benchmark for all subtopic areas. The chart below illustrates how many of the Oahu pedestrian policies, practices, and programs were considered a 'Key Strength', 'Enhancement Area', or an 'Opportunity Area'.

#### KEY STRENGTH

DESIGN GUIDELINES  
COMPLETE STREETS POLICIES  
PUBLIC INVOLVEMENT AND FEEDBACK  
HEALTH AGENCIES AND EMERGENCY RESPONDERS  
EDUCATION  
PEDESTRIAN PLANS/PROJECTS  
INVENTORY OF SIDEWALKS

#### OPPORTUNITY AREA

PEDESTRIAN TRAFFIC CONTROL DEVICES  
TRAFFIC SIGNAL AND STOP SIGN WARRANTS  
FORMAL ADVISORY COMMITTEE  
DEDICATED FUNDING

#### ENHANCEMENT AREA

IMPLEMENTATION OF ADA  
GENERAL PLAN  
SPECIAL DISTRICTS AND OVERLAY ZONES  
CROSSWALK POLICIES  
GENERAL ORDINANCES  
COLLISION HISTORY AND COLLISION REPORTS  
SPEED LIMITS AND SPEED SURVEYS  
TRAFFIC CALMING PROGRAM  
WALK AUDIT PROGRAM  
ECONOMIC VITALITY  
ENFORCEMENT  
ADA TRANSITION PLAN  
PEDESTRIAN COORDINATOR  
CURBSIDE MANAGEMENT  
TDM & TRANSIT  
PEDESTRIAN VOLUMES  
VISION ZERO  
SAFE ROUTES TO SCHOOL  
COORDINATION WITH SCHOOLS

#### BENCHMARK SYSTEM

includes policies, practices, and programs that influence the City and County of Honolulu's pedestrian planning



## 3.2 EXISTING PEDESTRIAN ENVIRONMENT

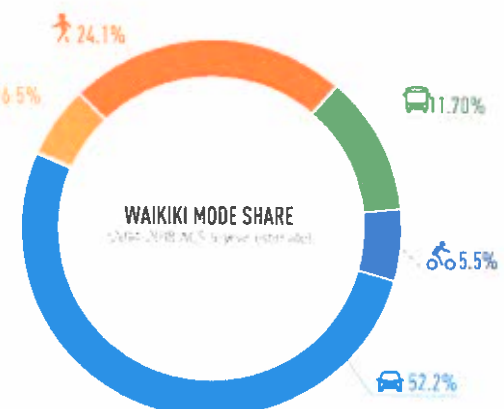
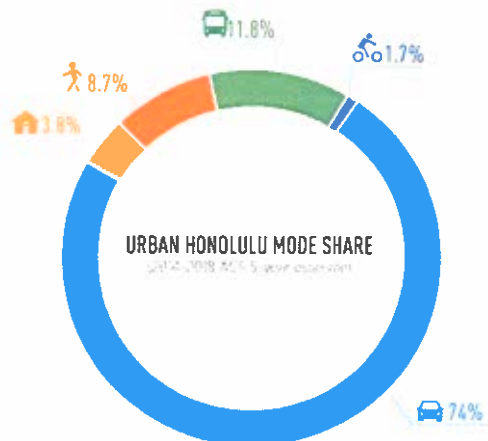
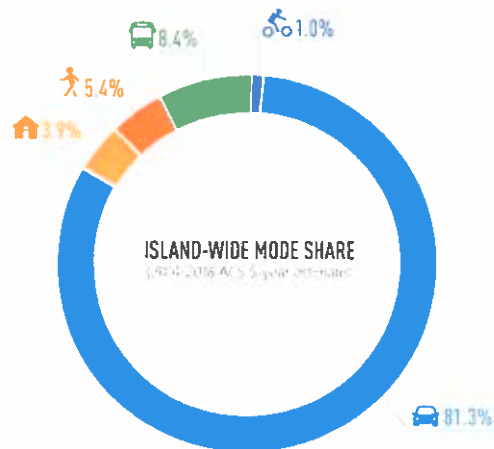
The existing pedestrian environment chapter includes activity trends such as mode split and pedestrian demand areas, existing pedestrian facility inventory, connectivity barriers, and comfort analysis of existing pedestrian facilities.

### ACTIVITY TRENDS

#### MODE SPLIT

A common term used in describing demand for bicycle and pedestrian facilities is "mode split." Mode split refers to the form of transportation a person chooses to take, such as walking, bicycling, public transit, or driving. This data is only available for commute trips and thus only paints a partial picture of the mode choices that residents make. The statewide commute mode share for walking is 4.5%. On Oahu, 5.4% of commute trips are made on foot, which is higher than the statewide average and higher than the share of residents bicycling, working

from home, or using a motorcycle, taxi, or other means. Compared to the statewide mode share, Oahu residents tend to walk and take the bus more than the average of state residents. In Urban Honolulu the walk commute mode share is 8.7% and in specific census tracts the walk commute rates vastly exceed the island-wide rate with a high of 51% of residents commuting by foot in a Waikiki census tract and 24% commuting by foot in the Waikiki neighborhood as whole (per 2014-2018 ACS 5-year estimate).



Existing Conditions

PEDESTRIAN DEMAND MODEL

This plan estimates where people are most likely to be walking (or want to walk) through a pedestrian demand model that is based on several factors that describe proximity to destinations, demographics that contribute to reliance on walking, and built environment factors.

These variables are combined into a single heat map for the island of Oahu, to identify the highest and lowest areas of potential pedestrian demand. The areas with the darkest shading represent locations where, independent of pedestrian deficiencies, people 'should be walking' or 'would be walking.'

The pedestrian demand index is based on several variables, listed below.

- Proximity Factors

(Destinations)

Schools (Destinations)

Parks

High Demand Transit (Bus Stops)

Medium Demand Transit (Bus Stops)

High Demand Bikeshare Stations

Low Demand Bikeshare Stations

Major Retail Destinations

Rail Stations
- Demographics

Age (% under 18 and over 65)

Income (% below poverty level)

Vehicle Ownership (% households with 1 or fewer vehicles)
- Built Environment Factors

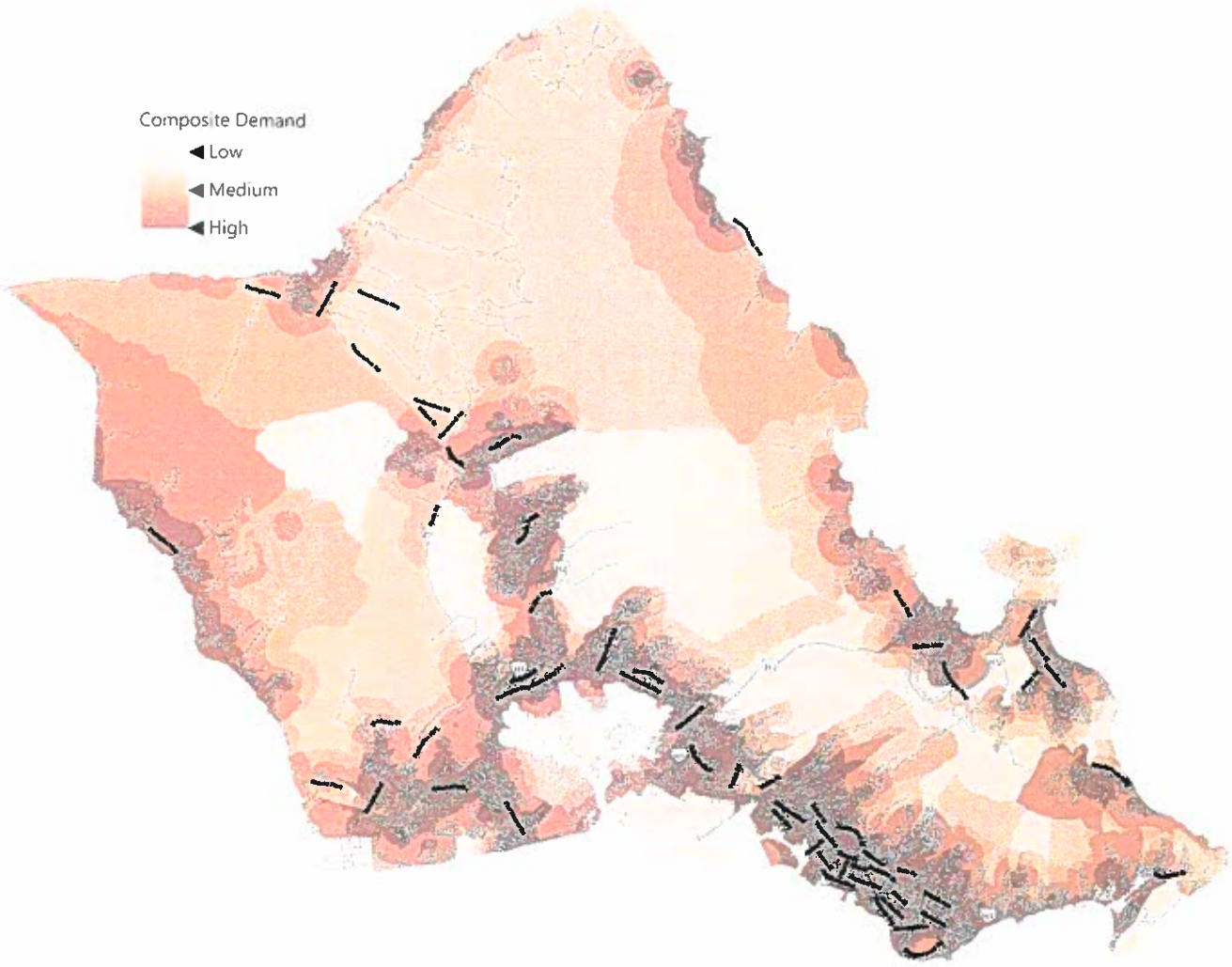
(Density and Diversity of Land Uses)

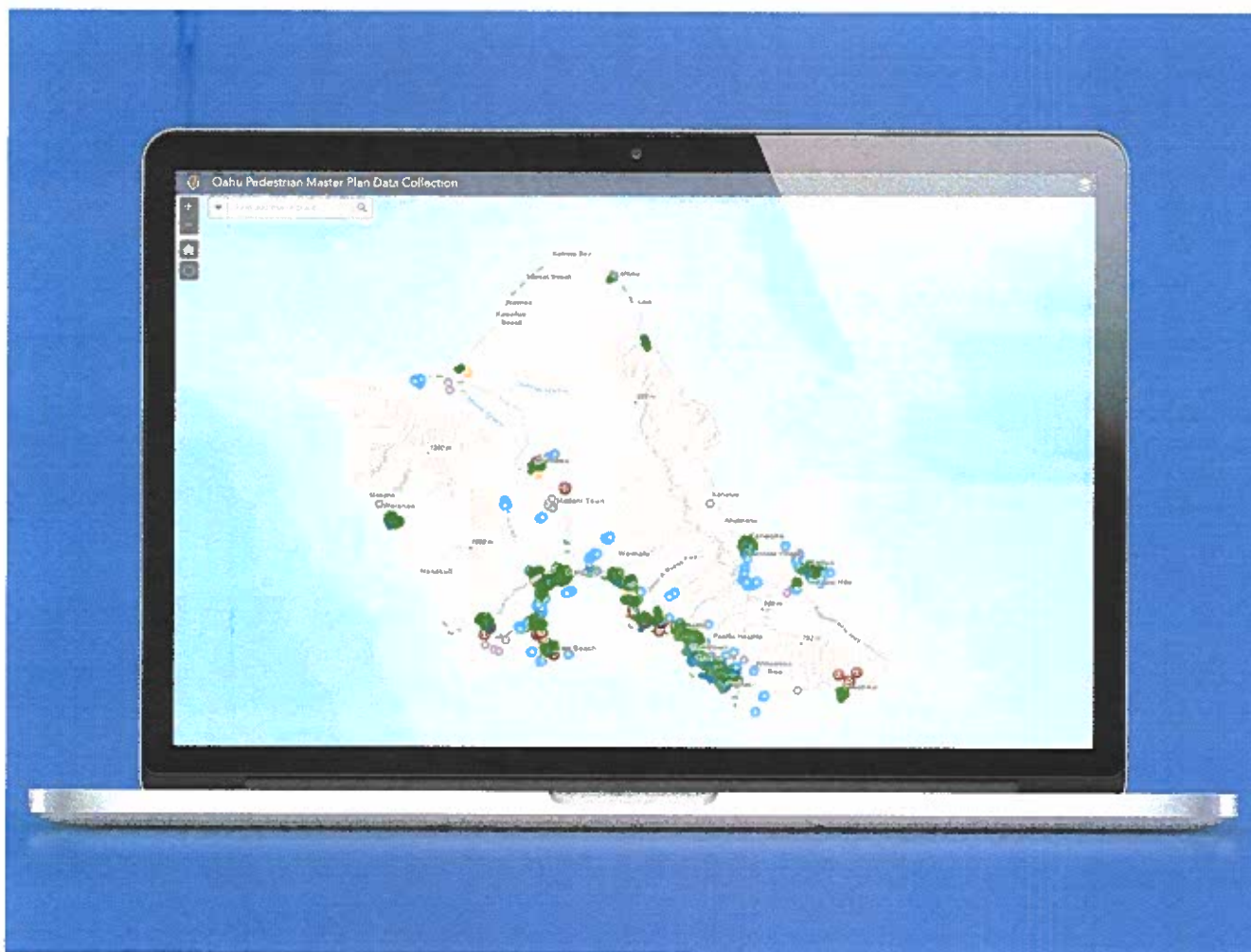
Population Density

Employment Density

Intersection Density

Land Use Mix (ratio in each census tract group)





## PEDESTRIAN FACILITY INVENTORY AND CONDITIONS

The conditions of physical infrastructure supporting walking, such as walkways, is an important consideration in identifying where improvements are needed. The map on this page shows the current state of the pedestrian network based on an inventory that was created for this Plan, which includes the location of existing walkways, crosswalks, signalized crosswalks, and other elements of the built environment. One of the goals of this plan is to focus on expanding this network to fill in the gaps that are the most important related to safety, connectivity, and access to key destinations.

Type of pedestrian facility and presence on Oahu roads is summarized below, based on the inventory of 1,227 miles of Oahu roadways:

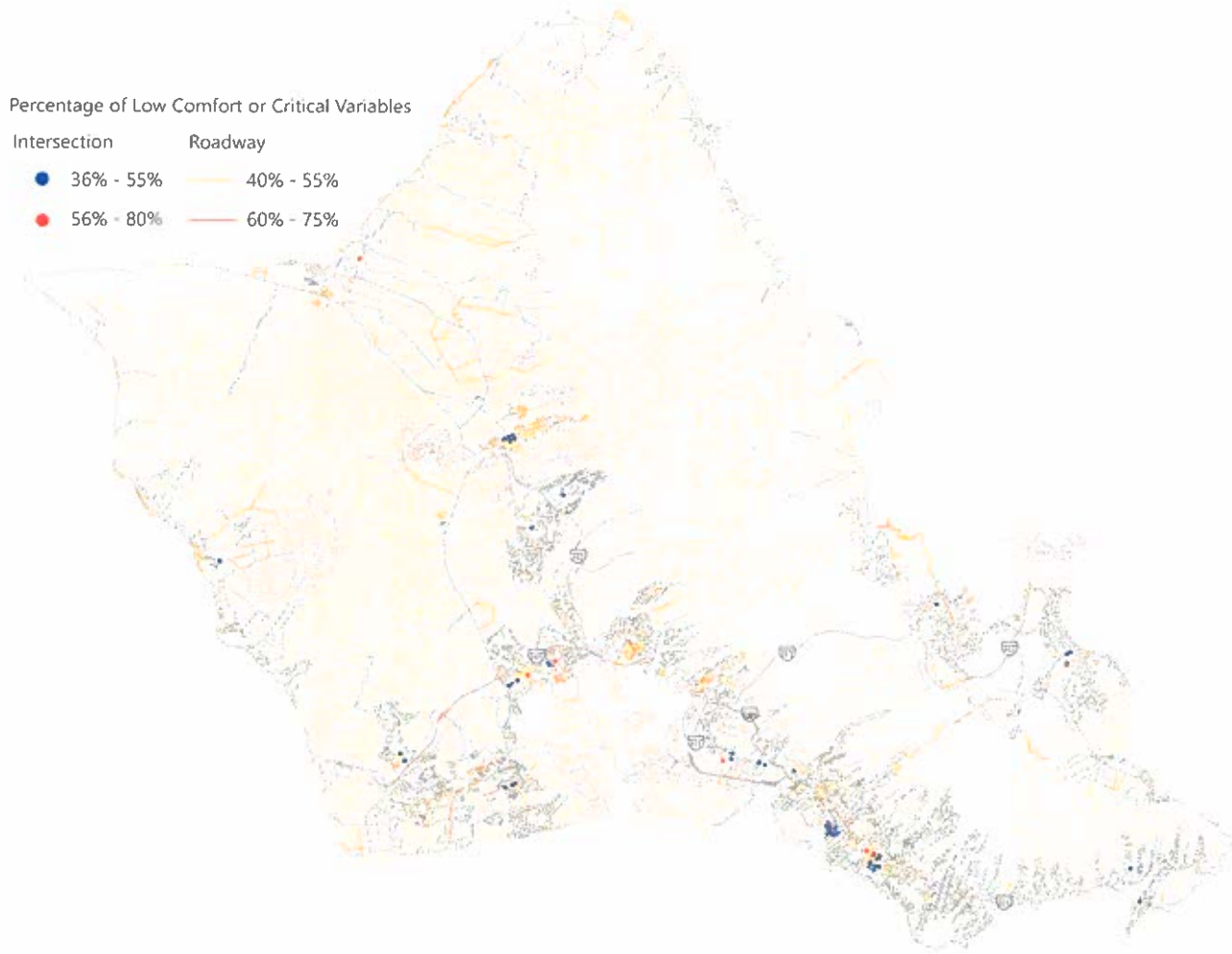
- 57.4% of streets have a concrete walkway on both sides of the street
- 1.8% of streets have an asphalt walkway on one side of the street
- 4.7% of streets have a concrete walkway on one side of the street
- 0.3% of streets have an asphalt walkway on both sides of the street
- 36.2% of streets do not have walkway
- 14.1% of streets have some trees along the walkway



## Existing Conditions

### Percentage of Low Comfort or Critical Variables

Intersection	Roadway
● 36% - 55%	● 40% - 55%
● 56% - 80%	● 60% - 75%



## PEDESTRIAN COMFORT MAP

The condition and quality of existing pedestrian infrastructure can determine whether or not certain areas are comfortable for walking. Areas of low pedestrian comfort can create barriers for people walking and may contribute to suppressed demand. These locations may overlap with areas of high potential demand identified previously but lack certain qualities that make a place comfortable and pleasant to walk, resulting in fewer people walking.

This map illustrates locations with a low level of pedestrian comfort, based on built environment factors that are consistent with national best practices in pedestrian design (such as the NACTO Urban Street Design Guide). This map helps inventory the pedestrian environment and understand needs.

Factors that were used to create this map are included below:

- **Pedestrian Zones**
  - Usable Walkway
  - Visual Interest
  - Traffic Calming
  - Walkway Quality
  - Walkway Accessibility
  - Landscape Buffer and Street Trees
  - Number of Travel Lanes
  - Posted Speed
  - Lighting
  - Truck Routes
  - Crosswalk Frequency
- **Signalized Intersection Crosswalks**
  - Crossing Distance
  - Pedestrian Signal Accessibility
  - Accessibility
  - Right-turn Slip Lanes
  - Pedestrian Scrambles or Protected Lefts

The Pedestrian Comfort Map establishes criteria that represents high, medium, and low comfort for each variable above, based on how much stress pedestrians will tolerate in different environments. The map on this page illustrates the result of corridors and intersections where more than one third of the variables were scored as low comfort.





## 4.0 SAFETY TRENDS, STRATEGIES & ACTIONS

### 4.1 SAFETY TRENDS

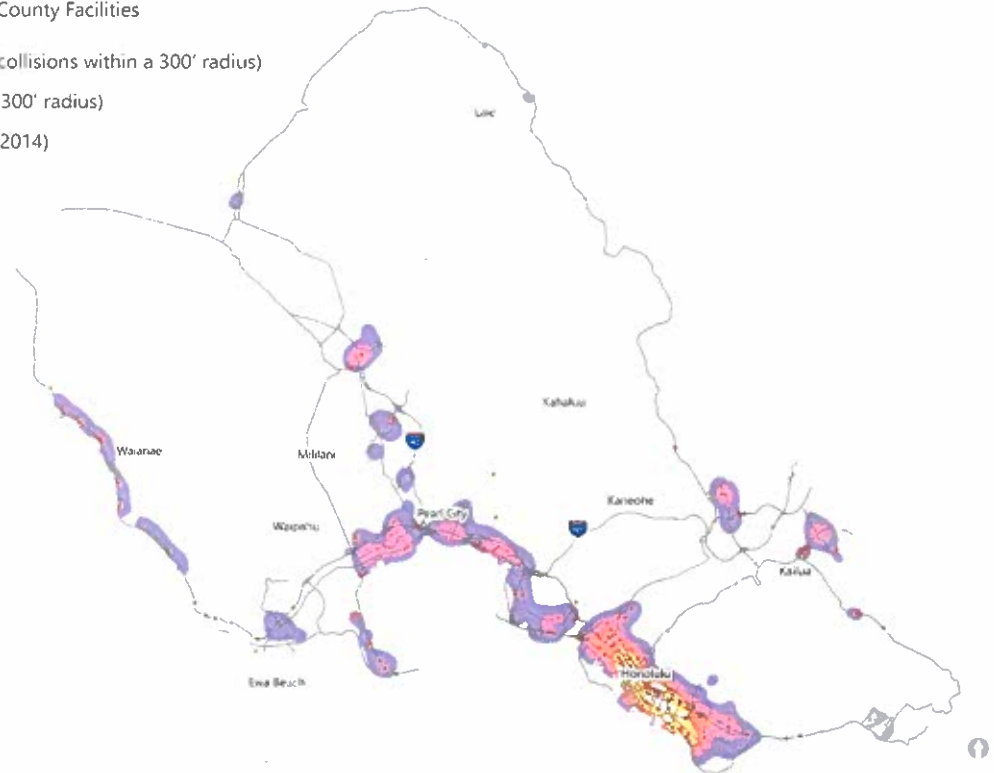
#### ISLAND-WIDE COLLISION LOCATION OVERVIEW

The collision density maps were created using data from the Hawaii State Department of Health's online database, which represents an overview of collisions that have occurred island-wide, including streets that are owned and maintained by the State. This data does not contain information on specific crash details or crash severity; therefore, the focus was on high crash locations. Crash location is important, but to identify solutions, more information is needed. To systematically assess collision trends, both collision information (type of collision and severity) and the key environmental factors surrounding each collision, such as roadway network characteristics, demographics, and roadway conditions need to be recorded and reported. This additional information can be used to identify the primary causes of traffic injuries and match the needs identified with efficient and cost-effective engineering countermeasures. This Plan recommends improvements to the State Department of Health's collision monitoring and reporting program, which require participation from Oahu first responders and the City and County of Honolulu. These programmatic changes are critical if the City hopes to achieve zero fatalities or serious injuries on City- and County-owned streets by 2030 as recommended in this Plan.

Data from the National Highway Traffic Safety Administration's Fatality Analysis Reporting System was used to identify locations of pedestrian fatalities.

Collision Density on State and County Facilities  
(2007 to 2014)

- High (approximately 20 collisions within a 300' radius)
- Low (1 collision within a 300' radius)
- Fatal Collisions (2007 to 2014)





## COLLISION STATISTICS OVERVIEW

Traffic crashes resulting in pedestrian injuries and fatalities are a major and on-going issue on Oahu. In the 5-year period between 2014 and 2018, traffic crashes resulted in the death of 105 pedestrians and 2,495 pedestrians sustained injuries requiring an ambulance response; this is an annual average of 21 pedestrian fatalities and 499 pedestrian injuries. With the exception of 2017, each year has seen over 20 pedestrian fatalities and 2018 was a record-high year.

There has been a significant increase in pedestrian fatalities and injuries in recent years. In 5 years between 2009-2013 there were a total of 76 pedestrian fatalities and in the 5-years between 2014-2018 there were 105 pedestrian fatalities, a 38% increase. The rise in pedestrian fatalities has been accompanied by a slight overall decrease in all traffic fatalities due to a substantial decrease in motorist fatalities (between 2009-2013 there were 190 motorist fatalities and between 2014-2018 there were 160 fatalities, a 19% decrease).

**Table 2: Pedestrian Fatalities and Injuries (2014-2018)**

	2014	2015	2016	2017	2018	5-YEAR TOTAL 2014-2018	ANNUAL AVERAGE 2014-2018
FATALITIES	24	21	21	12	27	105	21
INJURIES (EMS RESPONSE)	520	475	488	506	506	2495	499

**Table 3: Change in Pedestrian Fatalities and Injuries (2009-2018)**

	FATALITIES	INJURIES
2014-2018	21 fatalities per year (38% increase)	499 injuries per year (10% increase)
2009-2013 (*2009 NOT AVAILABLE FOR INJURIES)	15.2 fatalities per year	452 injuries per year



## DISPARATE COMMUNITY IMPACTS

While pedestrian safety is a community-wide issue, it impacts certain populations disproportionately. Analysis of pedestrian fatalities on Oahu between 2014-2018 reveals two prominent trends. Kupuna, those 65 years of age and older, are nearly five times as likely as those under 65 to be killed while walking. Environmental Justice and Title VI

(EJ/T6) areas are those with high percentages of minority populations and people in poverty. These areas experience significantly higher rates of pedestrian fatalities than non-EJ/T6 areas and the disparity is even greater when only considering high poverty EJ/T6 areas.

**Table 4: Pedestrian Fatalities by Age (2014-2018)**

AGE	FATALITIES	% OF FATALITIES	POPULATION	% OF POPULATION	FATALITIES PER 100,000
UNDER 20	3	3%	233,491	23%	1.3
20-64	52	49%	594,463	60%	8.7
65 AND OLDER	46	44%	164,651	17%	27.9
*UNKNOWN	3	-	-	-	-

**Table 5: Pedestrian Fatalities in Environmental Justice/Title VI Areas (2014-2018)**

AGE	FATALITIES	% OF FATALITIES	POPULATION	% OF POPULATION	FATALITIES PER 100,000
EJ/T6 - ALL	57	54%	313,884	33%	18.2
EJ/T6 - HIGH POVERTY ONLY (EJ/T6 SUBSET)	33	31%	113,515	12%	29.1
NON-EJ/T6 AREA	48	46%	639,116	67%	7.5



## TRENDS ON CITY AND COUNTY STREETS

The Plan addresses engineering improvements only for City and County of Honolulu facilities, therefore additional analysis was conducted to identify safety trends for those collisions that occurred on City and County of Honolulu facilities. In the period from 2014-2018 of the 105 pedestrians killed on Oahu, 46 (44%) were killed on City and County of Honolulu facilities. While concurrent data is not available for pedestrian injuries, a review of police traffic crash reports found that in the period from 2017-2019, 65% of Oahu's pedestrian crashes occurred on City and County of Honolulu streets. The fact that City and County of Honolulu facilities have a significantly greater portion of pedestrian injuries relative to the portion of pedestrian fatalities is likely explained by the higher speeds on the State facilities most of which have speed limits of 35 mph or higher. Pedestrian crashes with facilities that have speed limits greater than 30 mph are more likely to result in more severe injuries and death.

Location and street characteristic trends were analyzed for pedestrian fatalities on City and County of Honolulu and findings include that the majority (54%) of fatalities occurred on arterial streets and when combined with major collector streets they account for 76% of all fatalities. 72% of fatalities occurred at intersections pedestrian crossing locations either signalized or unsignalized. Urbanized streets with speed limits of 30 or higher mph represent only 2% of City streets, yet account for 24% of fatalities.

**Urbanized streets with speed limits of 30 mph or higher represent only 2% of City streets, yet account for 24% of fatalities.**

**Table 6: Location Characteristics of Pedestrian Fatalities on City Streets (2014-2018)**

LOCATION TYPE	TOTAL	%
Non-Intersection/Crossing	13	28%
Signalized Intersection	15	35%
Uncontrolled Crossing/Unsignalized Intersection	17	37%
All-way Stop Intersection	1	2%
STREET CLASSIFICATION (highest shown for intersections)	TOTAL	%
Arterial	25	54%
Major collector	10	22%
Minor collector	6	13%
Local/no designation	5	11%
SPEED LIMIT (highest shown for intersections)	TOTAL	%
30-35 mph	11	24%
25 mph	34	74%
15 mph	1	2%



## 4.2 HIGH PEDESTRIAN INJURY LOCATIONS

High Pedestrian Injury Corridors and Intersections/Crossings account for a disproportionate share of pedestrian injuries and fatalities on City and County of Honolulu streets. A detailed analysis was conducted of pedestrian crashes, injuries, and fatalities on City and County of Honolulu streets to identify High Pedestrian Injury Corridors and Intersections/Crossings. The analysis utilized Honolulu Police Department, Hawaii Department of Health/Emergency Medical Services, and Fatality Analysis Reporting System data. Addressing pedestrian safety at these corridors and intersections/crossings is critical to addressing pedestrian safety in the City and County of Honolulu.

The Plan identifies 38 High Pedestrian Injury Corridors and 107 High Pedestrian Injury Intersections/Crossings. These High Pedestrian Injury Locations were categorized as Tier 1 very high injury and Tier 2 high injury. Tier 1 and Tier 2 injury levels are defined in **Appendix B**.

The **Tables 7 and 8** provide details exact location and extents on all High Pedestrian Injury Location including in which Development Plan area they are located in.

Note: This analysis was limited to City and County of Honolulu streets and does not include State, federal or private streets.

*The High Pedestrian Injury Corridors account for 60% of fatalities and 43% of pedestrian injuries on City and County of Honolulu streets, while these 31 miles only represents 2% of City street network.*

## IMPROVEMENTS IN THE WORKS: MAKING PROGRESS

While this is City and County of Honolulu's comprehensive list of High Pedestrian Injury Locations, safety improvements were already under development or being actively considered as part of planning projects at seven of the High Pedestrian Injury Corridors and 24 of the High Pedestrian Injury Intersections/Crossings. Many of these locations will receive improvements within the next five years. These locations that had safety improvements underway are shown in **bold** in Tables 7 and 8.

### High Pedestrian Injury Corridors

- Comprise 2% of City Streets
- Account for 60% of All Pedestrian Fatalities
- Account for 43% of All Pedestrian Injuries

### Table 7: High Pedestrian Injury Corridors

[illegible]

\*Emphases in the Works are shown in bold.



[illegible]

Improvements in the Works are shown in bold:



**Table 8 (continued): High Pedestrian Injury Intersections/Crossings**[illegible]<sup>a</sup>Measurements in this work are shown in bold.**Table 8 (continued): High Pedestrian Injury Intersections/Crossings**[illegible]



### Legend

-  High Pedestrian Injury Spot - Tier 1
-  High Pedestrian Injury Spot - Tier 2
-  High Pedestrian Corridor - Tier 1
-  High Pedestrian Corridor - Tier 2

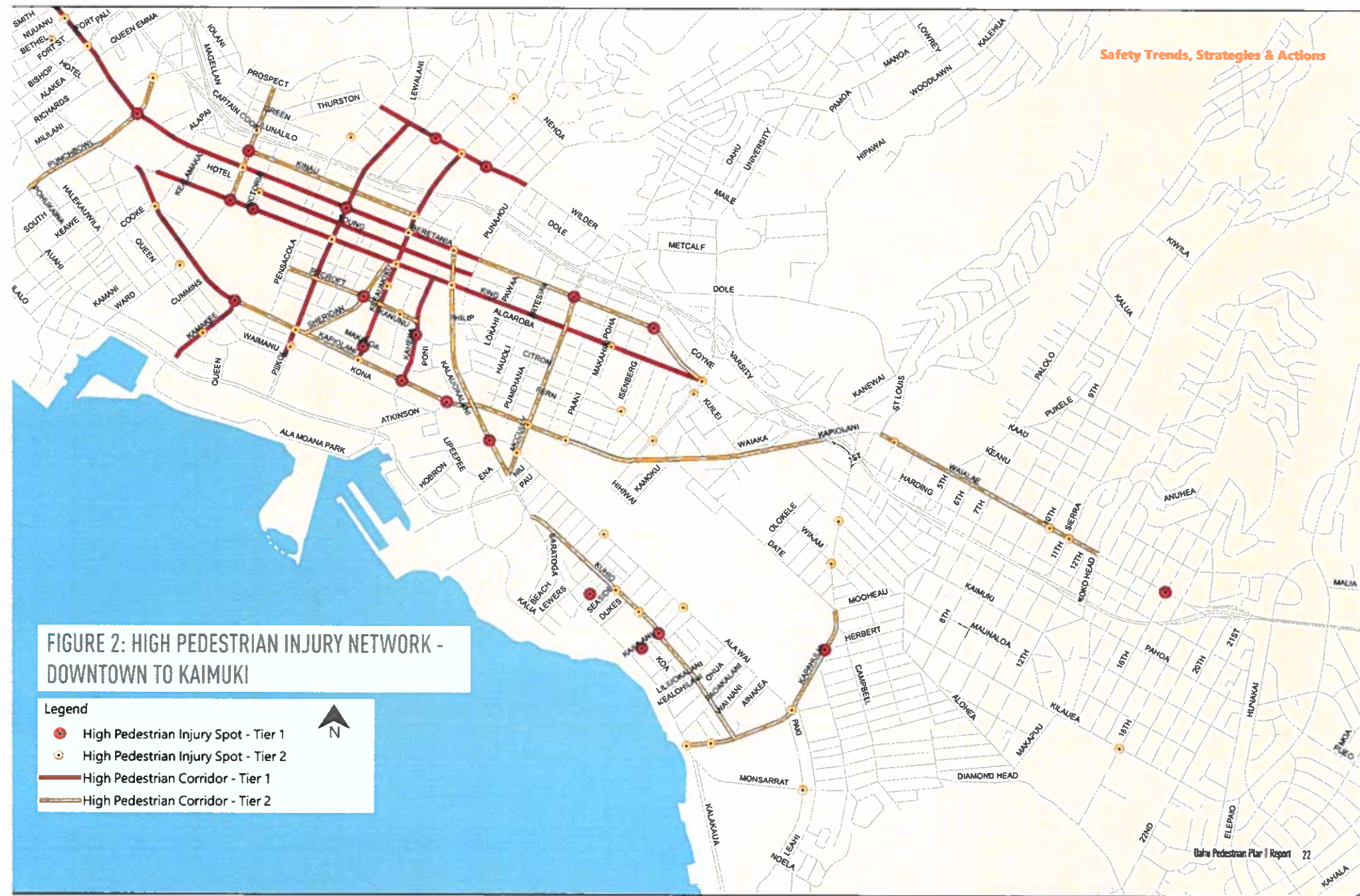




FIGURE 2: HIGH PEDESTRIAN INJURY NETWORK - DOWNTOWN TO KAIMUKI

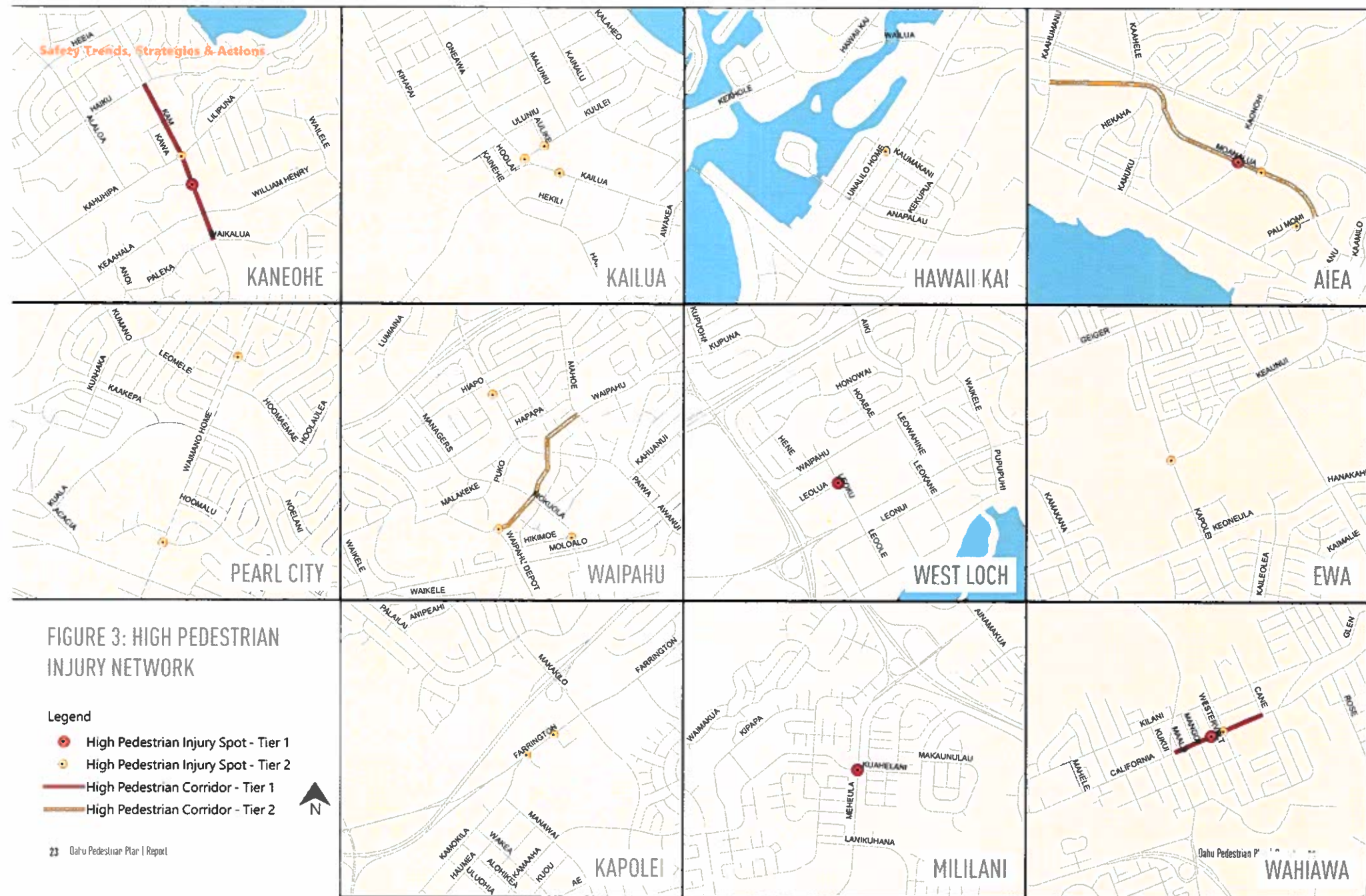
Legend

- High Pedestrian Injury Spot - Tier 1
- High Pedestrian Injury Spot - Tier 2
- High Pedestrian Corridor - Tier 1
- High Pedestrian Corridor - Tier 2





Safety Trends, Strategies & Actions



## COMMON ROADWAY CHARACTERISTICS

Common roadway characteristics at Oahu's High Pedestrian Injury Corridors and Intersections/Crossings are summarized below. It's important to recognize these common characteristics as they provide insights into needed changes to address safety at these locations and streets around Oahu.

### Corridors

Arterials with:

- 4 or more lanes
- Speed limits over 30 mph
- Lack of frequent well-designed crossings

### Signalized Intersections

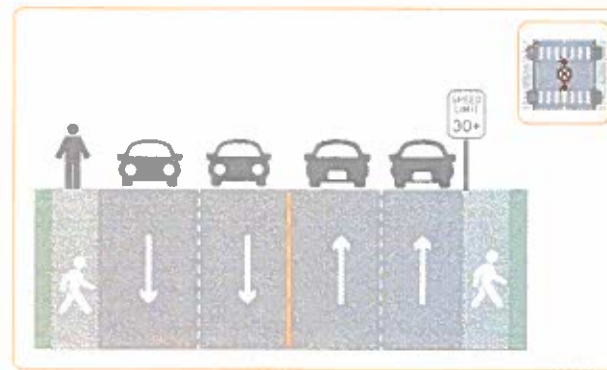
Arterials with:

- Wide crossings  
(most 4 or more lanes and many 6 or more lanes)
- Speed limits over 30 mph
- Turning vehicle conflicts
- Missing pedestrian crossing leg or channelized right turns

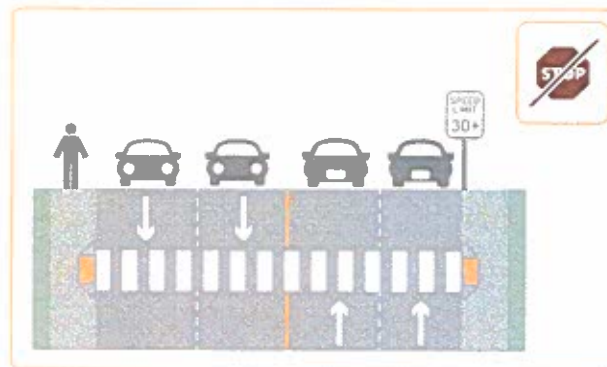
### Uncontrolled Crossings

Wide crossings with:

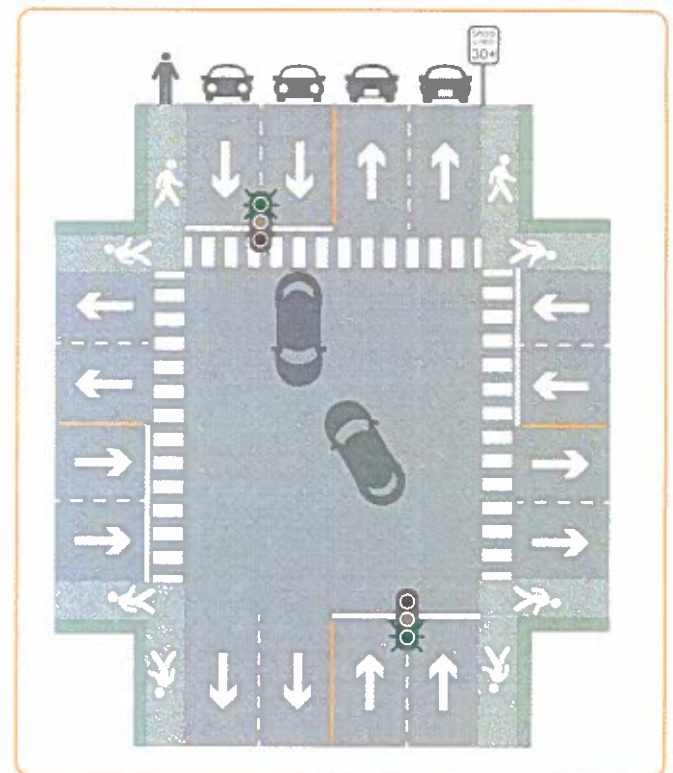
- 4 or more lanes
- Marked crosswalks only
- Lack of medians, curb extensions, or other crossing enhancement



Example



Example of a well-designed crossing



Example of a well-designed intersection



## 4.3 STRATEGIES & TOOLS

This section is intended to complement the Honolulu Complete Streets Design Manual by highlighting some of the most important strategies and tools to design safer streets for pedestrians. While the Plan does not prescribe safety improvements for specific locations, this section identifies some of the most promising solutions in our toolkit.

### STRATEGY 1: IMPROVE SAFETY AT SIGNALIZED INTERSECTIONS

#### 1.1 REDUCE CROSSING DISTANCE/EXPOSURE

##### TOOL 1.1.1: CURB EXTENSIONS

Curb extensions widen the sidewalk at intersections or midblock crossings to shorten the pedestrian crossing distance, make pedestrians more visible to vehicles, and reduce the speed of turning vehicles.



Curb Extensions

##### TOOL 1.1.2: CROSSINGS ON ALL LEGS

Providing crossing on all legs of an intersection reduces the need for a pedestrian to cross multiple legs to access their desired destination. This allows pedestrians to travel in a more direct path and reduces the number of potential conflicts with vehicles.



Crossings On All Legs

##### TOOL 1.1.3: CROSSING REFUGE ON WIDE STREETS

Pedestrian refuge islands (or crossing refuges) provide a protected area for pedestrians to wait at the center of the roadway. They reduce the exposure time for pedestrians crossing the intersection. They simplify crossings by allowing pedestrians to focus on one direction of traffic at a time.



Crossing Refuge on Wide Streets



## 1.2 REDUCE PEDESTRIAN-MOTORIST CONFLICTS WITH SIGNAL PHASING

### TOOL 1.2.1: PEDESTRIAN SCRAMBLE

A pedestrian scramble is a form of pedestrian 'walk' phase at a signalized intersection in which all vehicular traffic is required to stop, allowing pedestrians to safely cross through the intersection in any direction, including diagonally.

#### Implementation Success Story

Kalaheua Avenue is one of Waikiki's main streets with high levels of walking and motorized traffic. In 2013, pedestrian scrambles were installed at two intersections. The data has been promising for the safety benefits of the treatment – in the 5 years prior to installation the two intersection had a combined 5 pedestrian injuries and in 5-years after installation there was only 1 pedestrian injury at the intersections.



Kalaheua Avenue and Kalia Avenue, Honolulu, HI



40th Street and 4th Ave, New York City

### TOOL 1.2.2: ALL-PEDESTRIAN PHASE

An all-pedestrian phase provides an all-red phase for vehicles while providing pedestrian with a walk indication. Unlike a pedestrian scramble, diagonal crossings are not permitted during an all-pedestrian phase.

### TOOL 1.2.3: LEADING PEDESTRIAN INTERVAL

A leading pedestrian interval (LPI) gives people walking a head start, making them more visible to drivers turning right or left. The "WALK" signal comes on a few seconds before vehicles get their green light. An LPI may be used in combination with No Right Turn on Red restrictions.

### TOOL 1.2.4: PROTECTED LEFT TURNS

Protected left turns provide a protected green arrow for left-turning vehicles while showing a red light for both on-coming traffic and parallel pedestrian crossings. Protected left turns eliminate conflicts between pedestrians and left-turning vehicles.

#### Implementation Success Story

Dillingham Boulevard and Waiakamilo Road are two major streets that serve regional and local motorized traffic and high levels of people on foot in Kalihi. Their intersection has a history of safety issues and is a High Pedestrian Injury Intersection/Crossing. In 2014, the intersection's traffic signal was modified to provide protected left turns to separate left turning motorists from crossing pedestrians. The safety data indicates a positive change – in the 5-years prior to installation there were one pedestrian fatality and 3 injuries compared to no fatalities and 2 injuries in the 5 years after installation.



Protected Left Turns at Kalihi



Protected Left Turns at Kalihi

### TOOL 1.2.5: PROTECTED RIGHT TURNS

Protected right turns provide a green arrow phase for right-turning vehicles while showing a red light for conflicting movements. This avoids conflicts between right-turning traffic and bicyclists or pedestrians crossing the intersection on their right.

### TOOL 1.2.6: PROHIBIT RIGHT TURNS ON RED

Prohibiting right turns on red (RTOR) can help prevent collisions between vehicles turning right on red from one street and through vehicles on the cross street, and collisions involving pedestrians who have a green indication. These turn prohibitions should be considered at skewed intersections, or where exclusive pedestrian "WALK" phases, LPIs, sight distance issues, or high pedestrian volumes are present.



Protected Right Turns at Kalihi



No Right Turn on Red Sign at Kalihi

### 1.3 REDUCE SPEEDS OF TURNING VEHICLES

#### TOOL 1.3.1: ELIMINATE CHANNELIZED RIGHT TURNS

Eliminating channelized right turns removes the potential conflict between pedestrians and motorists at these locations and helps to reduce vehicle turning speeds. Without a channelized right turn, the vehicle must fully enter the intersection and come to a complete stop before executing the right turn (except when the right turn receives the green light phase as the motorist approaches the intersection), which reduces the speed of the turning vehicle. Often the turning radii at an intersection is much smaller without a channelized right turn, which also reduces the speed of the turning vehicle.

#### TOOL 1.3.2: RAISED CROSSINGS AT CHANNELIZED RIGHT TURNS

Raising crossings at channelized right turns elevate the crosswalk to make pedestrians more visible to approaching vehicles. At yield controlled or free channelized right turns they encourage motorists to yield to pedestrians and reduce vehicle speed.

#### TOOL 1.3.3: TIGHT TURNING RADIUS

Tightening the turning radius forces motorists to reduce their speed in order to safely execute right turns. Tightening a turning radius is usually achieved through the installation of a curb extension which also allows pedestrians to be more visible to motorists before entering the crosswalk.

#### TOOL 1.3.4: PROTECTED INTERSECTIONS

Protected intersections provide separate spaces for bicycles, pedestrians, and vehicles at an intersection by provided grade separation or vertical barriers, like curbs, between each user type. These barriers also require vehicles to make tighter right turns, such that they cross the bicycle and pedestrian crossings at a right angle that offers improved visibility, eliminating the need to look over their shoulder for conflicts. These intersections also typically require vehicles to wait at a location that is set back from bicycles and pedestrians at a red light, allowing for improved visibility, and they may include signal modifications that provide separate phasing for most modes, reducing potential conflicts.



Eliminating channelized right turns.  
Photo Credit: American City Cycle



Raised crossings at channelized right turns.



Tight turning radius.



Protected intersection design.

## 1.4 MAXIMIZE OPPORTUNITIES FOR WALKING IN SIGNAL PHASE

### TOOL 1.4.1: PEDESTRIAN RECALL

Pedestrian recall provides a pedestrian signal phase regardless of whether the pedestrian button is actuated.

### TOOL 1.4.2: REST-IN-WALK ALONG MAJOR STREETS

Rest-in-walk along major streets provides a walk signal during the (coordinated main street) green phase, providing the maximum possible time for pedestrians to cross within the signal phase.

### TOOL 1.4.3: ADDITIONAL CROSSING TIME

Additional crossing time can be provided to ensure pedestrian can safely cross the street during the pedestrian phase. Additional crossing time should be provided where slower pedestrians routinely use the crosswalk, such as locations near schools, parks, or senior centers.

### TOOL 1.4.4: SHORT SIGNAL CYCLES

Shortened signal cycles allow for less time between pedestrian cycles allowing pedestrians to wait at the curb for less time before safely crossing the street.

## 1.5 CONVERT INTERSECTION TO ROUNDABOUT

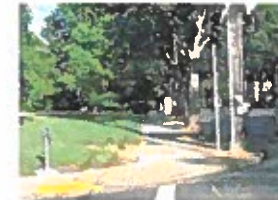
- Due to the deflection points and yielding that naturally occur while a vehicle is navigating through a roundabout, vehicle speeds are reduced. Additionally, most roundabouts allow pedestrians to cross one direction of traffic at a time, allowing for a safer and more comfortable pedestrian experience.

## 1.6 RED LIGHT ENFORCEMENT CAMERAS

- Red light enforcement cameras provide automated enforcement of motorists entering the intersection on red. The automated enforcement reduces red light running and the danger it poses to pedestrians.

## 1.7 STREET LIGHTING AT INTERSECTIONS

- Improving lighting for people on the sidewalk increases the ability of a driver to identify people that they must yield to, this is particularly important at intersections.



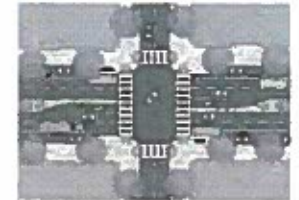
Pedestrian Recall



Rest-In-Walk Along Major Street  
Hwy 201/202 - Washington County



Additional Crossing Time



Short Signal Cycle



Convert Intersection to Roundabout



Red Light Enforcement Camera  
Hwy 201/202 - Washington County  
Interchange



Street Light at Intersection  
Hwy 201/202



## STRATEGY 2: IMPROVE SAFETY AT UNCONTROLLED CROSSINGS

### 2.1 REDUCE CROSSING DISTANCE/EXPOSURE

#### TOOL 2.1.1: REFUGE ISLANDS

Pedestrian refuge islands (or crossing refuges) provide a protected area for pedestrians to wait in the center of the roadway. They reduce the exposure time for pedestrians crossing the intersection. They simplify crossings by allowing pedestrians to focus on one direction of traffic at a time.

#### TOOL 2.1.2: CURB EXTENSIONS

Curb extensions widen the sidewalk at intersections or midblock crossings to shorten the pedestrian crossing distance, make pedestrians more visible to vehicles, and to reduce the speed of turning vehicles.

#### TOOL 2.1.3: LANE RECONFIGURATIONS

Lane reconfigurations or lane diets often reduce the number of lanes on a roadway which reduces the crossing distance for pedestrians and allows pedestrians to be more visible while crossing the street.



Refuge island



Curb extension



Lane reconfiguration to provide 15' minimum crossing distance

## 2.2 INCREASE VISIBILITY OF CROSSING

### TOOL 2.2.1: RECTANGULAR RAPID FLASHING BEACON

Rectangular rapid flashing beacons (RRFBs) can be installed overhead or roadside and include pedestrian-activated flashing lights and additional signage that enhance the visibility of marked crosswalks and alert motorists to pedestrian crossings. RRFBs are appropriate on higher speed roadways or multi-lane roadways with lower speeds.



Rectangular Rapid Flashing Beacon

### TOOL 2.2.2: PEDESTRIAN HYBRID BEACON

Pedestrian hybrid beacons (PHB) are pedestrian-activated beacons used at mid-block crosswalks to notify oncoming motorists to stop with a red indication. These are appropriate on high speed roadways that are also multi-lane or high volume, where a PHB will be more effective in achieving driver compliance than an RRFB.



Pedestrian Hybrid Beacon

### TOOL 2.2.3: IN-STREET PEDESTRIAN CROSSING SIGNS

In-street pedestrian crossing signs are signs indicating potential pedestrian presence and are installed on the side of the roadway and on lane lines to alert motorists to pedestrian crossings.



In-Street Pedestrian Crossing Sign  
Pedestrian Crossing Sign (Advance Warning) (Yield)



Prohibit parked vehicles to provide adequate sight triangle for crossing  
Prohibit parked vehicles to provide adequate sight triangle for crossing

### TOOL 2.2.4: PARKING RESTRICTIONS ON CROSSWALK APPROACH

Parking restrictions of crosswalk approaches increase vehicular sight distance allowing drivers to see the entire crosswalk as they approach and see pedestrians before they step into the crosswalk.



Advanced Stop Bar



Lighting

### TOOL 2.2.5: ADVANCED STOP BAR

Advanced stop bars are placed ahead of crosswalks at stop signs and signals to reduce instances of vehicles encroaching on the crosswalk. These stop bars can reduce the likelihood of a multiple-threat crash at unsignalized midblock crossings.

### TOOL 2.2.6: LIGHTING

Adequate nighttime lighting increases the visibility of pedestrian in the crosswalk at all times of the day. Lighting is particularly important at pedestrian crossing points to ensure pedestrians are visible to approaching motorists.

### TOOL 2.2.7: SOLID LANE LINE TREATMENT

Solid lane line treatments discourage weaving behavior of vehicles between lanes. When placed near a crossing location it can increase awareness from drivers that they are approaching a crosswalk where they should yield.



Solid Lane Line Treatment

## 2.3 REDUCE SPEEDS OF APPROACHING MOTORISTS

### TOOL 2.3.1: RAISED CROSSWALKS

Raised crosswalks are locations where a crosswalk is raised to the same level as the sidewalk to make pedestrians more visible to approaching vehicles. Raised crosswalks are typically located at midblock crossings and they encourage motorists to yield to pedestrians by reducing vehicle speeds.

### TOOL 2.3.2: RAISED INTERSECTIONS

Raised intersections are locations where an entire intersection is raised to the same level as the sidewalk. This makes pedestrians crossing all legs of the intersection more visible to approaching vehicles and causes motorists to reduce vehicle speeds when entering the intersection.

### TOOL 2.3.3: SPEED HUMPS

Speed humps can be placed along a roadway segment or approaching a crossing. These humps in the roadway cause motorists to reduce vehicle speed. Speed humps placed frequently (approximately every 250 feet) reduce motorist speeds along the entire street, providing pedestrian safety benefits along the entire street.

### TOOL 2.3.4: TIGHT TURNING RADIUS

Tightening the turning radius forces motorists to reduce their speed in order to safely execute right turns. Tightening a turning radius is usually achieved through the installation of a curb extension which also allows pedestrians to be more visible to motorists before entering the crosswalk.

### TOOL 2.3.5: NARROW LANES/EDGE OF LANE LINE/PARKING LINE

Narrowing lanes causes vehicles to be closer together while traveling along a roadway segment. This causes motorists to reduce their vehicle speed in order to feel comfortable in the lane.

### TOOL 2.3.6: NEIGHBORHOOD TRAFFIC CIRCLES

Neighborhood traffic circles create deflection points for vehicle movements through an intersection which slow vehicle speeds. The rotational intersection design eliminates hazards to pedestrians associated with left turning vehicles. Neighborhood traffic circles can be combined with speed humps to provide adequately spaced traffic calming measures to maintain low speeds along the street.

## 2.4 RELOCATE OR CONSOLIDATE CROSSINGS

- Relocating or consolidating crosswalks can be used as a tool to address sight distance issues at an existing marked crosswalk. If an existing marked crosswalk location fails to meet sight distance requirements and the sight distance can not be improved by design modifications (such as installing a curb extension, installing a crossing median, or removing an obstruction), the crosswalk can be relocated to a nearby location that meets sight distance requirements. The new location should be within 300 feet in order to serve the same users and land use.



Raised Crosswalk



Raised Intersection  
Pike Street, Seattle, WA



Speed Hump



Tight Turning Radius



Narrow Lane/Edge of Lane Line/Parking Line



Neighborhood Traffic Circle



Relocated Crosswalk



## STRATEGY 3: IMPROVE SAFETY CORRIDOR WIDE

### 3.1 PROVIDE ADEQUATE WALKWAYS

- Adequate walkways allow pedestrians to have a space separate from vehicles in which it is safe to walk. See **Chapter 5.3** for more details on walkways.

### 3.2 PROVIDE FREQUENT WELL-DESIGNED CROSSINGS

- Frequent well-designed crossings allow pedestrians to access more destinations without having to walk out of their way to get to a safe crossing. Providing additional crossings also reduces the need to cross mid-block or jaywalk to access certain destinations. In accordance with the Honolulu Complete Streets Manual, a well-designed crossing should be provided at least every 660 feet in urban areas.

### 3.3 IMPLEMENT LANE RECONFIGURATIONS

#### TOOL 3.3.1: ROAD DIETS

Lane reconfigurations or road diets often reduce the number of lanes on a roadway which reduces the crossing distance for pedestrians and allows pedestrians to be more visible while crossing the street.

#### Implementation Success Story

*Kamehameha IV Road is a major neighborhood street connecting two schools, a large park, and many residents. The 4-lane street was transformed with a road diet converting it to 1 lane in each direction, a center left turn lane, and bike lanes. The initial safety numbers are positive for pedestrians and all users. In the 2 years following implementation there have been no pedestrian injuries compared to an average of 1.2 per year in the previous 5 years. Additionally, injuries for all roadway users have decreased from an average of 5.2 per year to 1.5 per year.*

#### TOOL 3.3.2: TURN LANE REMOVAL

Turn lane removal reduces the crossing distance allowing pedestrians to be exposed to potential conflicts with vehicles for a smaller distance and increasing visibility of pedestrian for all vehicles near the crossing.

#### Implementation Success Story

*The King St Protected Bike Lane was implemented as a pilot project to provide a high quality bikeway on major cross-town arterial. The project included reducing the street from 6 lanes to 5 lanes and resulted in an additional buffer between pedestrians and motorized traffic. Data indicates a significant improvement for pedestrian safety has occurred: along the 2-mile section in the 4 years before implementation there were 50 pedestrian injuries and in the 4 years after implementation there were 25 pedestrian injuries, a 50% reduction.*



Provide Adequate Walkways



Provide Frequent Well-Designed Crossings



Kamehameha IV Road Road Diet



King St Protected Bike Lane Implementation with the new 5-Lane Street

### 3.4 IMPLEMENT LOW-TRAFFIC, LOW-SPEED NEIGHBORHOOD STREETS

#### TOOL 3.4.1: SPEED HUMPS

Speed humps can be placed along a roadway segment or approaching a crossing. These humps in the roadway cause motorists to reduce vehicle speed. Speed humps should generally be placed approximately every 250 feet or used in combination with other traffic calming features at such spacing to reduce motorist speeds along the entire street.

#### TOOL 3.4.2: DIVERTERS

Diverters force vehicles to turn instead of being able to continue straight. These turns cause vehicle speeds to be reduced and limits cut-through traffic in residential communities.

### 3.5 LIMIT DRIVEWAY EXPOSURE

#### TOOL 3.5.1: LIMIT DRIVEWAY WIDTH AND THE NUMBER OF DRIVEWAYS

Limiting the number of driveways and limiting driveway width reduces conflict points between pedestrians and vehicles accessing driveways.

#### TOOL 3.5.2: RESTRICT LEFT TURN INTO AND OUT OF DRIVEWAYS ON MULTI-LANE STREETS

Restrict left turns into and from driveways reduces potential conflicts with on-coming traffic and the need for motorists to accelerate quickly to take advantage of a brief gap in traffic, resulting in improved safety for pedestrians crossing the driveway.

## STRATEGY 4: IMPROVE SAFETY SYSTEM WIDE

### 4.1 DESIGN AND RETROFIT FOR TARGET SPEEDS

#### TOOL 4.1.1: SPEED MANAGEMENT ON NEIGHBORHOOD AND MAJOR STREETS

Speed management on neighborhood and major streets can be achieved using various countermeasures, including, but not limited to, road diets, speed humps, raised crosswalks, traffic signal progression, speed enforcement and speed feedback signs.

### 4.2 REDUCE SPEED LIMITS

#### TOOL 4.2.1: REDUCE SPEED LIMITS ON MAJOR URBAN STREETS TO 25MPH

#### TOOL 4.2.2: REDUCE DEFAULT SPEED LIMIT TO 20MPH

Studies show that pedestrian fatality rates increase exponentially with speed. Thus, reducing vehicle speeds in bicycle or pedestrian zones is a key strategy for enhancing safety. For locations where the speed limit has not otherwise been established in the City and County of Honolulu, the default speed limit is 25 mph. The Revised Ordinances of Honolulu (ROH) provides the Director of the Department of Transportation Services with the authority to reduce the posted speed limit if an engineering and traffic study demonstrates that the speed limit is greater than is reasonable or safe based on local conditions.



Speed Humps



Diverters



Limiting the Entry of Driveways  
Honolulu Department of Transportation



Restrict Left Turn Into and Out of Driveways



Speed Humps along Major Streets



Speed Limit Reduction  
Honolulu Department of Transportation

## 4.4 ACTIONS

Table 9: Safety Actions

#	ACTION	RESPONSIBLE DEPARTMENT
1	Study and implement striping and signage improvements at High Pedestrian Injury Intersections/Crossings with In-House City and contracted resources	DTS, DFM
2	Plan and implement improvements on High Pedestrian Injury Corridors and Intersections/Crossings with Rehabilitation of Street projects	DTS, DDC
3	Program dedicated capital improvement funding to implement improvements at High Pedestrian Injury Corridors and Intersections/Crossings	DTS, DDC
4	Update the High Pedestrian Injury analysis regularly	DTS
5	Assess and implement signal enhancements that prioritize pedestrian safety at High Pedestrian Injury Corridors and Intersections/Crossings	DTS
6	Prioritize and implement crossing safety improvements near senior facilities	DTS
7	Retain a consultant to assist with technical analysis of lane reconfigurations on major streets	DTS
8	Implement 25mph speed limits on major streets in urbanized areas and on High Pedestrian Injury Corridors	DTS
9	Propose ordinance amendments to create new 20mph speed limit and make this the default speed limit and the speed limit for school zones	DTS, City Council
10	Develop and implement a comprehensive Vision Zero Action Plan	DTS, HPD, Mayor's office, City Council
11	Create and Maintain an up-to-date Crosswalk Upgrade List	DTS

## ACTIONS: EXPANDED DETAILS

## Vision Zero Action Plan

- Vision Zero established by Act 134 (2019) and Resolution 18-219
- A comprehensive strategy to eliminate all traffic deaths and severe injuries
- Online High Crash Network (HCN) for both streets and intersections, including equity analysis that will build on the High Pedestrian Injury Locations analysis in this Plan
- Vision Zero project prioritization list
- Establishment of an enforcement program focused on most important infractions and locations
- Guide, pledge, educational, and campaign materials
- Legislative recommendations
- Design recommendations and guidelines
- Community Outreach and engagement; website development
- Design testing and data evaluation

## Crosswalk Upgrade List

Oahu should have a Crosswalk Upgrade List that reflects current conditions and includes planned improvements to existing crosswalks throughout Oahu's pedestrian system. The Crosswalk Upgrade List will include a list of crosswalk improvements that are needed to enhance the safety of the crosswalk, but were not able to be installed at the time of crosswalk installation or are proposed for existing crosswalks but are awaiting appropriate funding.





## 5.0 PEDESTRIAN PRIORITY NETWORK NEEDS, STRATEGIES & ACTIONS

### 5.1 PEDESTRIAN PRIORITY NETWORK DESCRIPTION & INTENT

The Pedestrian Priority Network is the network of City and County of Honolulu streets and off-street paths that provide important pedestrian connections to transit, schools, employment and commercial centers, and other major destinations.

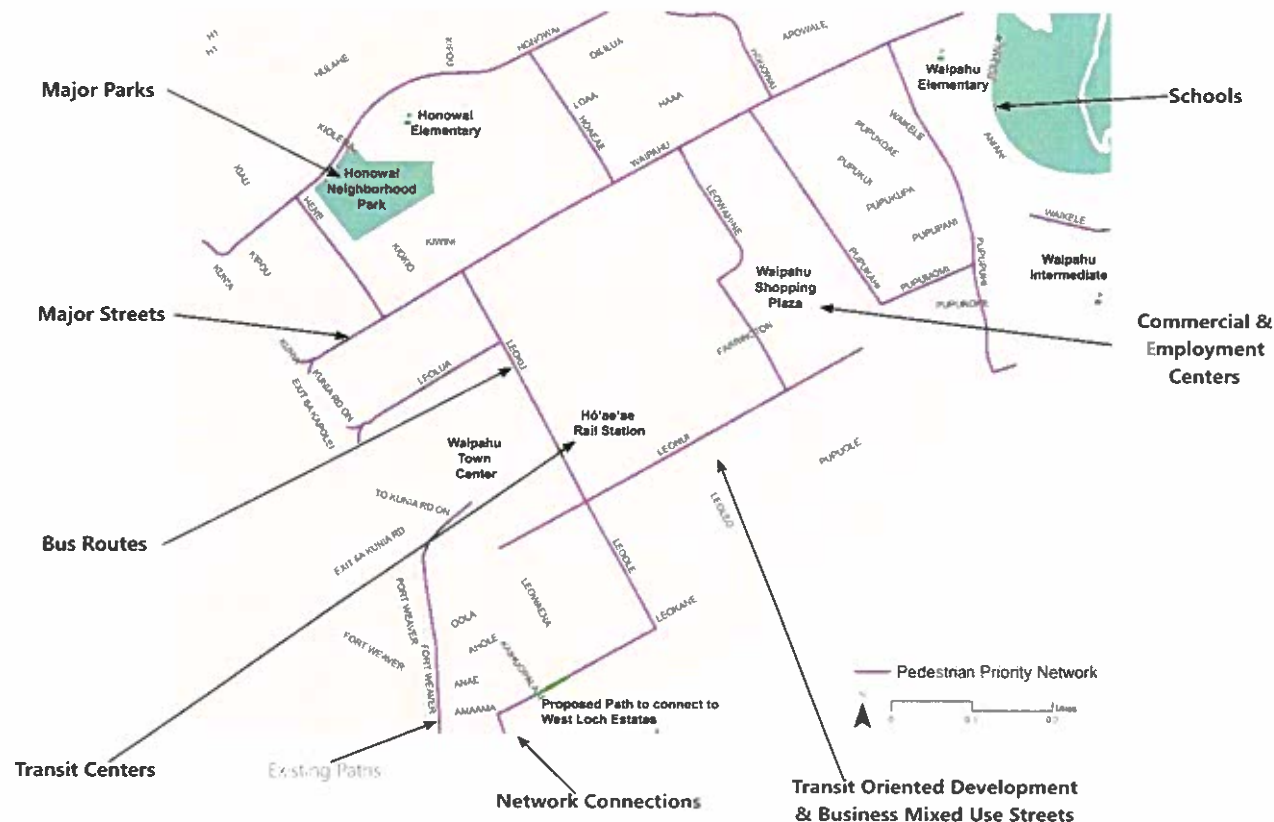
The pedestrian infrastructure needs of the entire City and County of Honolulu roadway system are overwhelming—the cost to provide just missing sidewalks, only one of the key pedestrian needs, is well over \$2.6 billion. In order to target limited resources and expend public funds efficiently, the City will use the Pedestrian Priority Network as the basis for identifying where pedestrian infrastructure improvements are most needed. For additional information about the methodology used to determine the Pedestrian Priority Network, see **Appendix A Pedestrian Priority Network Methodology**.

The Pedestrian Priority Network serves as the basis for walking on Oahu. The 393 miles of streets and 61 miles of off-street paths connect to transit, schools, major parks, commercial and employment centers, and other major destinations. **Figure 4** provides an overview of the factors that form the Pedestrian Priority Network. This network does not include state, federal, or private streets.

#### PEDESTRIAN PRIORITY NETWORK NEEDS: SAFETY

Collision data reinforces the need to focus resources on the Pedestrian Priority Network. The concentration of safety issues at High Pedestrian Injury Locations, outlined in Chapter 4, are all located within the extents of the Pedestrian Priority Network. The full extents of the Pedestrian Priority Network covers the vast majority of safety issues on City streets. Notably, 93% of pedestrian fatalities and 90% of pedestrian injuries on City and County of Honolulu streets occurred on the Pedestrian Priority Network, while the network itself only represents approximately 27% of City streets. In addition to addressing safety at the High Pedestrian Injury Locations described in **Chapter 4**, addressing safety on the Pedestrian Priority Network is necessary to achieve the City's safety goals.

#### FIGURE 4: WHAT FORMS THE PEDESTRIAN PRIORITY NETWORK?



## PEDESTRIAN PRIORITY NETWORK NEEDS: WALKWAY NETWORK

The Pedestrian Priority Network supports walking by providing a network of walkways – connecting thousands of Oahu residents and visitors every day to the places they need and want to go.

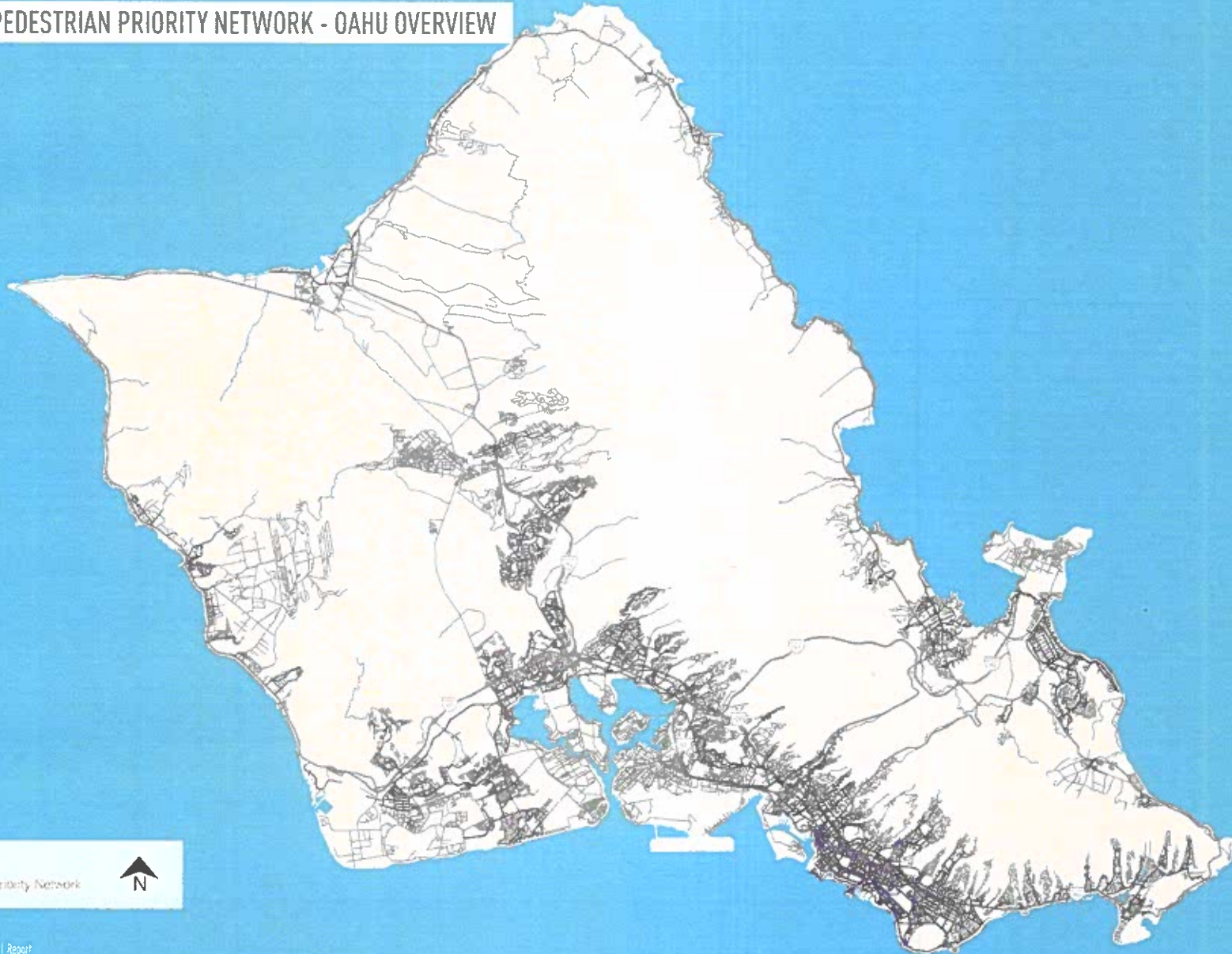
## PEDESTRIAN PRIORITY NETWORK OVERVIEW

- 393 miles
- 278 miles (71%) have improved walkways on both sides
- 47 miles (12%) have an improved walkway on only one side
- 68 miles (17%) have no improved walkway
- Adding together the all the missing improved walkways there is 183 miles (23%) measured by each side of the Pedestrian Priority Network that are missing improved walkways.

Sections missing walkways whether on one side or both sides provide barriers to walking.



FIGURE 5: PEDESTRIAN PRIORITY NETWORK - OAHU OVERVIEW



Legend

— Pedestrian Priority Network





## 5.2 WALKWAY FOCUS AREAS: MAJOR STREETS & SCHOOL ZONES

Within the Pedestrian Priority Network, Focus Areas were identified as the locations where walkway improvements should be made first. These improvements include building new walkways and upgrading existing walkways. A sample of the Focus Areas is shown in **Figure 6**. Combined, these Focus Areas make up 257 miles or nearly two-thirds (65%) of the Pedestrian Priority Network.

### SCHOOL ZONES

Walking is one of the most common ways for children to get to and from school. Providing safe walking routes to school is one of the most important and basic duties of the transportation system and a key priority of this Plan.

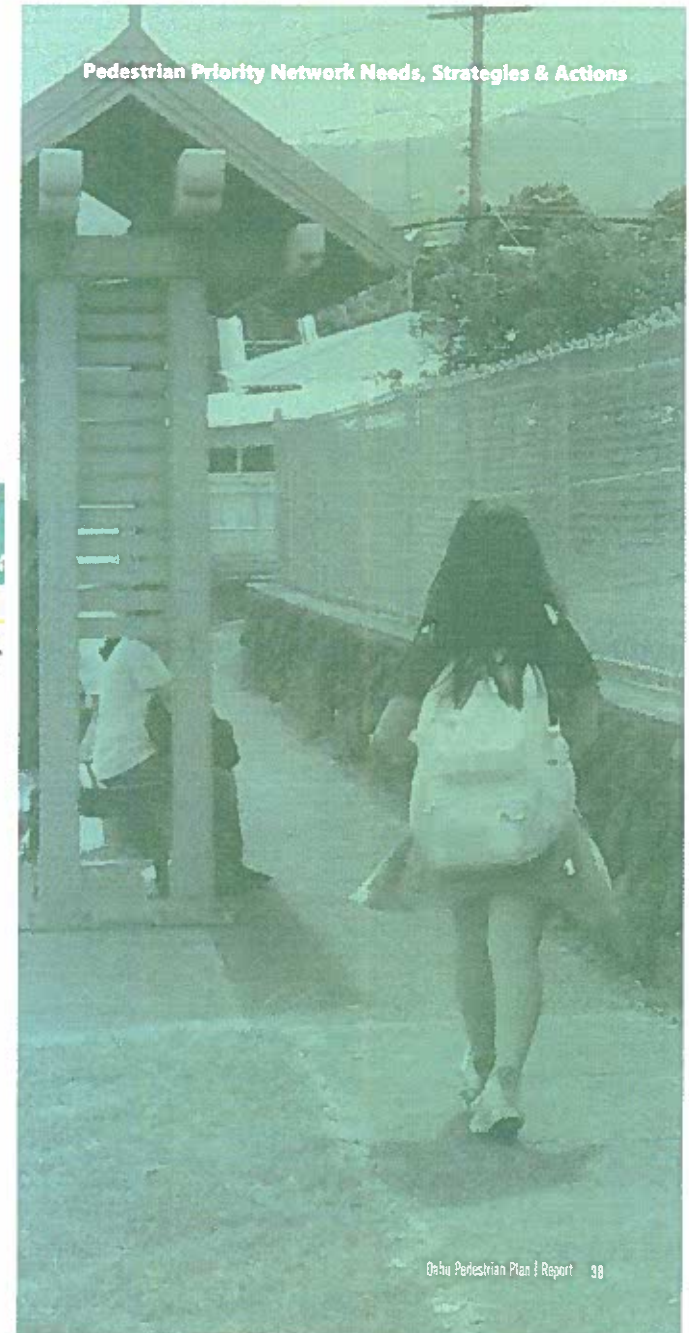
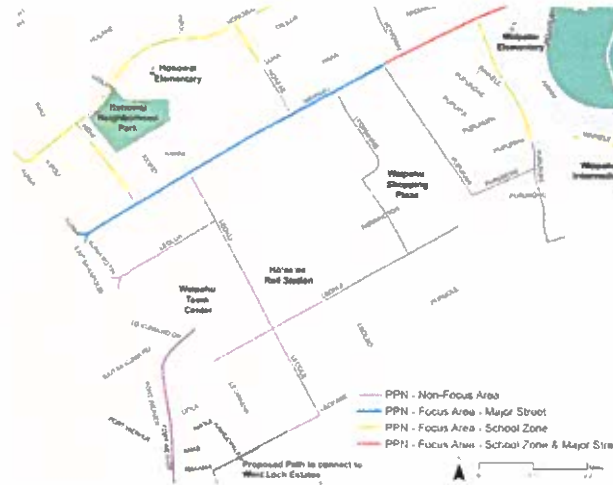
The School Zone Focus Area is 154 miles, of which 105 miles (68%) have improved walkways on both sides, 22 miles (15%) have an improved walkway on only one side, and 26 miles (17%) have no improved walkway.

### MAJOR STREETS

Major streets play a central role in the transportation network for pedestrians and all modes. Major streets connect to key destinations, serve transit, support high levels of motorized traffic, and are often unavoidable for many trips on foot.

The Major Street Focus Area is 175 miles, of which 128 miles (73%) have improved walkways on both sides, 26 miles (15%) have an improved walkway on only one side, and 20 miles (12%) have no improved walkway. Of the improved walkways, 26 miles are constructed of asphalt, measuring each side.

**FIGURE 6: SCHOOL ZONE AND MAJOR STREET FOCUS AREA  
EXAMPLE AREA  
(WAIPAHU-WEST LOCH)**



## WALKWAY PROJECTS

The walkway projects listed in **Tables 10-12** and on the following maps will fill the highest need sidewalk gaps on major streets and in school zones. The overall cost for these priority projects is estimated to be \$547 million – approximately \$540 million for new walkways and \$7 million for walkway upgrades – which is about 20% of the much larger \$2.6 billion estimated cost to complete all of the missing walkways on inventoried streets. These projects were further prioritized into three tiers to identify near, mid, and long term funding priorities. A score was assigned to each project based on several metrics. The sources, weighting factors, and metrics are included in **Appendix B** along with the results for the pedestrian demand index, which was considered as part of the overall prioritization score. The situation of each roadway within a Title VI/EJ area was also considered. The results of this analysis are included in **Appendix C**.

Shown in the table are each project's unique project ID, (which is also shown on the maps) the extents of the project, and the project's total score. As all recommended projects are walkways it is expected that the responsible agency for all projects will be the City and County of Honolulu Department of Transportation Services or the Department of Design and Construction and that the funding sources identified in **Table 14** under the sidewalk column would apply. The proposed walkways are for City and County of Honolulu streets and does not cover State, federal, or private streets.

## IMPROVEMENTS IN THE WORKS: MAKING PROGRESS

Walkway improvements were already under development or are being actively considered as part of planning projects at 50 of the proposed walkways. Many of these locations will receive improvements within the next five years. These locations are shown in bold in **Tables 12-14**.

PROJECT ID	STREET	EXTENTS	TOTAL SCORE	MAJOR STREET	SCHOOL ZONE
TIER 1					
1-1	Aiea Rd	Lanikai St-Kapihulu St	78.25	X	X
<b>1-2</b>	<b>California Ave</b>	<b>Ohai St-Kamehameha Hwy</b>	<b>85.5</b>	<b>X</b>	
<b>1-3</b>	<b>California Ave</b>	<b>Plum St-Uuku St</b>	<b>67.75</b>	<b>X</b>	<b>X</b>
1-4	Citizen St-Kalihi St	Waiuku St-Makiki St	81	X	X
1-5	Dole St	Lani St-Maunaloa Stream Bridge	91	X	X
1-6	Dole St	Panolo Stream Bridge-Lakehaha Ave & Ekolu Ave-Kamehameha Ave	77.5	X	X
1-7	Dole St	St. Louis Dr-Kamehameha St	81	X	
1-8	Dole St	Halehaha Way-Metcalfe St	77.5	X	X
1-9	E. Manoa Rd	Kalihi Rd-Oahu Ave	77.5	X	
1-10	Halehaha Dr	Kalihi Rd-Halehaha St	95.5	X	
1-11	Halehaha Ave	St. Louis Ave-2nd Ave	73	X	X
1-12	Halehaha St	Kalihi St-Maunaloa Rd	78.5	X	X
1-13	Halehaha Ave	Magellan Ave-Pele St & Miller St-Alaia St	81	X	X
<b>1-14</b>	<b>Kalihi Rd</b>	<b>Halehaha St-Waiuku Rd</b>	<b>73</b>	<b>X</b>	<b>X</b>
1-15	Kalihi Ave	Kalihi Rd-Kalihi Ave	78.5	X	X
1-16	Kalihi Ave	Kalihi Ave-6th Ave	95.5	X	X
1-17	Kalihi St	Palehua St-Palehua Dr	67.5		X
1-18	Kalihi Blvd	Dole St-Maunaloa Rd	102	X	X
<b>1-19</b>	<b>Kealahala Rd</b>	<b>Kalihi Hwy-Kamehameha Hwy</b>	<b>68.5</b>	<b>X</b>	<b>X</b>
1-20	Kalihi Ave	Alaia St-Kalihi St	76.5	X	X
1-21	Kalihi Ave	6th Ave-8th Ave	67.5	X	X
1-22	Kalihi Ave	Kalihi St-Kalihi Dr	82	X	
<b>1-23</b>	<b>Kalihi Rd</b>	<b>Malunui Ave-Kalihi Dr</b>	<b>86.5</b>	<b>X</b>	<b>X</b>
<b>1-24</b>	<b>Kalihi Rd</b>	<b>Kalihi Dr-Kalihi Ave</b>	<b>73</b>	<b>X</b>	<b>X</b>
1-25	Kalihi Ave	Kalihi St-Kalihi St	82	X	X
1-26	Kalihi Ave	A. H. H. St & 3rd St-4th St	81	X	X
<b>1-27</b>	<b>Kalihi St</b>	<b>Bates St-Ike St</b>	<b>120</b>	<b>X</b>	
1-28	Kalihi St-Halehaha Rd	Malunui St-Kalihi St	67.5	X	
1-29	Kalihi Valley Rd	Fairington Hwy-Kalihi St	86.5	X	
1-30	Kalihi Rd	E. Manoa Rd-Oahu Ave	98.5	X	
<b>1-31</b>	<b>Metcalfe St</b>	<b>Dole St-University Ave</b>	<b>73</b>	<b>X</b>	<b>X</b>
1-32	Kalihi St	Kalihi St-Makiki St & Alaia St-Panama St	86.5	X	X

Improvements in the Works are shown in bold



TABLE 10: PROJECT LIST - WALKWAYS (CONT.)

PROJECT ID	STREET	EXTENTS	TOTAL SCORE	MAJOR STREET	SCHOOL ZONE
1-33	Nehoa St	Leeward Dr-Mutt Smith Dr	81	X	X
1-34	Nehoa St	Prospect St-Pensacola St	85.5	X	X
<b>1-35</b>	<b>Nuuanu Ave</b>	<b>Craigside Pl-Robinson Ln</b>	<b>95.5</b>	<b>X</b>	
1-36	Oahu Ave	Elmwood Rd-Mahoa Rd	68.5	X	
1-37	Panua Ave	14th Ave-27th Ave	68.5	X	X
1-38	Panua St	Hilltop-Ramp-Lumiana St	67.5	X	
1-39	Piki Ave	Kalahoua Ave-Monserat Ave	86.5	X	X
1-40	Palania St	King St-Vineyard Blvd	96.08		X
<b>1-41</b>	<b>Pensacola St</b>	<b>Waimanu St-Kapiolani Blvd</b>	<b>95.5</b>	<b>X</b>	<b>X</b>
1-42	Pensacola St	Phoeb St-Nehoa St	81	X	X
1-43	Plantation Rd	Old Government Rd-Warrior Valley Rd	89.41	X	X
1-44	Prospect St	Ward Ave-Prospect Pl	67.5	X	X
1-45	Punaloua St	Philip St's King St	81	X	X
1-46	Puuhale Rd	Nimitz Hwy-Dillingham Blvd	76.66	X	X
1-47	Queen St	Ward Ave-Kamehameha St	82	X	X
1-48	Queen St	Cooke St-Ward Ave	82	X	
1-49	St. Louis Dr	Dale St-Wenceslao St	86.5	X	
1-50	University Ave	Kaala St-Maria Way	77	X	X
1-51	University Ave	E. Mahua Rd-Kaala St	82	X	X
1-52	Wahana Valley Rd	McArthur St-Plantation Rd	73.41	X	X
1-53	Waiwae St	Leeward St-Waiwae Rd	67.5	X	X
1-54	Waiwae St	Mokapu St-Pahoa St	86.5	X	
1-55	Waiwae St	Honolulu St-Waiwae St	81	X	X
1-56	Young St	McCully St-McCurry St	67.5	X	
<b>TIER 2</b>					
2-1	18th Ave	Herring Ave-Siliana Ave	40.33		X
2-2	Awa Heights Dr	Uluna St-Halo St	34.08		X
2-3	Awama St	Nanawale Ph-Awama Dr	41.08		X
2-4	Ale Nui Lagoon P	Lahaina Street	40.5		X
2-5	Awama Nui Lagoon St	Park Road-Peapack St	34.75		X
2-6	Awama Ave/18th Ave	Mahaloa Ave-12th Ave	58.5	X	
2-7	And Rd	Oralke Hwy-north end	34.33		X
2-8	Aukai St	Puuhale Rd-Mokapu St	57.5	X	

The project list on this Work is not shown in bold

TABLE 10: PROJECT LIST - WALKWAYS (CONT.)

PROJECT ID	STREET	EXTENTS	TOTAL SCORE	MAJOR STREET	SCHOOL ZONE
2-9	Awama St	Awama St-Waipio Point Access Rd	4.8		X
2-10	Beckley St	Gulick Ave-Kalia St	55		X
2-11	Booth Rd	Pahoa Rd-Huana St	53.08		X
2-12	Chalk Hill Ave	Uluwehi St-Lelehu Rd	33.58		X
2-13	California Ave	Lorenz Rd-Karlan Dr	33.58		X
<b>2-14</b>	<b>Diamond Head Rd</b>	<b>Makalei Pl-Kahala Ave</b>	<b>37</b>	<b>X</b>	
2-15	Fern St	Punaloua St-McCurry St	59.25		X
<b>2-16</b>	<b>Geiger Rd</b>	<b>Kamakana St-700 feet east of Kamakana St</b>	<b>55</b>	<b>X</b>	
<b>2-17</b>	<b>Goodale Ave</b>	<b>Farrington Hwy-Nalei Pl &amp; Kealohanui St-Waiulua Beach Rd</b>	<b>47.91</b>	<b>X</b>	<b>X</b>
2-18	Gulick Ave	N King St-Beckley St	55		X
2-19	Gulick Ave	Pahoa St-Luhia St	55		X
2-20	Hakuna Rd	Farrington Hwy-Waiulua St	63	X	X
<b>2-21</b>	<b>Haleiwa Rd</b>	<b>Waiulua Beach Rd-Paalaa Rd</b>	<b>49</b>	<b>X</b>	<b>X</b>
<b>2-22</b>	<b>Haleiwa Rd</b>	<b>Paalaa Rd-Kamehameha Hwy</b>	<b>54</b>	<b>X</b>	<b>X</b>
2-23	Hanalei St	Kapiolani Blvd-Panua St & Mulua St S King St	59.25		X
2-24	Hawai Kai Dr	Mokuna St-Kalahoua St	49.5	X	
2-25	Hikana St	Kamehameha Hwy-Moanala Rd	58.58		X
2-26	Hikona Pl	Moanala Rd-Hi Pedestrian Bridge	47.5		X
2-27	Hikoo St	Niuli St-Mahoe St	41.5		X
2-28	Himani St/Peapack St	Luhia St-Ahiki St	43.75		X
2-29	Honolulu St	Honolulu St-Waiwae St	44.5		X
<b>2-30</b>	<b>Hoolalea St</b>	<b>Waimano Home Rd-Noelani St</b>	<b>53.83</b>		<b>X</b>
2-31	Hoolalea St	Noelani St-200 feet north of Hoolalea St	34.08		X
2-32	Houahouling Rd	N School St-Alala St	42.08		X
2-33	Irma Ave	Whitmore Ave-Whitmore Ave	40.5		X
2-34	Judd St	Luhia St-Huana Ave	45.23		X
<b>2-35</b>	<b>Kahauiki St</b>	<b>Kamehameha IV Rd-Middle St</b>	<b>62.25</b>		<b>X</b>
2-36	Kahaka St	S King St-Young St	60		X
2-37	Kamoauna Ln	Kula St King St	60.75		X
2-38	Kapiolani St	Oreana St-Muhammad Pl	43.25		X
<b>2-39</b>	<b>Kailua Rd</b>	<b>Kalaheo Ave-Wanaao Rd</b>	<b>64</b>	<b>X</b>	<b>X</b>



## Pedestrian Priority Network Needs, Strategies & Actions

TABLE 10: PROJECT LIST - WALKWAYS (CONT.)

PROJECT ID	STREET	EXTENTS	TOTAL SCORE	MAJOR STREET	SCHOOL ZONE
<b>2-40</b>	<b>Kaimalu Dr</b>	<b>Ohana St-Kailua Rd</b>	<b>53.83</b>		<b>X</b>
2-41	Kaimalu Dr	Onéawa St-Kalaheo Ave	46	X	X
2-42	Kailua St	Lehua St-Nalameha St	63	X	Y
<b>2-43</b>	<b>Kamehameha Hwy</b>	<b>Weed Circle-Haleiwa Rd</b>	<b>40.5</b>	<b>X</b>	
2-44	Kamehameha Hwy	Haleiwa Rd-Kamehameha Pl	36	X	
<b>2-45</b>	<b>Kamehameha Hwy</b>	<b>Imiloa St-Halaaluni St</b>	<b>45.66</b>	<b>X</b>	<b>X</b>
<b>2-46</b>	<b>Kamehameha IV Rd</b>	<b>Kahauiki St-N School St</b>	<b>64.75</b>		<b>X</b>
<b>2-47</b>	<b>Kaneohe Bay Dr</b>	<b>Molo St-Halia St</b>	<b>50.5</b>	<b>X</b>	
<b>2-48</b>	<b>Kaneohe Bay Dr</b>	<b>Ilihu St-Mokapu Blvd</b>	<b>59.5</b>	<b>X</b>	<b>X</b>
2-49	Kailua St	Kamehameha Hwy-Haleiwa St	58.58		X
2-50	Kailua Rd	Papaia Pl-Aiea Rd	55	X	X
2-51	Kalaheo Ave	Kalaheo Ave-Haleiwa Ave	49.5	X	
2-52	Kamehameha St	Hewa St-Kailua St	50.58		X
2-53	Kailua Ave	18th Ave-17th Ave & 18th Ave-22nd Ave	58.5	X	X
2-54	Konoa Mall Dr	Lanihewa Pl-Romaniua St	45	X	X
2-55	Kualakoum St	St Johns Rd-Kauaiaanna St-Halemanuhia Pl	43.75		X
2-56	Kulohi St-Waiakapua Pl	University Ave-Waiakapua Pl	60.75		X
2-57	Kulohi St	Puuhala St-Puuhala Elementary School	40.5		X
2-58	Lanania St	Water St-Jude St	40		X
2-59	Lopahi St-Makani St	Lopahi St-Hawaii St	58.25		X
2-60	Loburns-Homer Stearns Rd	Hokuakali St-Haleiwa St	55.91	X	X
2-61	Magellan Ave	Iolani Ave-Aiea St	59.5		X
2-62	Makani St	California Ave-Kilani Ave	58.75		X
<b>2-63</b>	<b>Mahoe St</b>	<b>Huakai St-Hiapo St</b>	<b>41.5</b>		<b>X</b>
2-64	Makani Ave	Aiea Ave-Diamond Head Rd	66.5	X	
2-65	Makani St	Farrington Hwy-Kauaiaanna Rd	48.75		X
2-66	Makani Ave	Kailua St-Haleiwa St	45.75		X
2-67	Makani St	Lanihewa St-Water St	46.5		X
2-68	McArthur St	Mt St-Waiakapua Valley Rd	63.75		X
2-69	Mt St	Waiakapua Valley Rd-Plantation Rd	63.75		X
2-70	Mokapu Rd	Nani St-Kaneohe Bay Dr	46	X	
<b>2-70</b>	<b>Mokaua St</b>	<b>Kaumualihi St-Ahuula St</b>	<b>50.33</b>		<b>X</b>
2-71	Mokapu Dr	Kaneohe Bay Dr-Namaka St	40.5	X	X

TABLE 10: PROJECT LIST - WALKWAYS (CONT.)

PROJECT ID	STREET	EXTENTS	TOTAL SCORE	MAJOR STREET	SCHOOL ZONE
<b>2-72</b>	<b>N Kalaheo Ave</b>	<b>Mokapu Blvd-Kainui Dr</b>	<b>46</b>	<b>X</b>	
<b>2-73</b>	<b>N Kalaheo Ave</b>	<b>Kainui Dr-Omao St</b>	<b>41.5</b>	<b>X</b>	<b>X</b>
<b>2-74</b>	<b>N Kalaheo Ave</b>	<b>Omao St-Kuulei Rd</b>	<b>50.5</b>	<b>X</b>	<b>X</b>
2-75	N Kualei St	Hala Dr-Lanania Ave	39.75		X
2-76	Naminihi St/Kamehameha St/Hauna St	Papaia Rd-Booth Rd	37.25		X
2-77	North Rd	Kulana Pl-Kailua St	63	X	X
2-78	Oahu Ave	Male Way-University Ave	36.25		X
2-79	Olopana St/Wilua St	Ht Pedestrian Bridge/Ulupe St	48.75		X
2-80	Omao St/Kamehameha IV Rd	Homer St-Kailua St	39.75		X
<b>2-81</b>	<b>Oneawa St</b>	<b>Kainui Dr-Kawainui St</b>	<b>64</b>	<b>X</b>	<b>X</b>
2-82	Papaia Rd	Haleiwa Rd-Kamehameha Hwy	46		X
2-83	Papaia St	Waiakapua St-Farrington Hwy	65	X	
2-84	Papaia Ave	Waiakapua Ave-Papaia Ave	54	X	X
2-85	Papaia Rd	Papaia Pl-Kailua Pl	44.75		X
2-86	Papaia Ave/Kamehameha Rd/Wai Nani Way/Papaia Way	Kailua Ave-Ahualei Way	50.75		X
2-87	Papaia Rd	Kailua Pl-Fort Weavers Rd	34.83		X
2-88	Papaia Rd	Lanihewa St-Namukahele St	50.58		X
2-89	Papaia St	Papaia St-Lanihewa Dr	50.58		X
2-90	Prospect St	Makani St-Papaia St	41		X
2-91	Puuhala St	Kamehameha Hwy-Lanihewa	52.41	X	X
2-92	Puuhala St	Kailua Pl-Farm St & Dole St-King St	59.25		X
2-93	Sensory Rd	Philippine Sea Kailua Plwy	36	X	
<b>2-94</b>	<b>S Kalaheo Ave</b>	<b>Kuulei Rd-Kailua Rd</b>	<b>59.5</b>	<b>X</b>	<b>X</b>
<b>2-95</b>	<b>Salt Lake Blvd</b>	<b>Maluna St-Ala Liliko St</b>	<b>59.75</b>	<b>X</b>	<b>X</b>
2-96	Waiala Beach Rd	Goodale Ave-Weed Circle	57.91	X	X
2-97	Waikoua Rd	Kamehameha Hwy-Lanihewa	51	X	X
2-98	Waikoua Rd	Farrington Hwy-Hula St	58.75		X
2-99	Waipaho Home Rd	Kono Mall Dr-Pearl City High School	42.41	X	X
2-100	Waipaho Depot Rd	Farrington Hwy-River Harbor Historic Trail	58.75		X
2-101	Waipaho St	Waikoua Rd-Waipaho Depot Rd	54	X	X
<b>2-102</b>	<b>Waipio Point Access Rd</b>	<b>Poailani Cir-Farrington Hwy</b>	<b>51</b>		<b>X</b>

\*Improvements in the Works are shown in light



## OFF-STREET PATHS

The proposed Off-Street Paths were carried forward from the Oahu Bike Plan. The projects are not further prioritized into tiers.

TABLE 10: PROJECT LIST - WALKWAYS (CONT.)

PROJECT ID	STREET	EXTENTS	TOTAL SCORE	MAJOR STREET	SCHOOL ZONE
1-101	William Henry Rd	Kamohenuke Hwy-Waikele Rd	52		X
<b>TIER 3</b>					
3-1	71st Ave	Lualaba St-Harding Hwy	29.58		X
3-2	22nd Ave	Kiwaeva Ave-Diamond Head Rd	26.25		X
3-3	8th Ave	Kilauea Ave-Moanaloa Ave	30.75		X
3-4	Ala Aloha St	Washington Hwy-end	26.25		X
3-5	Aunani St	Kumia Mai Dr-Ahioomoe St	10.5		X
3-6	Kulua Rd	Kaehaanuole Hwy-Lunalui St	18.83		X
<b>3-7</b>	<b>Farrington Hwy</b>	<b>Kapolei Golf Course Rd-Kualakai Pkwy</b>	<b>28</b>	<b>X</b>	
<b>3-8</b>	<b>Farrington Hwy</b>	<b>Kualakai Pkwy-Old Fort Weaver Rd</b>	<b>23.5</b>	<b>X</b>	
3-9	Honouliuli St	Waimanalo Home Rd-Hoaloa St	25.75		X
3-10	Hana St/Akahi Ln	Kahehau Bay Dr-Mokapu Rd	18		X
3-11	Kala Way	Oahu Ave-University Ave	29		X
3-12	Kaha St	Oheka St-Kanaka Dr	18.75		X
3-13	Kahala St	Kahala Dr-Kahala Ave	16.25		X
3-14	Kahala Dr	Kahala Dr-Kahala St	27		X
3-15	Keneke St	Kapuhaha Rd-Kapi Rd	23.5		X
<b>3-16</b>	<b>Kaneohe Bay Dr</b>	<b>Malae Pl-Kuono Pl</b>	<b>23.5</b>	<b>X</b>	
3-17	Koko Head Ave	Waihee Ave-Arima St	20.75		X
3-18	Kukui St	Kahala Hwy-Keneke St	22.75		X
3-19	Lualaba St	Kilauea St-Waimanalo Home Rd	28.25		X
3-20	Liliha St	Waike St-Kapi St	22		X
3-21	Maunawili Rd	Aiea Rd-Maunawili Ln	18.83		X
<b>3-22</b>	<b>Mokulua Dr</b>	<b>Kaneapu Pl-Alaapapa Dr</b>	<b>16</b>		<b>X</b>
3-23	Mokulua St	Waimanalo Home Rd-Hoaloa St	28.25		X
3-24	Palaia St	Aniwaia St-Makani Dr	33.08		X
3-25	Poni-Moai Rd	Pala Ave-La Peeta Ln	22.25		X
3-26	Puna Rd	Pala Hwy-Pala St	25.5		X
3-27	Puuhala St	Puuhala St-Kaneohe Bay Dr	28.5		X
3-28	Quana St	Liguanu Dr-Kaehaanuole Hwy	30.58		X
3-29	Ulupui St/Ulupui St	Ulupui St-Kaehaanuole Hwy	28.83		X
3-30	Waikele Valley Rd	Waikele Elementary-Kaehaanuole Hwy	27.25		X
3-31	Waikele Valley Rd	Crowder Ln-Goodale Ave	32.91	X	X
3-32	Waikele Valley Rd	Plantation Rd-Paia Pl	18	X	

TABLE 11: PROJECT LIST - OFF-STREET PATHS

PROJECT ID	NAME	EXTENTS
O-1	Ala Moana Beach Park Path (Extension)	Connect existing mauka and makai bike paths, extend path to Kowale Basin
<b>O-2</b>	<b>Ala Wai Canal Pedestrian/Bike Bridge</b>	<b>University Avenue to Kalaimoku Street</b>
<b>O-3</b>	<b>Ala Wai Promenade (Kalakaua Crossing)</b>	<b>Ala Moana Boulevard to Date Street</b>
O-4	Central Oahu Regional Park Path	Kahehameha Highway to Paia Street
O-5	Crestview Park Connector	Connect existing path through park
<b>O-6</b>	<b>Kaaahi St Path</b>	<b>Proposed bike network for Iwilei TOD redevelopment</b>
O-7**	Kaimuki High School Bike Path	Kapiolani Boulevard to Crown Park (Olokele Avenue)
O-8	Kalahe Street Pedestrian/Bike Bridge	Blue/Ped Bridge over Kapaemahu Canal at Kalahe Street
O-9	Kapalama Canal Path (Kahala Street Side Section)	Nimitz Highway to Kapaemahu Street
O-10	Kapalama Canal Path (Koea Street Side)	Nimitz Highway to Queen's Street
O-11**	Kaunalihi Street Pedestrian/Bike Bridge	HOD proposed shared use path on HCC campus
O-12	Ke Ala Puhoua Bike Path (Extension)	Shoreline to Three Lakes
O-13	Leokane Street Connector	Kuhapapa Street to Leokane Street
O-14**	Palala Mall	Kamuela Boulevard to Leokane Bike Path
O-15	Pouani Street Pedestrian/Bike Bridge	over Nakala Stream
<b>O-16**</b>	<b>Pearl Harbor Path-Arizona Memorial Path</b>	<b>Pearl Harbor Path to Arizona Memorial</b>
<b>O-17</b>	<b>Pearl Harbor Path-LCC Connector</b>	<b>Pearl Harbor Bike Path to Waiawa Road</b>
<b>O-18</b>	<b>PHBP Harbor Path- Pearl Ridge Transit Station Connector</b>	<b>Kahehameha Highway to Pearl Harbor Bike Path</b>
<b>O-19**</b>	<b>Wahiawa-Whitmore Village Pedestrian/Bike Connection</b>	<b>Path and pedestrian/bicycle bridge connecting Wahiawa and Whitmore Village</b>
O-20	Wahiawa Road Path	Wahiawa Canal Road to Wahiawa Stream
<b>O-21</b>	<b>Kualakai Parkway Path</b>	<b>H-1 Freeway to Kapolei Parkway</b>

\*Improvements in the Works are shown in bold

\*\*Local/Neighborhood Projects/Non-City Implementation

## Pedestrian Priority Network Needs, Strategies & Actions

### WALKWAY UPGRADES

Walkway Upgrades are existing asphalt walkways that are candidates for upgrading to concrete walkways. They are not further prioritized into tiers.

TABLE 12: PROJECT LIST - WALKWAY UPGRADES

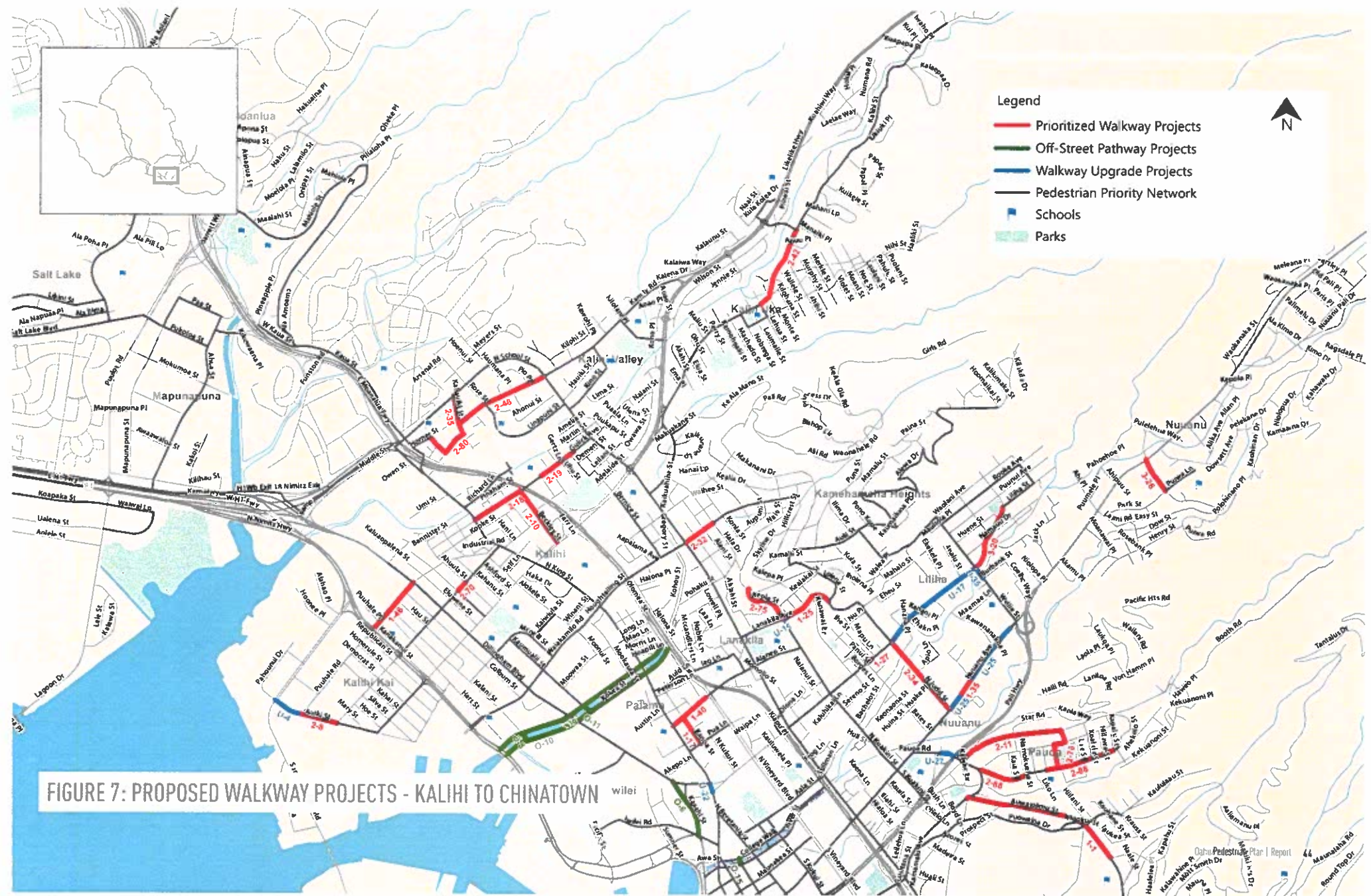
PROJECT ID	STREET	EXTENTS	TOTAL SCORE
U-1	Area Heights Dr	Olopana St-Utine St	85.5
U-2	Area Heights Dr	Hakina St-Halewilo St	85.5
U-3	Alala Rd	Kawaloa Rd-Mokulua Dr	63
U-4	Auliki St	Sand Island Access Rd-Puuha'e Rd	72
U-5	California Ave	Kaalaio Pl-Ona St	77.91
<b>U-6</b>	<b>California Ave</b>	<b>N Cane St-Ihoiho St</b>	<b>70.25</b>
U-7	Honomanu St	Kamehameha Hwy-Kaamilo St	85.5
U-8	Iolani Ave	Pele St-Miller St	90
<b>U-9</b>	<b>Kailua Rd</b>	<b>Kailua Rd-S Kalaheo Ave</b>	<b>91</b>
<b>U-10</b>	<b>Kamehameha Hwy</b>	<b>Haiku Rd-Halaulani St</b>	<b>53.16</b>
<b>U-11</b>	<b>Kamehameha Hwy</b>	<b>Kaneohe Bay Dr-Waikalua Rd</b>	<b>85.5</b>
U-12	Kilani Ave	Kaiponi St-Kukui St	90
U-13	Kilauea Ave	17th Ave-18th Ave	81
<b>U-14</b>	<b>Kuulei Rd</b>	<b>Aulike St-Malunui Ave</b>	<b>90</b>
U-15	Lanakila Ave	N Kuakini St-Keolu St	90
U-16	Lenua Ave	2nd St-3rd St	85.5
<b>U-17</b>	<b>Liliha St</b>	<b>Judd St-Wyllie St</b>	<b>55</b>
U-18	Lualualei Homestead Rd	Farrington Hwy-Midway St, Ihuku St-Hokuikai St, Hale Elua St-Leihoku St	85.5
U-19	Lusitana St	Alapai St-Kalihi St	90
<b>U-20</b>	<b>McCully St</b>	<b>Lime St-Fern St &amp; Date St-Waiola St</b>	<b>110</b>
U-21	Monserrat Ave	Paki Ave-Leahi Ave	85.5
<b>U-22</b>	<b>N King St</b>	<b>Liliha St-Dillingham Blvd</b>	<b>130</b>
U-23	Nehoa St	Prospect St-Lewaan Dr	85.5
U-24	North Rd	Fort Weaver Rd-Kulana Pl & Kulana St-Kehue St	81
<b>U-25</b>	<b>Nuuanu Ave</b>	<b>Judd St-Craigside Pl &amp; Robinson Ln-Wyllie St</b>	<b>95.5</b>
U-26	Pahoa Ave	Koso Head Ave-Ocean View Dr	85.5
U-27	Pauoa Rd	Finchall St-Pali Hwy Underpass	85.5

TABLE 12: PROJECT LIST - WALKWAY UPGRADES (CONT.)

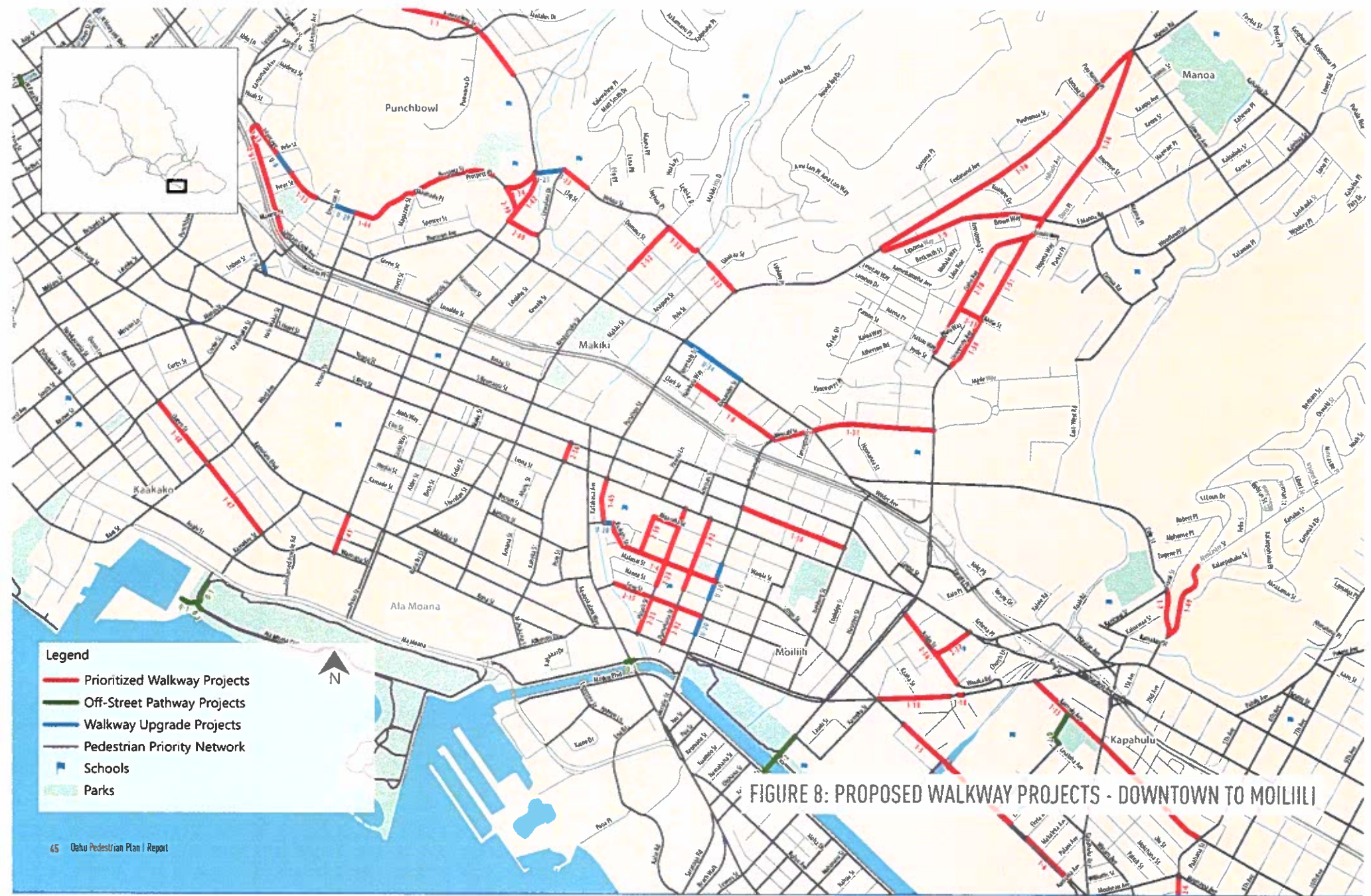
PROJECT ID	TO	FROM	TOTAL SCORE
U-28	Philip St	Punahou St-Waiolu St	90
U-29	Prospect St	Emerson St-Ward Ave	90
U-30	Utine St	Area Heights Dr-Halewilo St	85.5
U-31	Waiatae Ave	16th Ave-17th Ave	85.5
U-32	Waiatae Valley Rd	Pali Pl-Kaneaki St	54
U-33	Waipahu St	Waioahu Depot Rd-Puamano Pl & Pali Pl-Hianakui St	99.25
U-34	Wilder Ave	Punahou St-Alexander St	90
U-35	Wyllie St	Liliha St-Burbank St	82

On-provisionality at the Works are shown in bold.

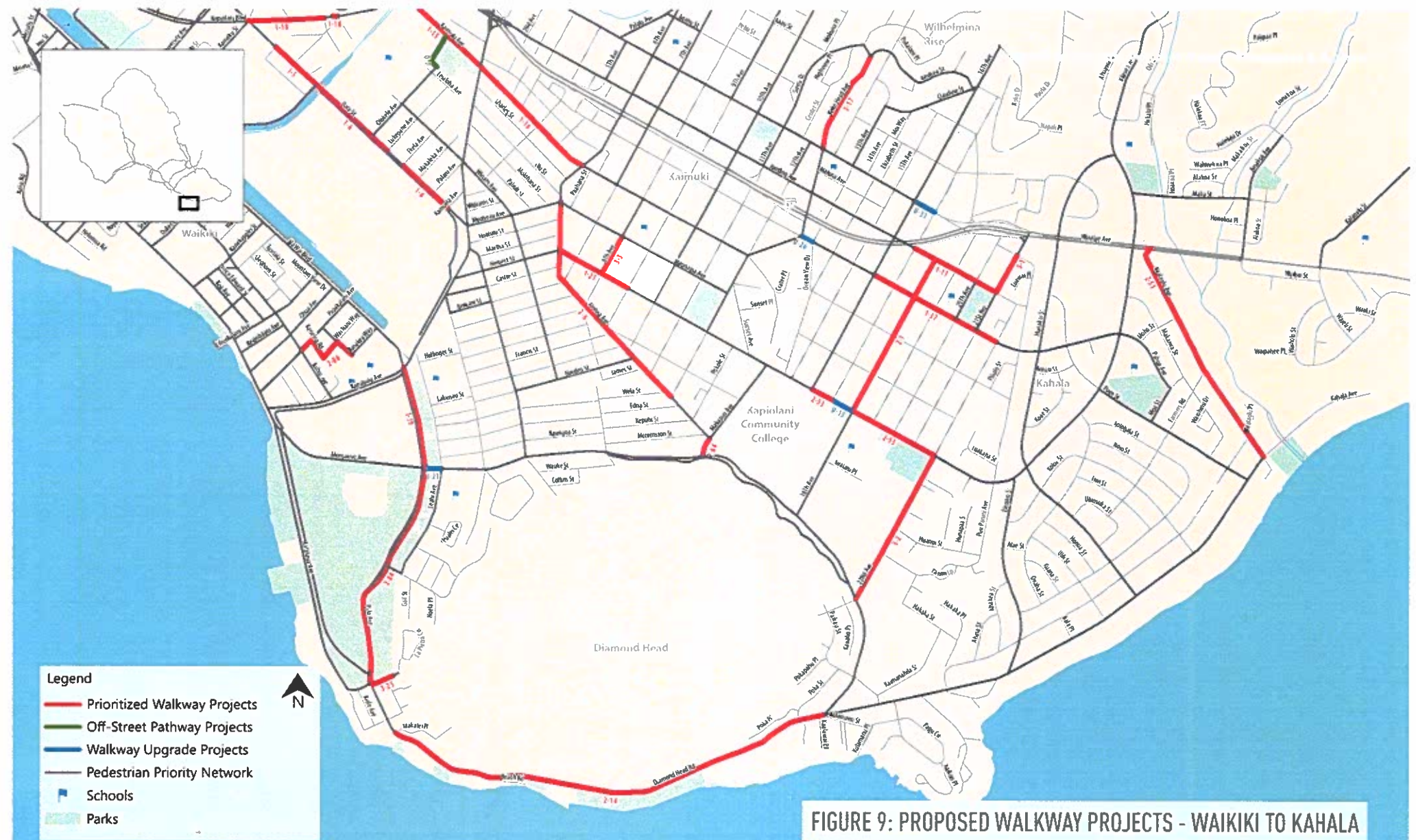




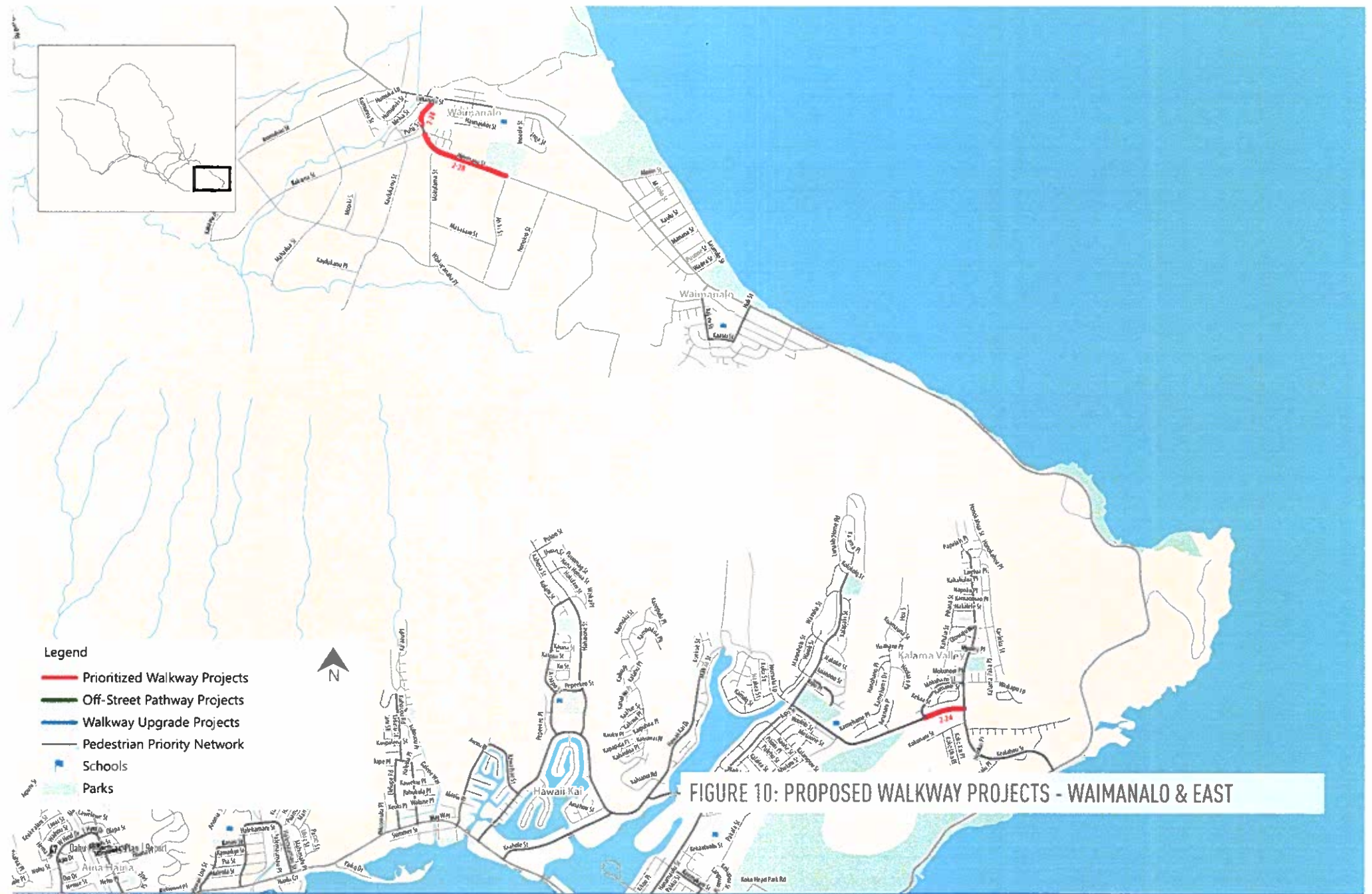














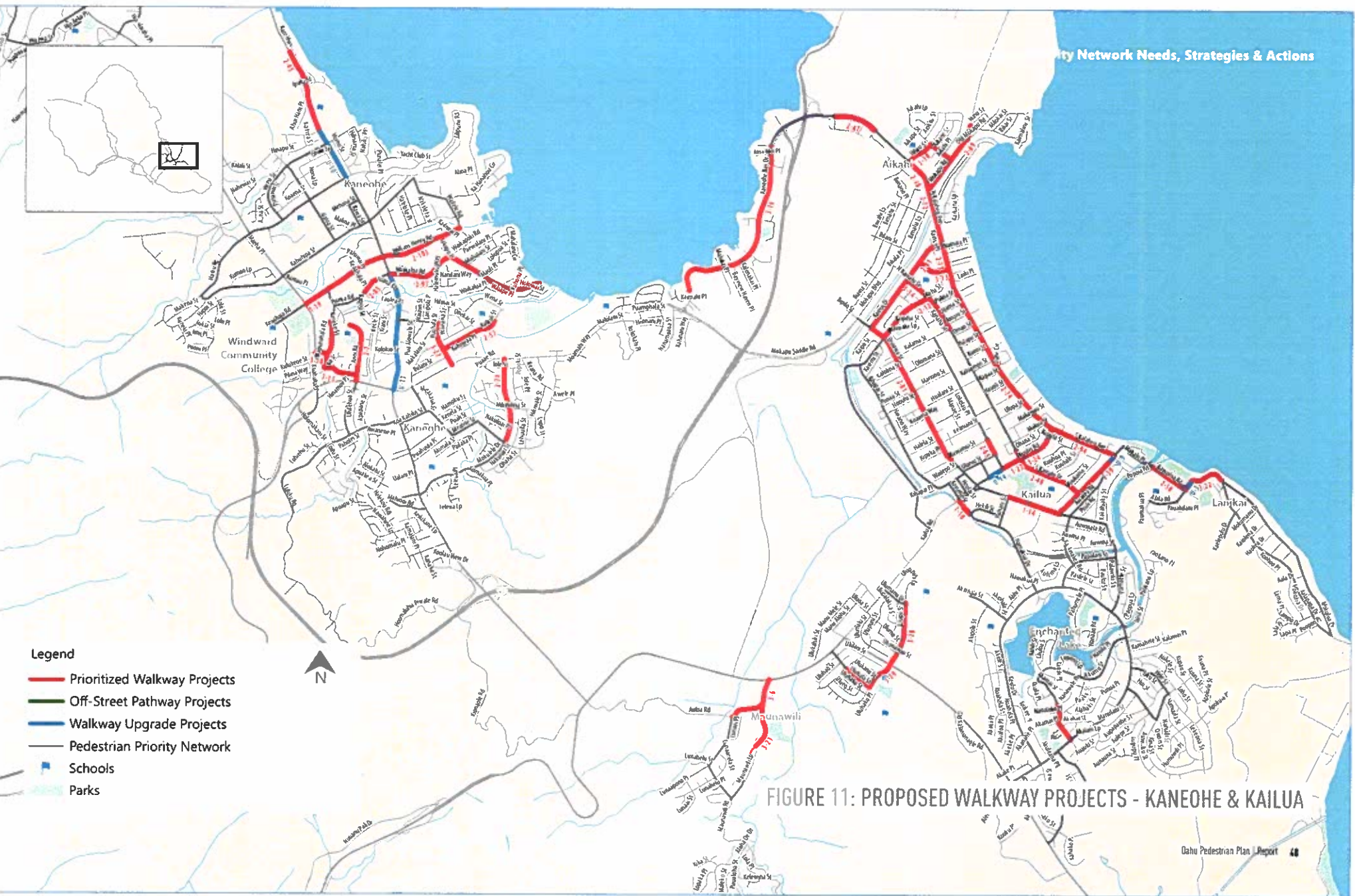
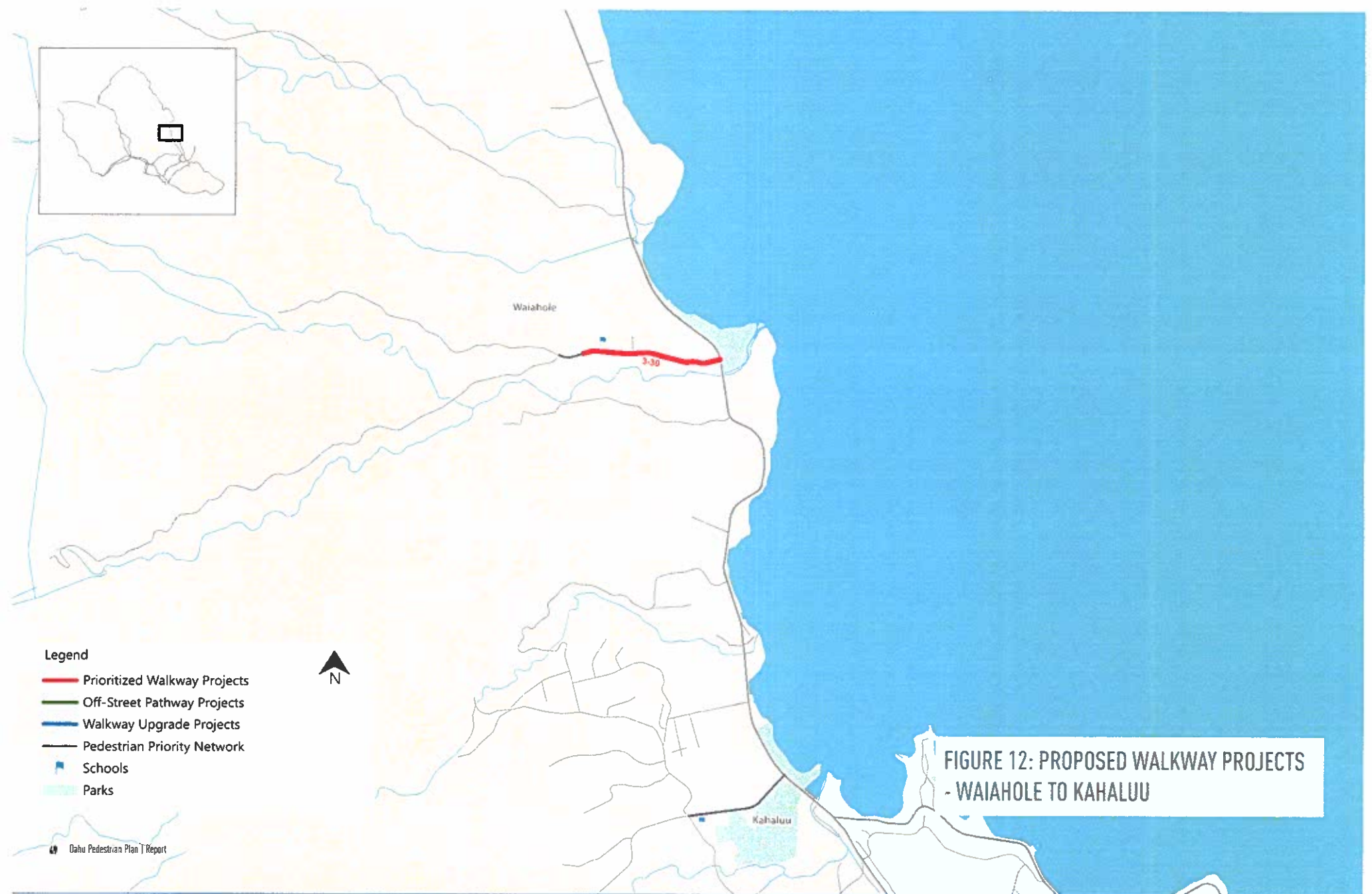
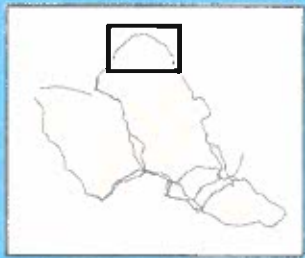


FIGURE 11: PROPOSED WALKWAY PROJECTS - KANEOHE & KAILUA



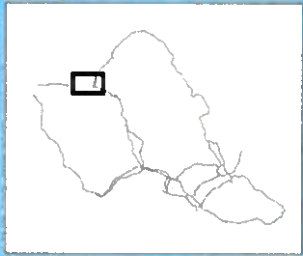




- Legend**
- Prioritized Walkway Projects
  - Off-Street Pathway Projects
  - Walkway Upgrade Projects
  - Pedestrian Priority Network
  - Schools
  - Parks



FIGURE 13: PROPOSED WALKWAY PROJECTS - PUPUKEA TO HAUULA



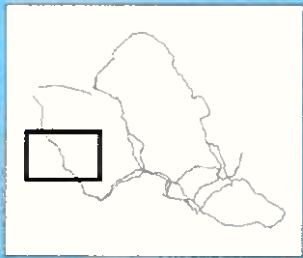
#### Legend

- Prioritized Walkway Projects
- Off-Street Pathway Projects
- Walkway Upgrade Projects
- Pedestrian Priority Network
- Schools
- Parks



FIGURE 14: PROPOSED WALKWAY PROJECTS - WAIALUA & HALEIWA

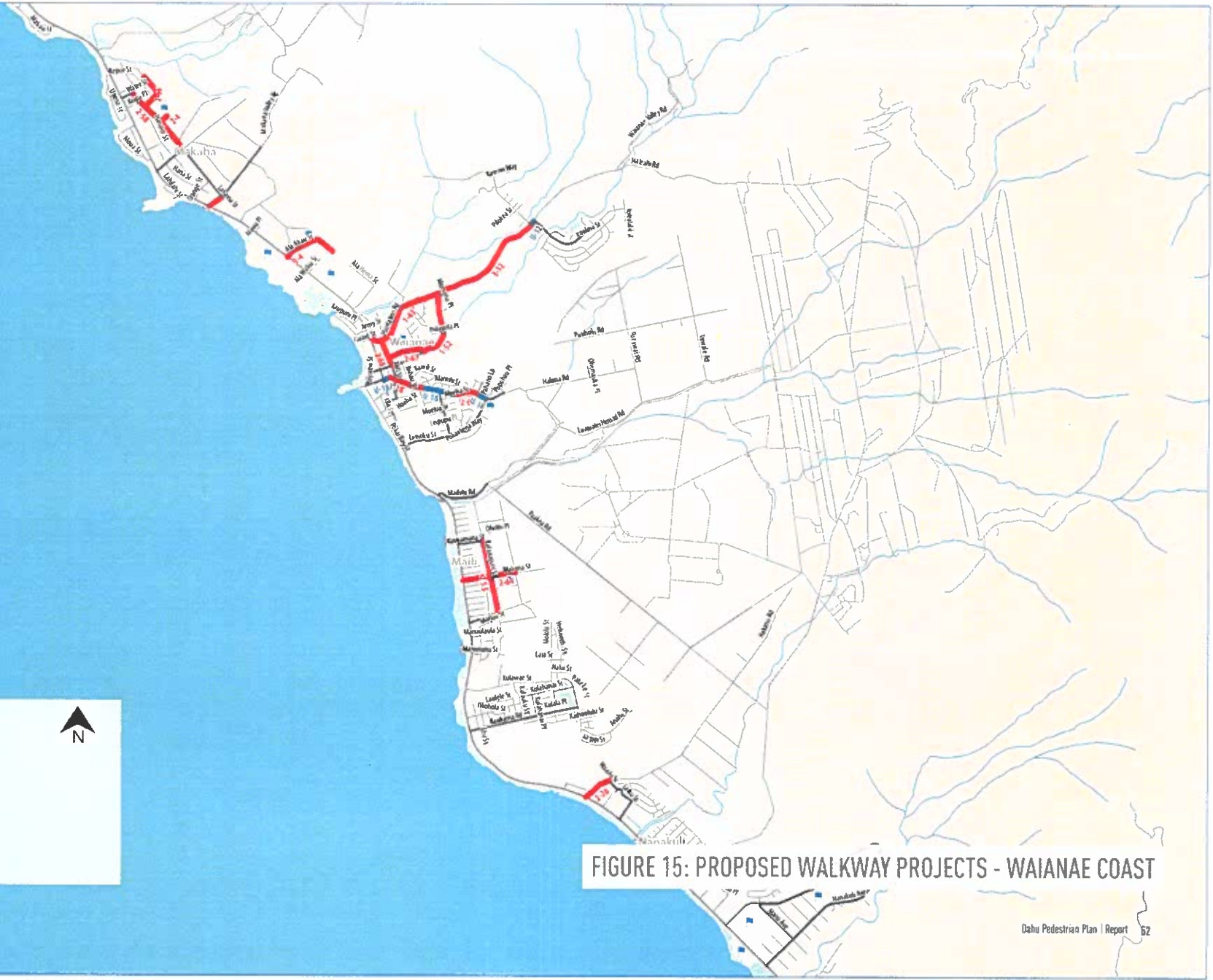




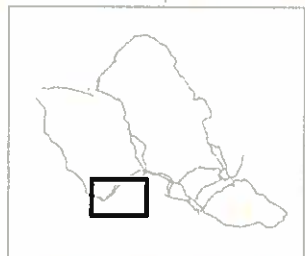
**Legend**

- Prioritized Walkway Projects
- Off-Street Pathway Projects
- Walkway Upgrade Projects
- Pedestrian Priority Network
- Schools
- Parks

N

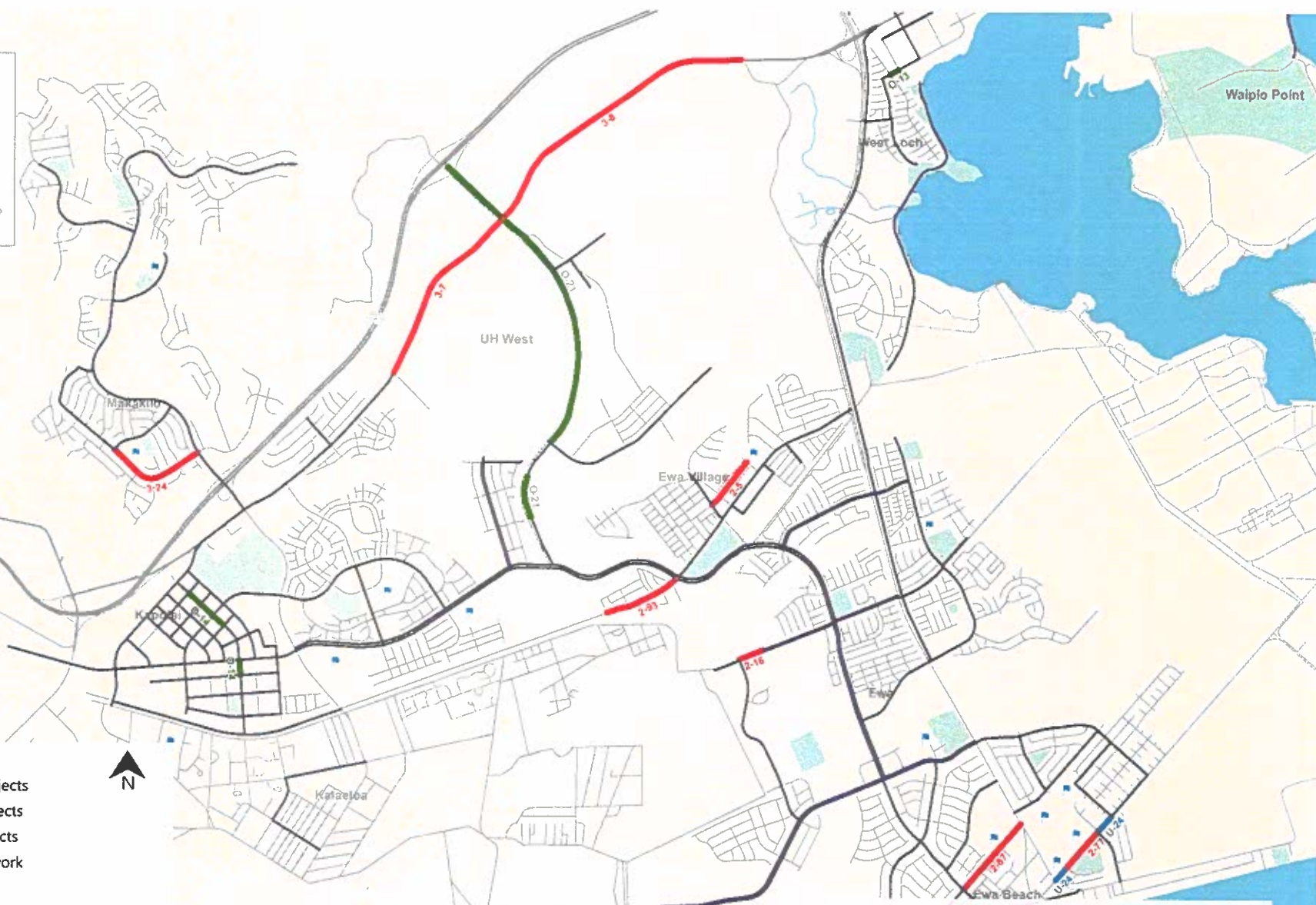


**FIGURE 15: PROPOSED WALKWAY PROJECTS - WAIANAE COAST**



**Legend**

- Prioritized Walkway Projects
- Off-Street Pathway Projects
- Walkway Upgrade Projects
- Pedestrian Priority Network
- Schools
- Parks



**FIGURE 16: PROPOSED WALKWAY PROJECTS - EWA**





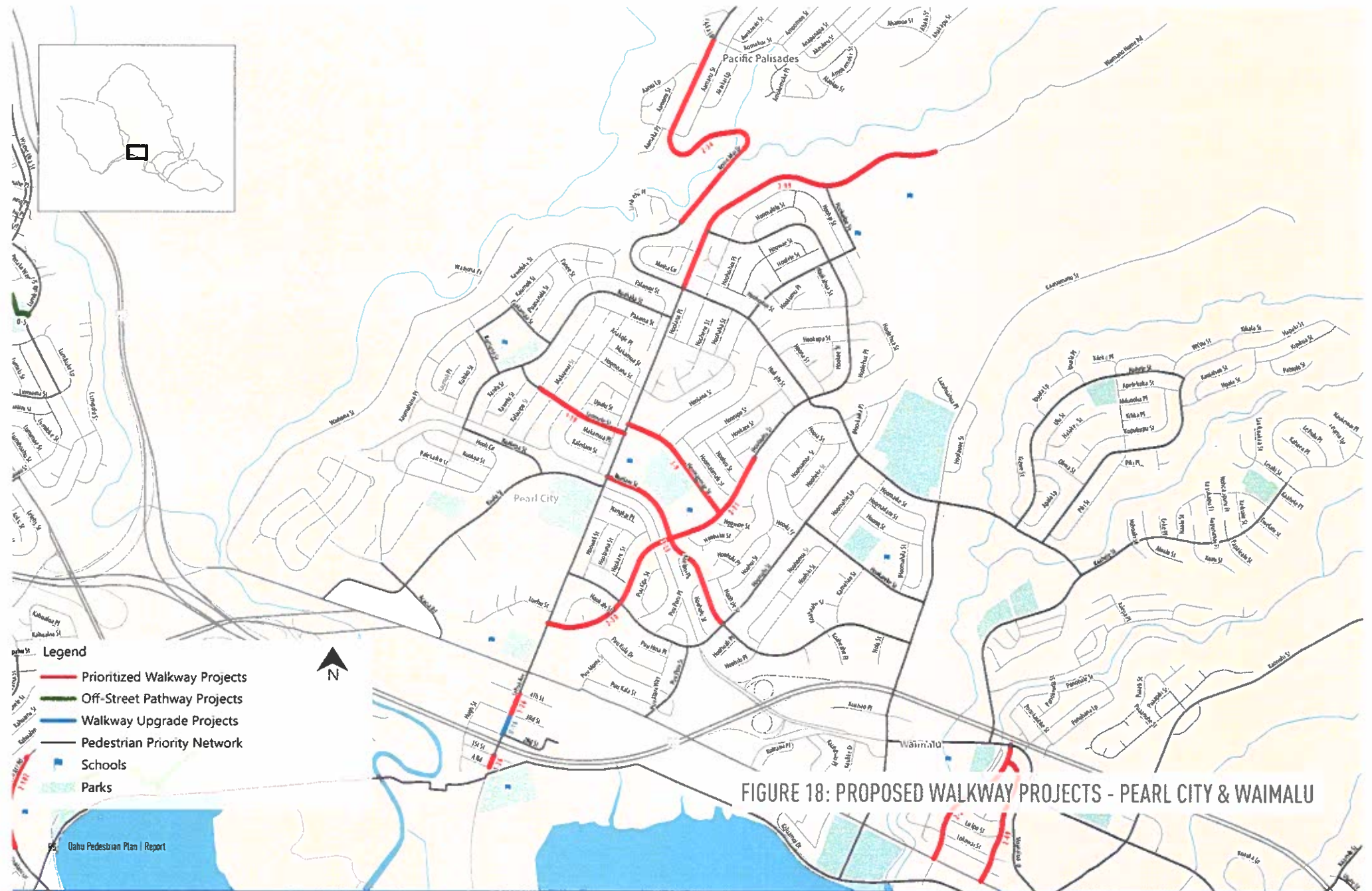
# Legend

- Prioritized Walkway Projects
- Off-Street Pathway Projects
- Walkway Upgrade Projects
- Pedestrian Priority Network
- Schools
- Parks

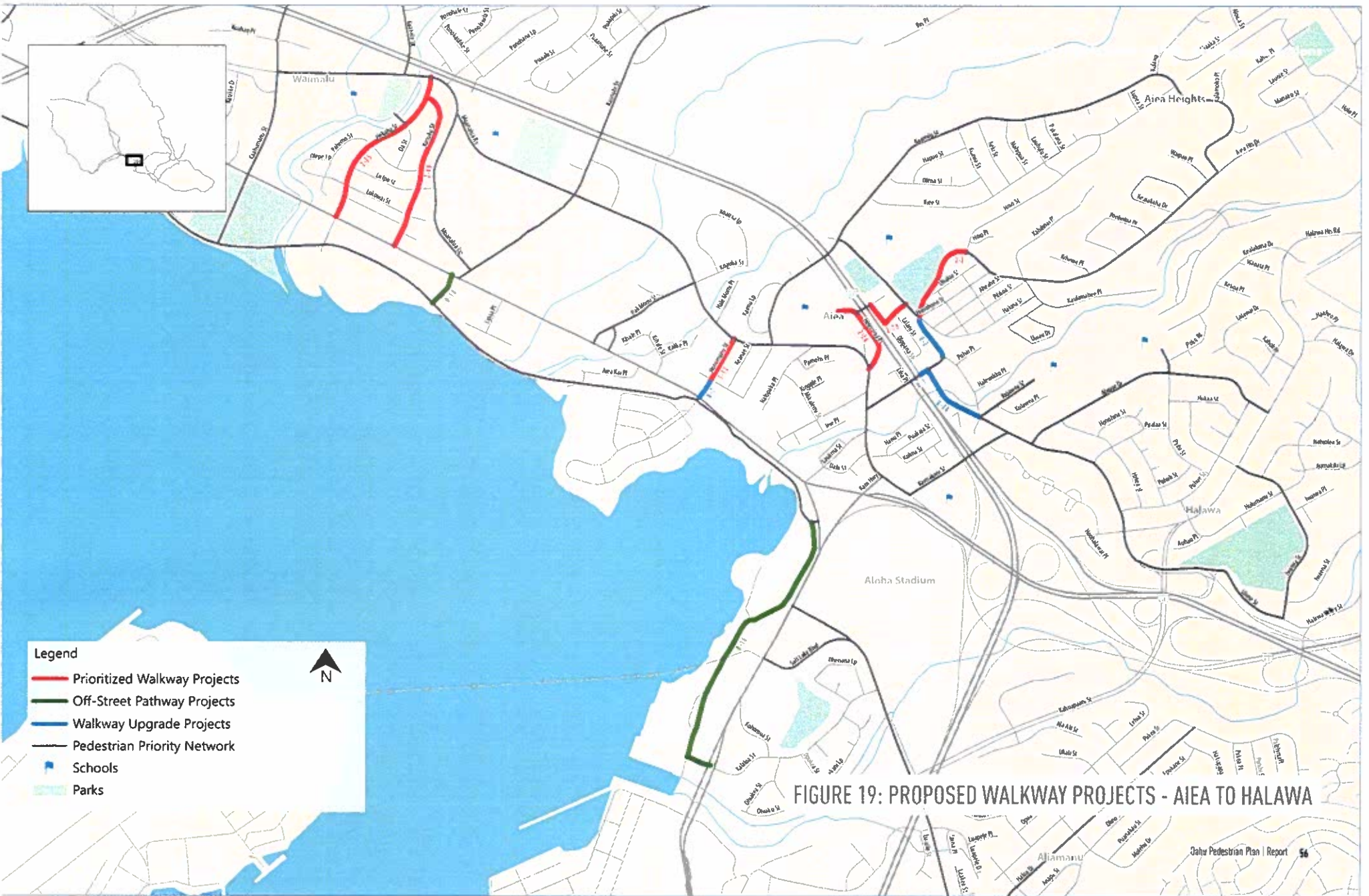


FIGURE 17: PROPOSED WALKWAY PROJECTS - WAIPAHU TO WAIPIO













- Legend**
- Prioritized Walkway Projects
  - Off-Street Pathway Projects
  - Walkway Upgrade Projects
  - Pedestrian Priority Network
  - Schools
  - Parks

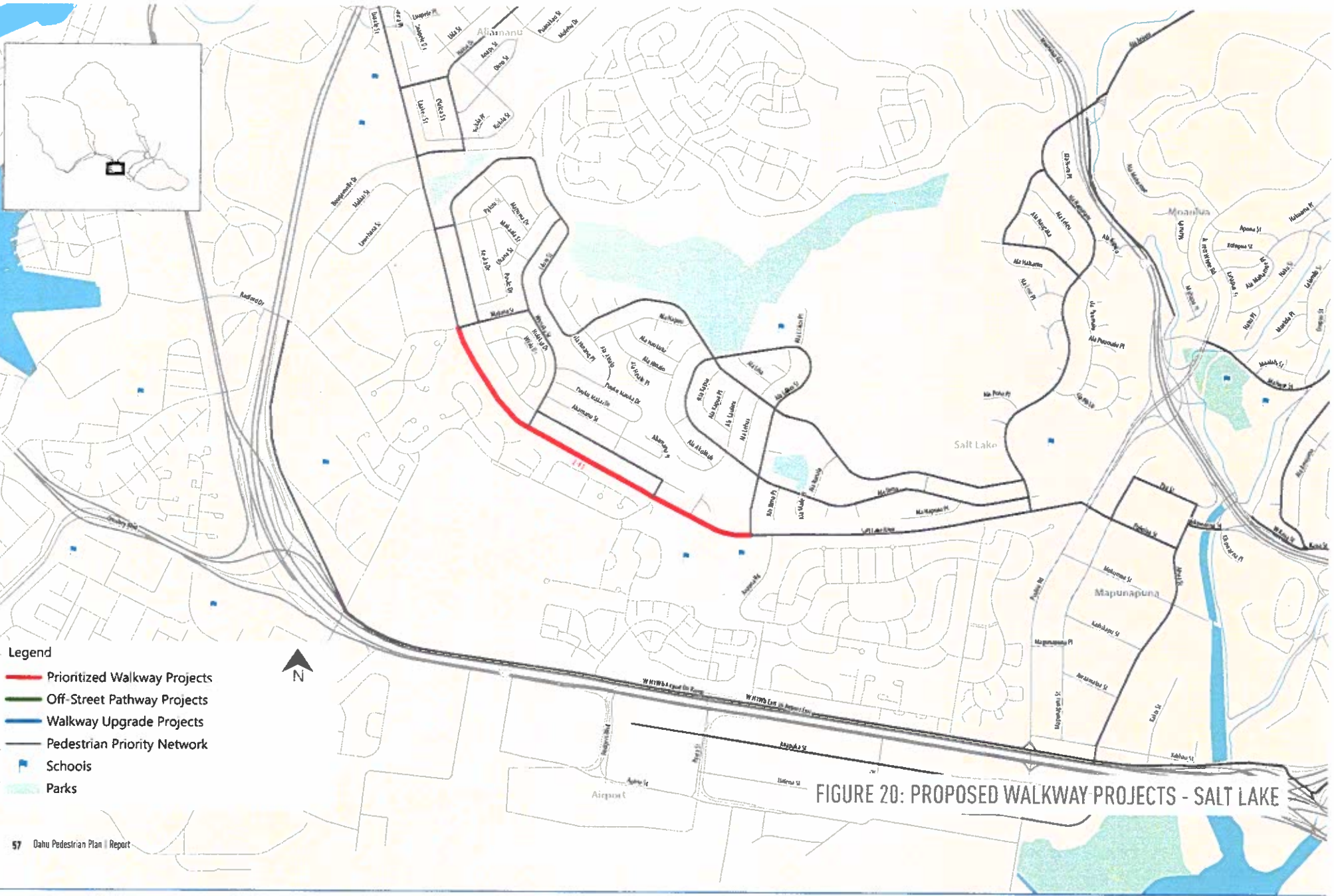


FIGURE 20: PROPOSED WALKWAY PROJECTS - SALT LAKE





- Legend**
- Prioritized Walkway Projects
  - Off-Street Pathway Projects
  - Walkway Upgrade Projects
  - Pedestrian Priority Network
  - Schools
  - Parks



FIGURE 21: PROPOSED WALKWAY PROJECTS - WHITMORE VILLAGE & WAHIAWA





## 5.3 STRATEGIES & TOOLS

This section is intended to complement the Honolulu Complete Streets Design Manual by highlighting some of the most important strategies and tools available to improve the pedestrian network and environment.

### 1.1 CONSTRUCT SIDEWALKS TO COMPLETE GAPS IN THE PEDESTRIAN PRIORITY NETWORK ON MAJOR STREETS

- The Pedestrian Priority Network has been identified as the streets that are most important for pedestrian improvements to provide access to schools and a comfortable place to walk to key destinations along major streets. Filling walkway gaps in the Pedestrian Priority Network will allow more destinations to be accessible and will increase the feasibility of walking, therefore increasing the number of people walking throughout the Pedestrian Priority Network. Sidewalks should be a minimum 5 feet wide with greater widths on sidewalks in areas with higher pedestrian activity. While sidewalks do not need to be perfectly straight, the Pedestrian Zone should not weave back and forth in the right-of-way for no other reason than to introduce curves. Meandering sidewalks create navigational difficulties for pedestrians with vision impairments.



### 1.2 CONSTRUCT WALKWAYS WITH COST-SAVING STRATEGIES TO COMPLETE GAPS IN THE PEDESTRIAN PRIORITY NETWORK ON NON-MAJOR STREETS

Where sidewalks may be infeasible or undesired due to neighborhood character, at-grade walkways and shared use paths can provide a lower-stress pedestrian facility to increase pedestrian comfort on non-major streets throughout the Pedestrian Priority Network.

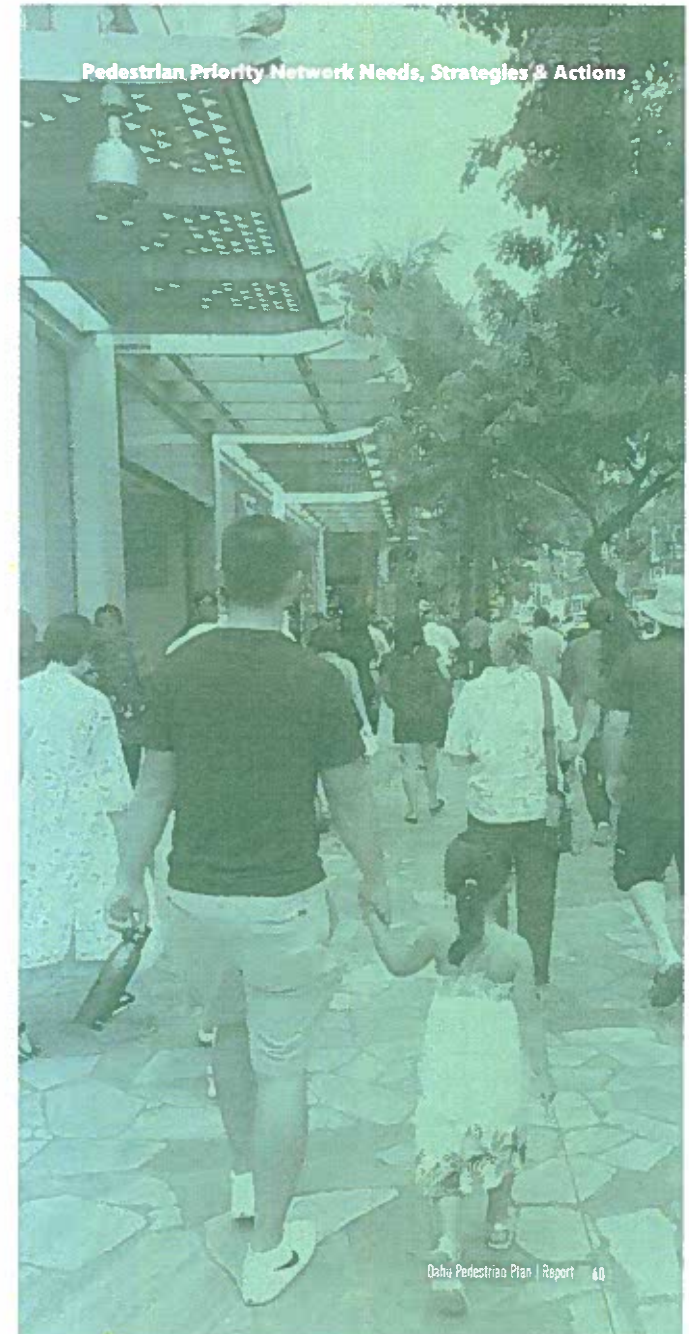


#### TOOL 1.2.1: AT-GRADE WALKWAYS (SEPARATED OR PROTECTED)

At-grade walkways provide a demarcated space for pedestrians to walk on non-major streets where speeds are low and there is little vehicular traffic. These at-grade walkways can be separated or protected from the roadway using a striped buffer, berm, movable planters, modular curbing and delineators or other vertical elements that provide physical separation.

#### TOOL 1.2.2: SHARED-USE PATHS

Shared-use paths provide a space for pedestrians, bicyclists (recreational users and commuters), skaters, wheelchair users and other non-motorized users to travel that is off-street, completely separated from vehicular traffic. Shared use paths can increase pedestrian and bicyclist comfort and attract users of all ages and abilities, allowing more people to choose to walk and bike to and from their destinations. As these facilities can accommodate both pedestrian and bicyclists, both pedestrian and bicycle funding can be combined to fund these facilities. This will increase the economy of the funds used.



### 1.3 IMPLEMENT LOW-COST IMPROVEMENTS

Where sidewalks may be infeasible or undesired due to neighborhood character, low cost improvements can increase the comfort for those on foot and encourage more people to walk to and from their destinations.

#### TOOL 1.3.1: PAVED SHOULDERS

Paved shoulders create a space for pedestrians to walk along. A paved shoulder provides an all-weather surface, free of vegetation. A paved shoulder is easier to navigate than an unpaved shoulder for those with mobility limitations. Paved shoulders may require substantial buffers from vehicle traffic to maintain a higher level of comfort on roadways with high volumes or speeds.

#### Implementation Success Story

*Implementation Success Story* Azure Ala Moana, a high rise mixed-use development in the Ala Moana TOD district, provided a number of pedestrian improvements as part of community benefits provided in exchange for height and density bonuses. The project widened the sidewalk on Keeaumoku Street along its frontage, provided a pedestrian plaza with public seating, and added new street trees. In addition to the improvements to the pedestrian environment, the project also implemented a pedestrian scramble at the intersection of Makaloo Street and Keeaumoku Street to improve safety at the High Pedestrian Injury Intersection. The project is a great example of the pedestrian improvements that can be implemented as part of a development and without the use of public funds.

#### TOOL 1.3.2: ADVISORY SHOULDERS

Advisory shoulders create shoulders that pedestrians can use on roadways that are too narrow for traditional paved shoulders. This type of shoulder is demarcated using lane striping that creates a single travel lane that is shared by vehicles traveling in both directions. Drivers may only enter the shoulder when necessary and safe to navigate around an on-coming vehicle. Bicyclists can also use advisory shoulders. This treatment is considered experimental in the United States and requires an approved request from the Federal Highway Administration to install.

#### TOOL 1.3.3: BIKE LANES

Where bicycle volumes or bicycle speeds are low, bike lanes may be used by pedestrians as an alternative to a paved shoulder. Compared to paved shoulders, bike lanes provide the advantage in that parking in a bike lane is explicitly prohibited by ordinance, ensuring that the area is clear of parked vehicles that might obstruct its use.

#### TOOL 1.3.4: SHARED STREETS

Shared streets are streets where the roadway is shared between vehicles, bicycles, and pedestrians with little to no segregation between modes. On shared streets, all roadway users mix together on a level roadway. Shared streets are an interim or permanent solution that can provide an enhanced pedestrian environment, where walkways are impractical and traffic speeds and volumes are appropriately low. Shared streets are designed to look different from other roadways, designed for speeds of 15 mph or less and to have low to very low vehicular traffic volumes. Due to all modes sharing the roadway space, drivers must yield to all other users. Shared streets can provide network connectivity for walking and bicycling. Design considerations typically include gateways that clearly define the extent of the Shared Street, traffic calming to reduce driver speeds to be comparable to bicyclists and pedestrians, and strategic parking placement focused on reducing driver speeds and discouraging through vehicular traffic.





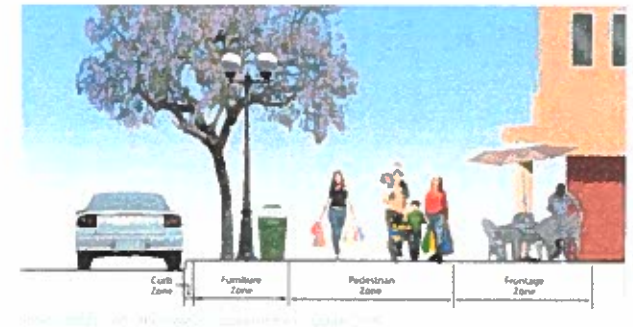
## STRATEGY 2: PROVIDE CLEAR SIDEWALKS

### 2.1 REQUIRE PLACEMENT OF UTILITIES TO PROVIDE PREFERRED PEDESTRIAN ZONE WIDTH

- Above-ground utilities such as utility boxes, fire hydrants and utility poles can constrain the width of the pedestrian zone, limiting the space that a pedestrian has to walk to their destination. A sidewalk that is designed with pedestrian access in mind should include a clear "furniture zone" or "utility zone" on the sidewalk that is separate from the pedestrian clear zone. New sidewalks will be required to place above-ground utilities in a designated zone such that they are not encroaching on the preferred width of the pedestrian zone, while a relocation of existing utilities would occur during major utility or street work as part of a City and County or development project.

### 2.2 PLACE BIKE PARKING, BUS SHELTERS, AND SEATING OUTSIDE OF THE PEDESTRIAN ZONE

- Bike parking, bus shelters, and seating can also constrain the width of the pedestrian zone. New bike parking, bus shelters, and seating should be placed outside of the preferred pedestrian zone width in order to ensure that adequate space is allowed for pedestrians traveling along the sidewalk.



## STRATEGY 3: UPGRADE WALKWAYS

### 3.1 WIDEN SIDEWALKS IN HIGH PEDESTRIAN TRAFFIC AREAS

- In order to accommodate higher pedestrian volumes, sidewalks can be widened beyond the minimum pedestrian zone width to allow for two people or more to walk side by side and also to allow for passing. This will allow a freer flow of pedestrians along the sidewalk.

**Implementation Success Story** - Azure Ala Moana, a high-rise mixed-use development in the Ala Moana TOD district, provided a number of pedestrian improvements as part of community benefits provided in exchange for height and density bonuses. The project widened the sidewalk on Keeauomoku Street along its frontage, provided a pedestrian plaza with public seating, and added new street trees. In addition to the improvements to the pedestrian environment, the project also implemented a pedestrian scramble at the intersection of Makaloa Street and Keeaumoku Street to improve safety at the High Pedestrian Injury Intersection. The project is a great example of the pedestrian improvements that can be implemented as part of a development and without the use of public fund.

### 3.2 UPGRADE EXISTING WALKWAYS TO MEET ACCESSIBILITY STANDARDS

- In order to ensure that people of all abilities can navigate existing walkways, walkways should be upgraded to provide accessible curb ramps, cross-slopes, and width consistent with federal accessibility standards. This includes upgrading driveways to provide a level walkway at the back of the driveway apron and maintenance to address trip hazards from cracks and upheaval in the sidewalk.

### 3.3 PROVIDE BUFFERS TO SEPARATE PEDESTRIANS FROM MOTORISTS

Pedestrian comfort can be affected by the proximity of the pedestrian walkway to vehicular traffic flow. In order to increase comfort, buffers can be placed between the walkway and the roadway. Buffers can include a landscaped buffer, seating or other street furniture, and bicycle and parking lanes.

#### TOOL 3.3.1: LANDSCAPED BUFFER WITH TREES TO MAXIMIZE SEPARATION

A landscaped buffer located against the curb on the sidewalk can provide separation between the pedestrian walkway and roadway. Trees not only provide separation but can also provide shade for pedestrians, enhancing pedestrian comfort in all weather conditions.

#### TOOL 3.3.2: PARKING OR BIKE LANE TO PROVIDE GREATER SEPARATION

On-street curbside parking and bicycle lanes provide separation between the pedestrian walkway and the portion of the roadway with active vehicle traffic. These two items can be used to create a buffer that increases the comfort of the pedestrians on walkways.





## STRATEGY 4: ENHANCE THE PEDESTRIAN ENVIRONMENT

### 4.1 PROVIDE PROTECTION FROM THE ELEMENTS

On Oahu it is very important to provide protection from intense sun and heat and rain. Trees and awnings placed along pedestrian walkways can provide protection from many elements thereby increasing the amount of time that pedestrians will choose to walk.

#### TOOL 4.1.1: TREES

Trees can provide shade and physical separation between pedestrians and vehicle traffic, contributing to pedestrian comfort and safety.

#### TOOL 4.1.2: AWNINGS

Awnings can provide shade and protection from rain. The use of awnings is most appropriate in commercial districts where sidewalk space may be constrained and businesses front onto the sidewalk.

### 4.2 PROVIDE BUS SHELTERS/SEATING

- Bus shelters and seating can provide protection from sun and rain and provide a place to rest while waiting for the bus to arrive.



## STRATEGY 5: PEDESTRIAN-ORIENTED DEVELOPMENT

### 5.1 PROVIDE A HIGH LEVEL OF PEDESTRIAN CONNECTIVITY

- A pedestrian network with a high level of connectivity can provide quicker access to a wider range of destinations and by doing so can encourage more people to walk.

### 5.2 PROVIDE SAFE AND CONVENIENT PEDESTRIAN SITE CONNECTIONS TO TRANSIT

- Safe and convenient connections to transit are necessary to encourage the use of the transit system to ensure a "first mile / last mile" connection. New development should provide these connections to support the use of transit by the development's employees, residents, or customers.

### 5.3 AVOID DEVELOPMENT-BASED ROAD WIDENING

- In order to preserve the quality of the pedestrian environment, development-based road widening is discouraged. Widening roadways can increase vehicular volumes and speeds on the roadway and increases the crossing distance for pedestrians, increasing exposure and reducing comfort of the roadway and the crossing. Widening may be considered to provide wider sidewalks and an enhanced pedestrian environment or bikeway/transit improvements.



Photo Source: The Business Journals

#### 5.4 ORIENT SITES TO THE SIDEWALK

- Buildings that are oriented towards the sidewalk can enhance the pedestrian environment by providing visual interest and increasing the ability of those in buildings to observe sidewalk activity. New development should be oriented towards existing or new sidewalks in order to provide this increase in pedestrian comfort.



Photo Source: The Business Journals



Photo Source: The Business Journals

#### 5.5 PROVIDE PRIMARY ENTRIES DIRECTLY FROM THE SIDEWALK

- Instead of providing a primary entry that is more easily accessible by a vehicle, primary entrances to new developments should be oriented towards existing or new sidewalks in order to encourage and facilitate intuitive pedestrian access. A circuitous path of travel for pedestrians from the sidewalk to the primary entrance should be avoided.

#### 5.6 PROVIDE ACTIVE AND INVITING FACADES ON HIGH PEDESTRIAN TRAFFIC STREETS

- Similar to orienting new development towards the sidewalk, providing active and inviting facades on high pedestrian traffic streets can increase pedestrian comfort and enhance pedestrian activity. Active and inviting facades can consist of the following: ground floor windows or other transparent building materials, a consistent line of varying storefronts and other facades, outdoor cafes, public seating areas or other active sidewalk elements, adjacent parks, plazas or open spaces, public art, buildings of architectural and historic interest, mixed-use and diverse housing types, and high quality landscaping.



Photo Source: The Business Journals



Photo Source: The Business Journals

#### 5.7 SHIELD PARKING, VEHICULAR CIRCULATION AREAS, AND UTILITIES FROM THE SIDEWALK

- Shielding parking, vehicular circulation, and utilities from the sidewalk can enhance the comfort and aesthetics of the pedestrian environment. These shields can consist of artwork or landscaping and greenery. These shields can reduce ambient noise associated with vehicles and increase the pedestrian's perceived feeling of safety.

#### 5.8 PROVIDE SEATING IN COMMERCIAL AREAS

- Seating in commercial areas can provide a space for both those frequenting the businesses and those walking by who need a short rest. Seating in commercial areas can activate these spaces and make them more inviting for all.

#### 5.9 PROMOTE THE DEVELOPMENT OF NEIGHBORHOOD-SIZED SCHOOLS

- To encourage school commutes that can easily be completed on foot or bicycle, the development of neighborhood-sized schools should be encouraged. By placing schools in the communities that they serve, the commute distance from home to school is reduced allowing more students to travel from home to school by walking or bicycling.



Photo Source: The Business Journals



Photo Source: The Business Journals



## 5.4 ACTIONS

**TABLE 13: PEDESTRIAN PRIORITY NETWORK ACTIONS**

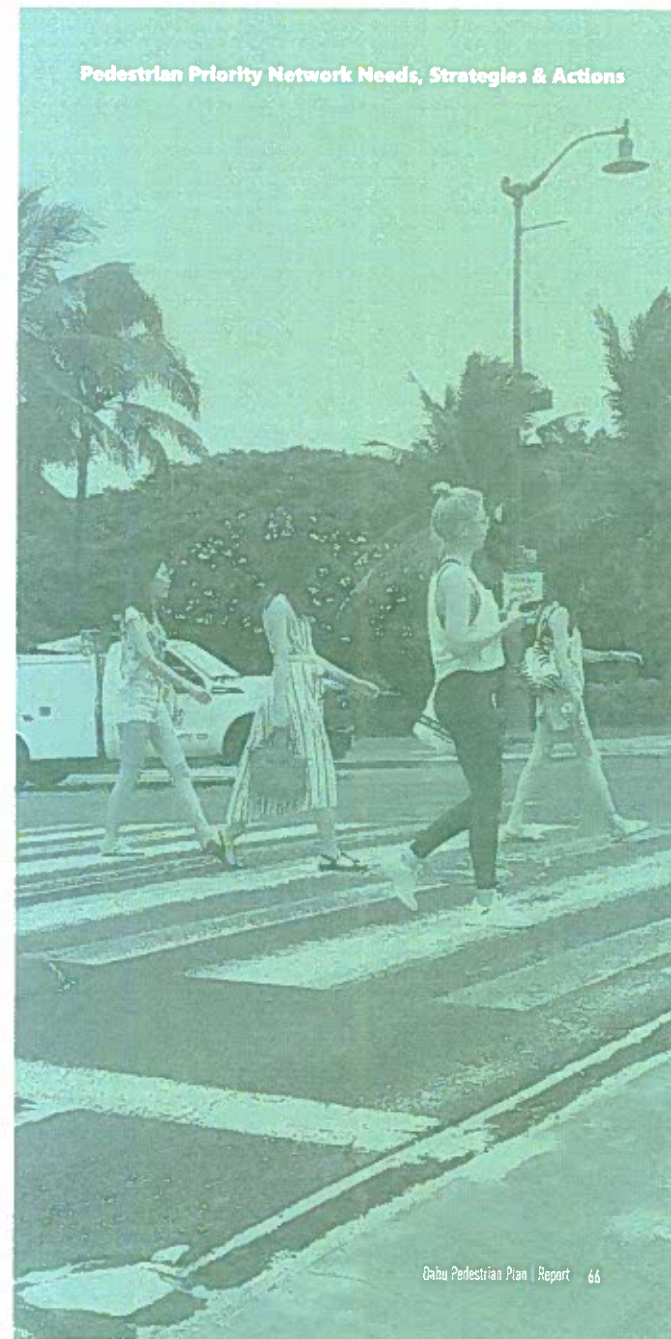
#	ACTION	RESPONSIBLE DEPARTMENT
1	Program dedicated capital improvement funding to implement new sidewalks/walkways on Pedestrian Priority Network major streets and school zones	DTS, DDC
2	Implement new sidewalks/walkways on Pedestrian Priority Network major streets and school zones as part of Rehabilitation of Streets projects	DTS, DDC
3	Implement striping and signage improvements on Pedestrian Priority Network with pavement preservation, repair, and rehabilitation work	DTS, DDC, DFM
4	Plan and implement intersection and corridor pedestrian improvements on Pedestrian Priority Network major streets with Rehabilitation of Streets projects	DTS, DDC
5	Install speed control measures on neighborhood streets on the Pedestrian Priority Network with Rehabilitation of Streets projects	DTS, DDC
6	Assess and implement signal enhancements that improve pedestrian safety and access on the Pedestrian Priority Network	DTS
7	Update and implement the Curb Ramp Transition Plan	DDC
8	Develop an access management policy to limit driveways on Pedestrian Priority Network	DPP, DTS
9*	Update development regulations and roadway standards for new development to meet the sidewalk standards per the Complete Streets Manual and provide other pedestrian environment enhancements on the Pedestrian Priority Network	DPP, DTS
10*	Update land use codes to require and/or incentivize pedestrian oriented development on the Pedestrian Priority Network	DPP
11	Adopt "Pedestrian First" policy via ordinance	DTS, City Council

\*Actions 9 and 10 are already being implemented through codes and project permitting in transit-oriented development districts. This plan recommends similar policies in other Pedestrian Priority Network areas.

### PEDESTRIAN FIRST POLICY

Walking is the most basic form of transportation and is the building block of the transportation system. Safely accommodating walking is a fundamental function of streets. A Pedestrian First policy establishes pedestrians as the highest modal priority. This policy would ensure that providing basic accommodations for pedestrians is held as the highest priority in City projects. This policy would inform decision-making when modal trade-offs are considered. The Pedestrian Priority Network would be used to further identify the streets of greatest importance to walking.

### Pedestrian Priority Network Needs, Strategies & Actions





## 6.0 EDUCATION, ENCOURAGEMENT & ENFORCEMENT PEDESTRIAN PROGRAMS

Achieving a pedestrian-friendly Oahu requires addressing all 6 E's – engineering, education, encouragement, enforcement, equity, and evaluation. Much of the Plan up to this point has focused on engineering (ex: walkways, safe crossings), and equity is an integral part of the Plan. This section identifies the most critical actions the City will take around education, encouragement, and enforcement. **Chapter 7** covers evaluation.



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### ONGOING EDUCATION CAMPAIGN



- Expand upon the Pedestrian Safety Program and Walk Wise Hawaii
- To a greater extent, expand driver-oriented education campaigns to educate drivers on yielding to pedestrians, navigating newer crossing, signal, and pathway improvements.
- Provide information on transportation opportunities and the rules of the road through advertisements, online media, and other items

### WALK TO WORK EVENTS



- Walk to Work Day or Month to potentially include: nature walks, scavenger hunts, historical walking tours, and neighborhood parties
- Employers could incentivize employees to walk to work through competition and giveaways

### SAFE ROUTES TO SCHOOL EDUCATION PROGRAM



- The Department of Transportation Services' Safe Routes to School Program, in collaboration with Walk Wise Hawaii and the Honolulu Police Department, offers pedestrian safety education to Elementary School students through school-wide assemblies and an interactive workshop (WalkEd). WalkEd presents to 3rd graders and teaches the concept of distracted driving, the importance of being alert, and key points of pedestrian safety. WalkEd also supports 3rd grade teachers in leading a walking field trip to provide an opportunity for students to apply the lessons learned.





ENCOURAGEMENT

### TRANSPORTATION DEMAND MANAGEMENT (TDM)



- TDM program managed by City and County of Honolulu could include:
  - *Best practices, legislative recommendations and enabling policies, Island-wide mode share targets, Residential Commute Trip Reduction Strategies and Investments, Employer Commute Trip Reduction Strategies and Investments, Community Outreach and engagement, Program website, Program Administration, Marketing, and Educational Materials, Online reporting and webmap monitoring mechanism*

### TRANSIT IMPROVEMENT AND EXPANSION



- Encourage active transit options by expanding 24/7 bus routes, express bus routes, and additional Limited stop bus options to serve rural/ outlying communities
- Implement FAST (Fixing and Streamlining Transit) POLICY for Honolulu's Urban Core
  - *Provides public transportation priority in transportation planning and operations considerations*
  - *Prioritizing transit would increase walking as all transit riders are pedestrians at the beginning and end of their journey*



ENFORCEMENT

### POLICE DEPARTMENT INVOLVEMENT



- In-person education and police warnings
- Tickets and fines for violations
- Effective for all streets, especially:
  - *New roadway configurations*
  - *Traffic signal changes*
  - *Areas with new developments*
  - *Focus on enforcing the most harmful driving behaviors to pedestrians such as distracted driving, speeding and impaired driving in areas with high pedestrian activity*
- Deprioritize enforcement of low-risk violations like crossing during the countdown timer and distracted walking

### CURBSIDE MANAGEMENT PROGRAM



- Open up the curb to pedestrians, bicycles, and transit by dedicating space for:
  - *Parklets and outdoor restaurant seating*
  - *Bike share stations or bicycle parking*
  - *Transit-only lanes*
  - *Time-limited passenger loading*
  - *Loading zones for freight and goods*



### WORK ZONE ACCOMMODATION



- Provide pedestrian accommodation during road work and construction by separating pedestrians from other road users in construction areas and providing direct pedestrian routes. This is particularly important for those with disabilities and required by law.

### NEW MOBILITY PROGRAM

- Provide guidance and requirements for accommodating new mobility – segways and electric foot scooters – on Oahu's streets and focus on preserving sidewalk space for pedestrians.

### PRESERVE AND EXPAND PEDESTRIAN RIGHTS IN TRAFFIC CODE



- Revise and preserve the traffic code to provide for pedestrian rights and responsibilities that provide for safety, transportation equity, and accessibility
- Provide clarity on failure to yield or failure to stop for a pedestrian in a marked or unmarked crosswalk as a traffic offense
- Encourage the City and County of Honolulu to repeal or amend the law that makes it illegal to allow pedestrians to begin to cross the street when the "Don't Walk" or "Upraised Palm" is illuminated as long they complete their crossing within the countdown timer
- Eliminate jaywalking offences and to transfer liability to drivers operating vehicle in areas with heavy pedestrian activity or walking environments that are considered low stress or low speed





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# 7.0 IMPLEMENTATION & EVALUATION

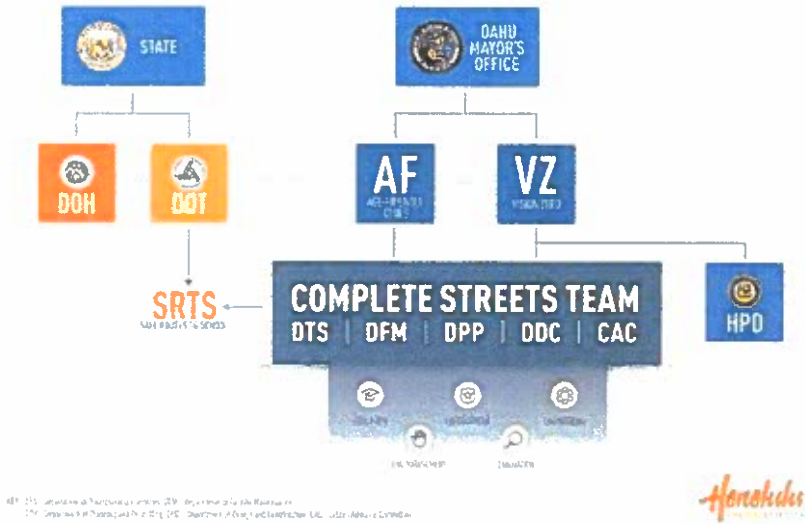
## 7.1 COUNTYWIDE FRAMEWORKS

To best support the recommended pedestrian programs, the Plan also recommends implementation of associated countywide policies and administrative frameworks.

Pedestrian planning is increasingly addressed from within a multi-modal, Complete Streets framework, where transportation planning is approached as an interdisciplinary effort that involves many departments. This approach acknowledges that Oahu's streets are part of a larger system at the intersection of land use patterns,

physical infrastructure, human behavior, laws and regulations, data science, and technology. The City has already established multi-departmental Complete Streets and Age Friendly Cities initiatives. In addition to these efforts, the City should consider adopting a high-level Vision Zero policy. The figure below illustrates the suggested policy organization and the key state and local partners for each initiative.

### Agency Framework





The following countywide frameworks will be helpful tools to the multiple departments responsible for implementing this Plan. The various examples below represent an existing or recommended initiative, approach, or philosophy that make it possible to implement pedestrian programs and infrastructure projects.

### COMPLETE STREETS

Complete Streets is a policy to develop, retrofit, and maintain the transportation network to safely accommodate all modes of travel and those of all ages and abilities. The City is strongly committed to the Complete Streets approach. The Complete Streets Ordinance (12-15) was adopted by City Council in 2012 and the Complete Streets Checklist and Design Manual were completed in 2015 and 2016, respectively. Complete Streets shapes every City project as the policy applies to all roadway maintenance, construction, and reconstruction projects. Implementing Complete Streets with every City project provides for efficient use of resources. Notably, the Complete Streets approach with the Rehabilitation of Streets program has implemented improvements on many of miles of City streets and will continue to be a major implementation program. Several major Complete Streets projects have already been completed and many more are being planned.

### VISION ZERO

Vision Zero is a high-level initiative that requires active participation from multiple state and local partners. The agencies and departments listed in the Agency Framework graphic – Hawaii Department of Transportation; Hawaii State Department of Health; Honolulu Police Department; the Mayor's Office; and the Complete Streets Team – have been identified as key partners for the City, but are by no means the only departments or organizations that should be involved.

### AGE-FRIENDLY CITIES INITIATIVE

In May 2013, the City was selected into the World Health Organization's Global Network of Age-Friendly Cities and Communities and AARP's National Network of Age-Friendly Communities. An Age-Friendly Cities Action Plan was completed in summer 2015 and implementation is now underway. The content of this initiative extends beyond transportation, but recognizes a "safe, clean, and timely" transportation system as a crucial ingredient to extending independence, good-health, and civic participation among an aging population.

### SAFE ROUTES TO SCHOOL

Early adoption of bicycling and walking as transportation modes is one of the strongest predictors of multi-modal travel later in life. Walking and biking to school also reduces the round-trip vehicle trips made by parents, raises awareness about pedestrian and bicycle street safety, and contributes to an active, healthy lifestyle for children of all ages. Safe Routes to School (SRTS) is a national movement to enable and encourage greater numbers of school children to walk and bike to school. The City has a SRTS program that makes infrastructure improvements to address the needs of students walking and bicycling to school and works with schools to support non-infrastructure projects.

### HONOLULU QUICK BUILD

Quick build projects provide an option to construct transportation projects faster and at a lower cost than typical transportation projects. This faster implementation and lower cost allow these quick build projects to make an immediate impact for a neighborhood and address pedestrian network concerns quickly. The design-testing and prototyping of these projects align well with Vision Zero efforts. Quick build projects can include paint bulb-outs to narrow crossing distance like those installed in Kalihi, or flexible delineators to provide separation between the road and a pedestrian should or pathway.

### DEVELOPMENT REQUIREMENTS

Development plays a key role in the shaping the pedestrian environment. Development review can ensure that new developments complete critical missing sidewalks, improve pedestrian safety, and enhance the pedestrian environment. Transit-Oriented Development codes and review processes have been very successful in achieving pedestrian improvements as part of development projects and serve as a strong example of what more could be done to achieve these needed improvements across Oahu and at no cost to taxpayers.

## 7.2 PEOPLE RESOURCES

Implementation of the Pedestrian Plan will require expanded administrative and staff capacity. Three approaches to overseeing Plan implementation are described below, including: 1) strengthen and grow the Complete Streets Team, and 2) continue to train all staff within the Complete Streets departments in Complete Streets policies and procedures.

### COMPLETE STREETS TEAM

The Complete Streets Team – a multi-departmental group with representatives from Facility Maintenance (DFM), Transportation Services (DTS), Planning and Permitting (DPP), and Design and Construction (DDC)—is responsible for overseeing implementation of the Oahu Pedestrian Plan. As established in the Standard Operating Procedure memo regarding Complete Streets (August 30, 2018), the directors of each participating department “shall assign or hire a full-time Complete Streets Administrator (CSA) to lead the [Complete Streets] Team.”

### COMPLETE STREETS TRAINING

Although the CSA and the Complete Streets Team will oversee implementation of the Pedestrian Plan, division staff members will ultimately be responsible for carrying out individual program and policy recommendations. All DFM, DTS, DPP, and DDC division staff members and select staff members from other relevant departments should receive annual training on Complete Streets policies, best practices, and the Design Manual.

### WALK AUDIT PROGRAM

Walk audits can be an effective way to identify potential improvements of pedestrian infrastructure. Walk audits allow members of the community and City and County staff to experience the pedestrian environment on foot and identify ways to ameliorate any safety concerns. Walk audits can be used as part of project planning. City and County staff should continue to partner with neighborhood groups to perform walk audits in various neighborhoods throughout the island.

## 7.3 FUNDING RESOURCES

Federal, state, county and local organizations provide funding for pedestrian and Complete Streets projects and programs. The most recent federal surface transportation funding program, Fixing America's Surface Transportation Act (FAST Act), which determines federal funding availability, was signed into law in December 2015. FAST Act funding is distributed to Federal and State surface transportation funds. Most of these resources are available to the City through the Hawaii Department of Transportation (HDOT) and the Oahu Metropolitan Planning Organization (OahuMPO).

Table 8 summarizes the applicability of these various funding sources to project types, planning efforts, and programs proposed in this plan. More detailed descriptions of each funding source are presented in **Appendix D**

### TRIPLE BOTTOM LINE ACCOUNTING

Pedestrian project cost estimates should take economic, environmental, and equity lifecycle considerations into account. These lifecycle cost estimates should be used when considering the cost of projects and allocation of limited funding resources. Ultimately, investing in pedestrian infrastructure should be seen as a long-term investment that can save money over time. When considering the use of programmed funding on pedestrian project the triple-bottom line of benefits on people, the planet, and efficient use of dollars should be considered.



PROGRAMMED FUNDING

Funding is committed to certain projects through the local budget process and regional and state transportation planning processes. Local funds are committed through the Capital Improvement Program and State and Federal funds are committed through inclusion in the OahuMPO Transportation Improvement Program and Statewide Transportation Improvement Program.

CITY AND COUNTY OF HONOLULU CAPITAL IMPROVEMENT PROGRAM (CIP)

Sidewalk projects in the City and County of Honolulu (the City) can be funded through the Capital Improvement Program although they currently account for a very small portion of CIP funds. Funding sidewalks has traditionally been a barrier for the City, but the recent passage of Ordinance 16-33 now allows for City funds to cover up to 100 percent of the cost of pedestrian infrastructure projects (sidewalks in particular) if deemed appropriate. Although City funds can pay for pedestrian projects, there is no dedicated funding source for sidewalk project. To date, there have been no local grant matches for pedestrian infrastructure.

TRANSPORTATION IMPROVEMENT PROGRAM (TIP)

- Developed by OahuMPO
- Short-term, four-year implementation program for all federally-funded and/or regionally significant transportation projects within the MPO's planning area
- CCH total: \$97,451,000 approved for FY 2018 (combination of federal and local funds, excluding Honolulu Rail Transit Project)
- \$96,394,000 identified for FY 2019 (excluding the Honolulu Rail Transit Project)
- \$125,706,000 identified for FY 2020 (excluding the Honolulu Rail Transit Project)
- Projects are eligible for federal funds

OAHU REGIONAL TRANSPORTATION PLAN (ORTP)

- Developed by OahuMPO
- Long-term vision document (25-year horizon)
- Projects are eligible for federal funds

Table 14: Programmed Funding							
FUNDING SOURCE	RECREATION & TRAILS	TRANSIT ACCESS PROJECTS	SAFETY	PLANNING AND PROGRAMS	RURAL	HIGHWAY ON/OFF RAMP	SIDEWALK PROJECTS
DOT BUILD Discretionary Grants	●	●	●	●	●	●	●
National Highway Performance Program	●	●	●	●	●	●	●
Highway Safety Improvement Program	●	●	●	●	●	●	●
Railway-Highway Crossings Program	●	●	●	●	●	●	●
Congestion Mitigation and Air Quality Improvement	●	●	●	●	●	●	●
Federal Lands Access Program	●	●	●	●	●	●	●
Surface Transportation Block Grant Program	●	●	●	●	●	●	●
Urbanized Area Formula Grant (FTA 5307)	●	●	●	●	●	●	●
Enhanced Mobility of Seniors & Individuals with Disabilities (5310)	●	●	●	●	●	●	●
State of Good Repair Grants (5337)	●	●	●	●	●	●	●
Bus and Bus Facilities Infrastructure Investment Program (5339)	●	●	●	●	●	●	●
Hawaii Transportation Alternative Program	●	●	●	●	●	●	●
Recreational Trails Program (Na Ala Hele Trail and Access Program)	●	●	●	●	●	●	●
Land and Water Conservation Fund	●	●	●	●	●	●	●
State Safe Routes to School Special Fund	●	●	●	●	●	●	●
State Highway Fund	●	●	●	●	●	●	●
City and County of Honolulu Funds	●	●	●	●	●	●	●

Legend: ● = there is some funding source for this category, whether or not it may match with a 100% match. ● = there is no funding source for this category or there is a 100% match.

## 7.4 PERFORMANCE MEASURES

Performance measures track progress in achieving the goals and objectives. Identifying performance measures at the outset of a planning effort helps to operationalize the Plan's goals and objectives, and keeps Plan implementers accountable for and on-track to achieve the Plan's vision towards each of these targets.

The graphics to the right present performance measures that are adapted from peer pedestrian plans and the benchmarking process completed as part of this Plan. The measures are tailored to reflect the planning context and data availability on Oahu. All performance targets apply to horizon year 2031 (10 years after the completion of the plan); interim targets are suggested on an annual or semi-annual basis. Progress should be steady over the course of ten years, such that five years after completion of the plan, Oahu should be halfway towards each of these targets.





## 7.5 EVALUATION PROGRAMS & NEXT STEPS

The City and County of Honolulu intends to monitor progress on the implementation of this plan over time. The following programs will help to track and evaluate success related to all four goal categories to create a pedestrian transportation environment that is safe and healthy, sustainable, responsive, and equitable. Key performance measure targets that will be tracked through these programs include an increase in pedestrian volumes, safety improvements at high pedestrian injury locations, new walkways to build out the Pedestrian Priority Network, and a reduction in fatalities and serious injuries.

### Pedestrian Volumes Count Program

(Used to help track and evaluate Pedestrian Activity Performance Measure)

- Pedestrian volumes along key travel corridor and at intersections should be collected and mapped to:
  - Gauge the success of an improvement
  - Determine the demand of a corridor
  - Contribute to collision reports and monitoring

### Inventory and Maintenance Tracking

(Used to help track and evaluate High Pedestrian Injury Location Improvements Performance Measure and PPN walkway network Performance Measure)

- Location-based inventory of the following should be made available to the public:
  - Pedestrian traffic control devices
  - Walkways
  - Crosswalks
  - Curb ramps
- This inventory should also be integrated with the maintenance reporting and response system.

### Collision Reports and Monitoring

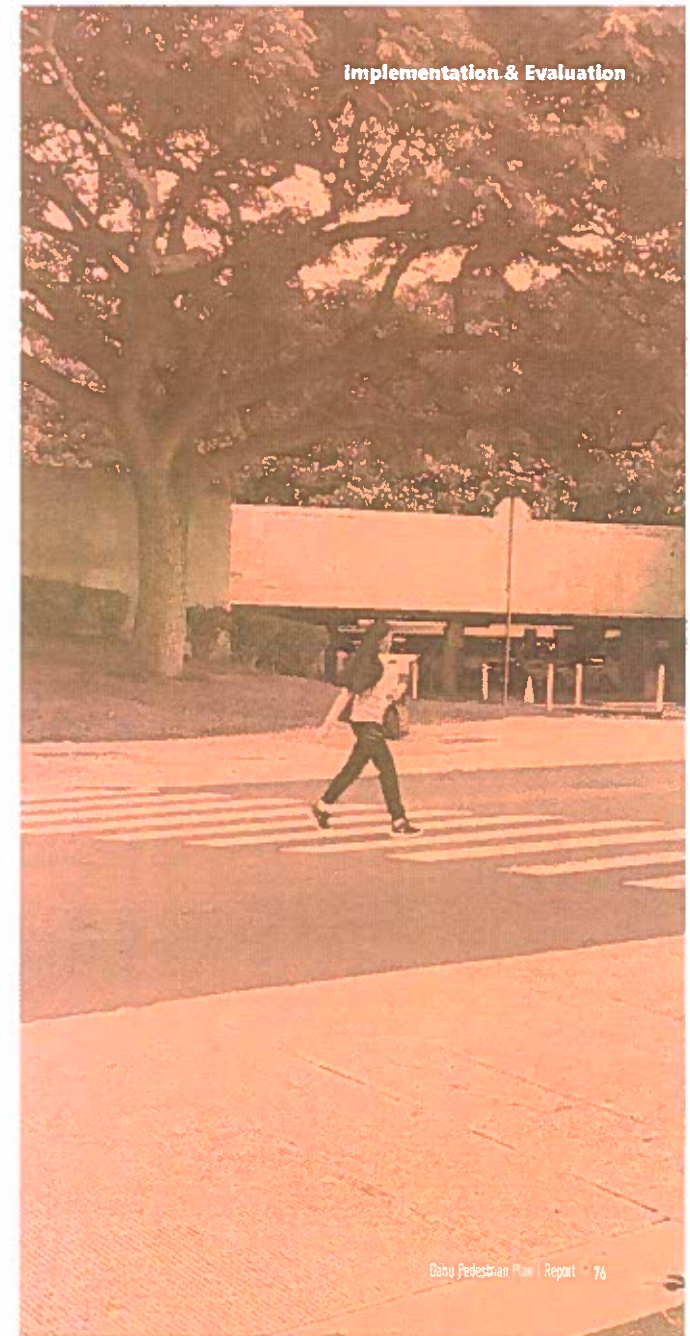
(Used to help track and evaluate Pedestrian Collisions Performance Measure)

- Work with Honolulu Police Department to improve detailed collision report system.
- Create a publicly available database to track collision trends and identify priority locations
- Update High Pedestrian Injury Locations routinely

### Project Evaluation

(Used to help track and evaluate Pedestrian Activity Performance Measure)

- Pre and post data collection to evaluate projects on safety, utilization, and other relevant data. (ex: speed data)







# APPENDIX A

## **Pedestrian Priority Network Methodology**

## PRIORITY NETWORK DEVELOPMENT METHODOLOGY

The Pedestrian Priority Network is the network of walkways that connect people of all ages and abilities to the walkable places they need and want to go. The Pedestrian Priority Network is built on the idea that 1. the most important streets and bus routes must be pedestrian friendly streets, 2. business, mixed-use, and transit oriented development districts should be thoroughly walkable, and 3. schools and major destinations should be well connected with pedestrian facilities.

The Pedestrian Priority Network includes:

- Major road classifications (as identified by the *Highway Performance Monitoring System Roads for Hawaii HPMS as of 2015 (HDOT)*)
  - o Principal Arterial
  - o Minor Arterial
  - o Major Collector
  - o Minor Collector
- Bus Routes
- Transit Oriented Development Key Streets
  - o TOD Key streets available for all City and County of Honolulu TOD areas
    - Waipahu – is in the Ordinance 17-54
    - Everything except Waipahu is draft (still needs to be approved by Council to be official)
    - Note that East Kapolei is incomplete
  - o Kakaako
    - 1 of 2 – DTS created internal Key Streets list
    - 2 of 2 – Hawaii Community Development Authority's TOD Overlay Plan identifies "Primary" Pedestrian streets
- Streets in Mixed Use/Business Districts:
  - o BMX-3
  - o BMX-4
  - o B-1
  - o B-2
  - o Resort MX
- Special Routes
  - o K-12 schools
    - All public schools
    - Charter and private K-12 schools with enrollment 200 or more
  - o Universities and community colleges



- Senior centers and housing
- Major parks
  - Regional parks
  - District parks
  - Community parks
- Connections across gaps within the network
- Connections to limited access highway pedestrian overpass/underpasses or pedestrian bridges over water or gulches (ex: connection to pedestrian overpass over Kamehameha Hwy in Mililani)
- Existing shared-use paths
- Existing off-street walkways of significance
- Existing pedestrian bridges, overpasses, and underpasses that traverse highway, water, or topographic barriers

The above was used to determine an initial draft network. This network included streets in some areas where walking for transportation, beyond to the nearest bus stop, is unlikely due to land use conditions. The following methodology was used to remove streets and refine the Pedestrian Priority Network.

Methodology to remove:

- Low ADT – average daily traffic (under 4000 ADT) and doesn't connect a school or other significant walk generators
- Areas significantly separated by distance or elevation gain from other areas and without internal walk generators, particularly schools. (ex: Pacific Heights)
- Regional rural roads that connect a non-walkable distance between communities (ex: Kaukonahua Rd between Wahiawa and Waialua)
- When assessing areas for walk generators parks with the classification of neighborhood or higher were considered
- Bus ridership was analyzed to ensure bus stops with at least low-moderate activity, defined as daily stop activity of 50 or more, were not removed from the network

# Appendix B

## Project Prioritization Methodology and Demand Index Methodology



## PROJECT PRIORITIZATION

Walkway projects for this plan were prioritized in two stages, first by using the variables summarized in Tables 1 and 2 and second by performing an equity analysis.

The metrics summarized in Table 1 and Table 2 (Tables 3 and 4 provide additional detail) were used to identify the Tier 1, 2, and 3 funding priorities with Tier 1 being the highest priority. A score is assigned to each project according to a) whether the project meets the criteria for each metric and b) the assigned weight for that particular metric. The projects are organized into the three prioritized tiers.

After the projects were assigned to their initial funding scenarios, a Title VI/Environmental Justice (T6/EJ) equity analysis was conducted to ensure that the investment level for each scenario is equitable with T6/EJ areas receiving a share of investments at least equal to their share of the population. The product of this analysis is a table that shows walkways improvement estimated costs by tier and whether the improvement is a T6/EJ area or not (provided in Appendix C). Projects would have been adjusted between funding priorities in order to achieve the desired equitable balance, however the analysis showed that the projects were already equitably distributed.

**TABLE 1: MAJOR STREET SIDEWALK PROJECT PRIORITIZATION METRICS**

METRIC	DEFINITION	SOURCE	WEIGHT
Return on Investment	Low cost + high demand	Plan cost levels and Pedestrian Demand Map	45%
Safety	High concentration of collisions	Collision Map	45%
Public Input	Overlaps geographically with frequent public comments related to pedestrians (within 100ft of a comment)	Public input from online surveys	10%
High Pedestrian Injury Corridor	On High Pedestrian Injury Corridor	HPI map	25% (bonus value on top of all other scores)

**TABLE 2: SCHOOL ZONE WALKWAY PROJECT PRIORITIZATION METRICS**

METRIC	DEFINITION	SOURCE	WEIGHT
School Need	No/low car households + Title I status	American Community Survey Department of Education	50%
Safety Need	High concentration of collisions + street classification	Collision Map HDOT	50%
High Pedestrian Injury Corridor	On High Pedestrian Injury Corridor	HPI map	25% (bonus value on top of all other scores)

**\*High Pedestrian Injury Corridor bonus scoring** – the High Pedestrian Injury Corridors are corridors with the greatest pedestrian safety needs. These relatively small set of streets are a priority for improvements and therefore will be given “bonus” points for 25% for projects on a HPI Corridor.

**TABLE 3: DETAILED MAJOR STREET SIDEWALK PROJECT PRIORITIZATION METRICS**

METRIC	DEFINITION	TOTAL WEIGHT	SCORING
Return on Investment	Low cost + high demand	45%	Score calculated by cost divided by 1-100 Demand Score
Safety	High concentration of collisions	45%	10 - 45% 9 - 40.5% 8 - 36% 7 - 31.5% 6 - 27% 5 - 22.5% 4 - 18% 3 - 13.5% 2 - 9% 1 - 4.5%
Public Input	Overlaps geographically with frequent public comments related to pedestrians	10%	10% - comment overlap 0% - no comment overlap
High Pedestrian Injury Corridor	On High Pedestrian Injury Corridor	25%	25% (bonus value on top of all other scores)

**TABLE 4: DETAILED SCHOOL ZONE WALKWAY PROJECT PRIORITIZATION METRICS**

METRIC	DEFINITION	TOTAL WEIGHT	SCORING
School Need – low car population	Households with one or no cars available (based on ACS census tract data)	25%	Low-car household percentage x 25% (ex: 34% low-car households = 8.5% score)
School Need – low income	Title I School status (based on Hawaii DOE data)	25%	Title I student percentage x 25% (ex: 91% Title I = 22.75% score)



**TABLE 4: DETAILED SCHOOL ZONE WALKWAY PROJECT PRIORITIZATION METRICS**

METRIC	DEFINITION	TOTAL WEIGHT	SCORING
Safety Need - Collisions	High concentration of collisions	25%	10 - 25% 9 – 22.5% 8 – 20% 7 – 17.5% 6 – 15% 5 – 12.5% 4 – 10% 3 – 7.5% 2 – 5% 1 – 2.5%
Safety Need – Street Classification	Higher street classifications	25%	Arterial – 25% Major collector – 16.66% Minor collector – 8.33% Local – 0%
High Pedestrian Injury Corridor	On High Pedestrian Injury Corridor	25%	25% (bonus value on top of all other scores)

# Appendix C

## Title VI and Environmental Justice Analysis



**TABLE 1: TITLE VI AND ENVIRONMENTAL JUSTICE (T6EJ) ANALYSIS**

	TOTAL POPULATION	POPULATION IN T6EJ			POPULATION OUT OF T6EJ		
	953,207	289,321	30%		663,886	70%	
TIER	TOTAL COST	COST IN T6EJ		PER CAPITA	COST OUT OF T6EJ		PER CAPITA
1	\$101,162,151	\$39,770,207	39%	\$137.46	\$61,391,944	61%	\$92.47
2	\$332,736,923	\$106,129,490	32%	\$366.82	\$226,607,433	68%	\$341.33
3	\$106,702,667	\$32,923,944	31%	\$113.80	\$73,778,723	69%	\$111.13

Notes: projects were considered "in" a T6EJ block group if any part of the project intersected the block group polygon.


Tier 1 includes about 4 projects that are technically "shared" between T6/EJ and non-T6/EJ

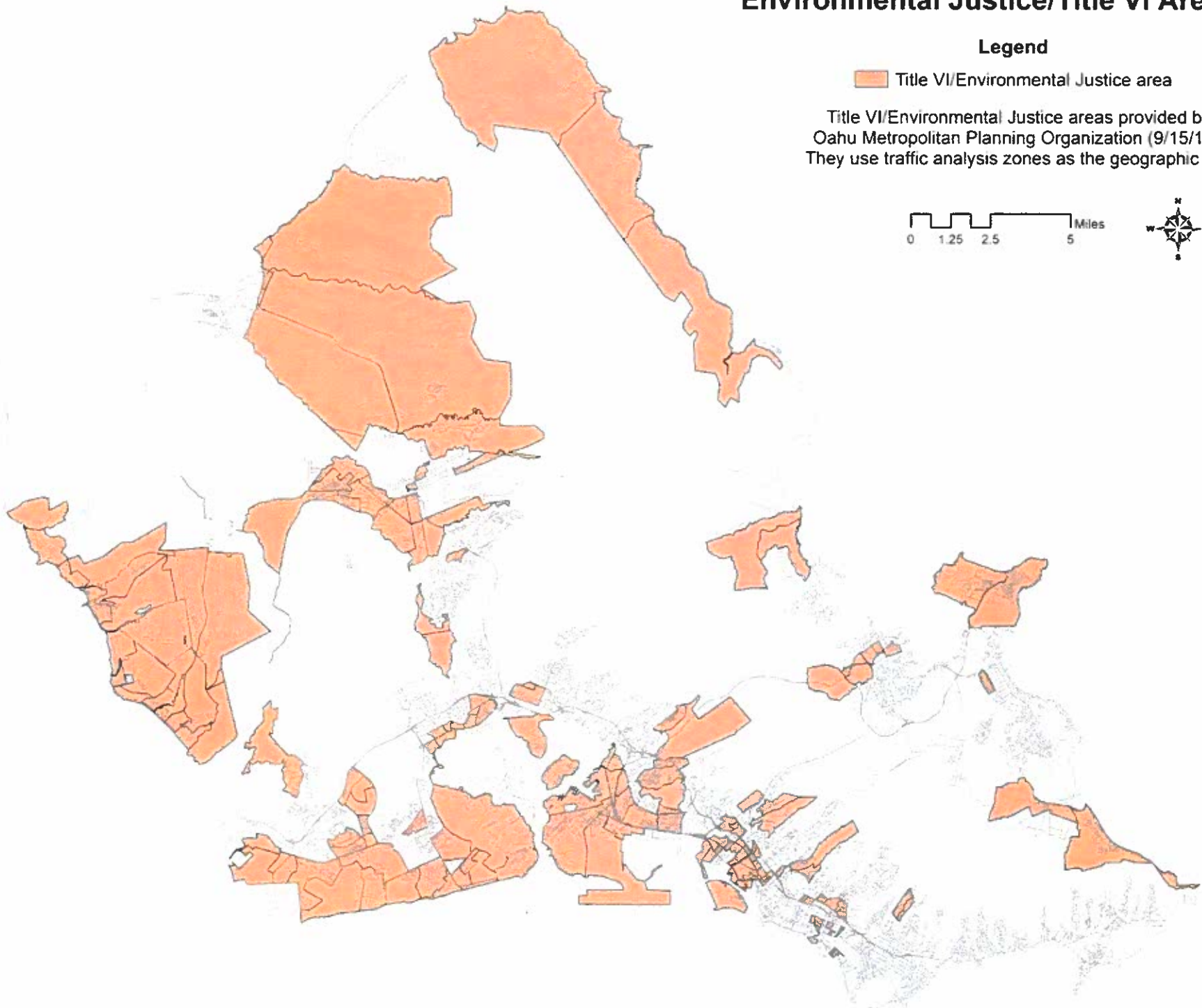
## Environmental Justice/Title VI Areas

### Legend

 Title VI/Environmental Justice area

Title VI/Environmental Justice areas provided by  
Oahu Metropolitan Planning Organization (9/15/16).  
They use traffic analysis zones as the geographic unit.

 Miles





# APPENDIX D

## Funding Sources

## POTENTIAL FUNDING SOURCES

Federal, state, county and local organizations provide funding for pedestrian and complete streets projects and programs. The most recent federal surface transportation funding program, Fixing America's Surface Transportation Act (FAST Act), which determines federal funding availability, was signed into law in December 2015. FAST Act funding is distributed to Federal and State surface transportation funds. Most of these resources are available to the City through the Hawaii Department of Transportation (HDOT) and the Oahu Metropolitan Planning Organization (OahuMPO).

Table 1 summarizes the applicability of these various funding sources to project types, planning efforts, and programs proposed in this plan. More detailed descriptions of the each funding source are presented in the sections below.



**TABLE 1: FUNDING SOURCE APPLICABILITY MATRIX**

FUNDING SOURCE	RECREATION & TRAILS	TRANSIT ACCESS PROJECTS	SAFETY	PLANNING AND PROGRAMS	RURAL	HIGHWAY ON/OFF RAMPS	SIDEWALK PROJECTS
DOT BUILD Discretionary Grants	●	●	●	○	●	●	●
National Highway Performance Program	○	○		◐	◐	◐	○
Highway Safety Improvement Program	◐	○	●	○	◐	◐	◐
Railway-Highway Crossings Program	◐	◐	◐	◐	◐	◐	◐
Congestion Mitigation and Air Quality Improvement	○	◐	○	◐	◐	◐	◐
Federal Lands Access Program	◐	○	○	◐	◐	○	◐
Surface Transportation Block Grant Program	●	●	●	●	●	●	●
Urbanized Area Formula Grant (FTA 5307)	○	◐	○	○	○	○	◐
Enhanced Mobility of Seniors & Individuals with Disabilities (5310)	○	◐	○	○	◐	○	◐
State of Good Repair Grants (5337)	○	◐	◐	◐	○	○	◐
Bus and Bus Facilities Infrastructure Investment Program (5339)	○	◐	○	○	◐	○	○
Hawaii Transportation Alternative Program	●	●	●	●	●	●	●
Recreational Trails Program (Na Ala Hele Trail and Access Program)	●	○	○	◐	●	○	○
Land and Water Conservation Fund	◐	○	○	◐	○	○	○
State Safe Routes to School Special Fund	◐	◐	◐	◐	◐	◐	◐
State Highway Fund	◐	○	◐	◐	◐	●	◐
City and County of Honolulu Funds	●	●	●	●	◐	◐	●

Note: 1. ● Indicates that funds may be used for this category; ○ indicates that funds may not be used for this category, and ◐ indicates that funds may be used, though restrictions apply.  
Source: Fehr & Peers, 2018.

## FEDERAL PROGRAMS

The majority of public funds for pedestrian and trails projects are derived through a core group of federal and state programs and grants. These include:

- **US Department of Transportation BUILD Discretionary Grants:** As of 2018, BUILD grants replace the pre-existing TIGER grant program. BUILD is a competitive grant program intended to fund projects that will have a significant local or regional impact.
  - The maximum grant award for the 2018 cycle is \$25 million for a single project.
  - At least 30% of funds must be awarded to projects located in rural areas.
  - *Oahu's most recent funding year:* TIGER 2009 for Reconstruction of Pier 29
  - *Eligible pedestrian project types:* complete streets projects including traffic calming, new sidewalks, crosswalk improvements, shared-use paths, landscaping, and drainage improvements.

### Federal Highway Administration (FHWA) Programs

The City and County of Honolulu (CCH) has programed funds from the NHPP, HSIP, CMAQ, STBG, and TAP (former TA) in the most recent Oahu MPO Transportation Improvement Program (TIP).

- **National Highway Performance Program (NHPP):** provides support for the condition and performance of the National Highway System.
  - Formula apportionment
  - The State may transfer up to 50% of NHPP funds to another FAST Act formula program.
  - *Eligible pedestrian project types:* funds may be used for pedestrian crossing treatments at National Highway System on/off ramps.
- **Highway Safety Improvement Program (HSIP):** provides funds to reduce traffic fatalities and serious injuries on all public roads.
  - Formula apportionment
  - *Eligible pedestrian project types:* funds may only be used if the project addresses a priority in Hawaii's Strategic Highway Safety Plan, addresses a safety issue identified through a data-driven process, and contributes to reduction in fatalities and serious injuries.
  - **Railway-Highway Crossings Program:** provides funds for the elimination of hazards at railway-highway crossings.

- Formula apportionment
  - Set-aside from the Highway Safety Improvement Program (HSIP) apportionment
  - *Eligible pedestrian project types:* projects at all public crossings including roadways, bike trails and pedestrian paths
- **Congestion Mitigation & Air Quality Improvement (CMAQ):** provides a flexible funding source for transportation projects and programs to help meet the requirements of the Clean Air Act.
  - Formula apportionment
  - The State may transfer up to 50% of CMAQ funds to another FAST Act formula program.
  - *Eligible pedestrian project types:* Funds may be used for a transportation project or program that is likely to contribute to the attainment or maintenance of a national ambient air quality standard, with a high level of effectiveness in reducing air pollution, and that is included in the OahuMPOs current transportation plan and transportation improvement program (TIP).
- **Federal Lands Access Program:** provides funds for projects on Federal Lands Access Transportation Facilities that are located on or adjacent to, or that provide access to Federal lands.
  - Formula apportionment
  - *Eligible pedestrian project types:* Funds may be used for pedestrian projects that provide access to or within federal lands.
- **Surface Transportation Block Grant Program (STBG):** provides flexible funding to best address State and local transportation needs.
  - Formula apportionment
  - The State may transfer up to 50% of STGB funds to another FAST Act formula program
  - *Eligible pedestrian project types:* any pedestrian projects.
  - **Transportation Alternatives (TA)**
    - A set- aside from the overall STBG funding amount
    - All TA projects must be funded through a competitive process at the State level (see State program described below) and through the metropolitan planning process (see OahuMPO program described below).



- *Eligible pedestrian project types:* a variety of smaller-scale transportation projects such as pedestrian and bicycle facilities, recreational trails, safe routes to school projects
- **Recreational Trails Program:**
  - See State Recreational Trails program below
  - A set-aside of funds from the TA Set-Aside

### **Federal Transit Administration (FTA) Programs**

CCH has programed funds from FTA programs 5307, 5310, 5337, and 5339 in the most recent OahuMPO Transportation Improvement Program (TIP). Currently, DTS conducts all bus stop access projects and uses FTA funding for many of those projects.

- **Pilot Program for Transit-Oriented Development Planning – Section 20005(b):** provides funding to local communities to integrate land use and transportation planning in new fixed guideway and core capacity transit project corridors.
  - Comprehensive planning projects covering an entire transit capital project corridor
  - *Eligible pedestrian project types:* studies on multimodal connectivity and accessibility, improvements to transit access for pedestrian and bicycle traffic.
- **Urbanized Area Formula Grants (5307):** provides funding for all preventative maintenance and some ADA capital costs.
  - *Eligible pedestrian project types:* bus stop improvements to increase mobility for transit users of all ages and abilities, pedestrian access to transit, and the number of ADA accessible bus stops
- **Enhanced Mobility of Seniors & Individuals with Disabilities (5310):** provides funding to transit-related projects that enhance mobility for seniors and individuals with disabilities.
  - *Eligible pedestrian project types:* travel training, accessible paths to bus stops including curb ramps, sidewalk enhancements, accessible pedestrian signals, improved signage, and mobility management program.
- **State of Good Repair Grants (5337):** provides capital project funding for maintenance of existing fixed guideway transit systems. These grants can also be used to develop and implement Transit Asset Management plans.
  - *Eligible pedestrian project types:* passenger stations and terminals to ensure an acceptable level of passenger comfort is maintained

- **Bus & Bus Facilities Infrastructure Investment Program (5339):** provides funding to replace, rehabilitate and purchase buses, related equipment, and to construct bus-related facilities. This includes technological or other innovations to modify low or no emission vehicles or facilities.
  - *Eligible pedestrian project types:* construction of enhanced bus-related facilities or fleet upgrades

### **National Park Service (NPS) Program**

- **Federal Land and Water Conservation Fund (LWCF):** provides funding for land purchase, development of recreation facilities, redevelopment of older recreation facilities, and planning studies on recreation potentials, needs, opportunities and policies.
  - Competitive grant program

Federal formula grants are allocated to HDOT and OahuMPO and distributed throughout the state and county. Projects for the Oahu TIP are selected by the MPO in consultation with the HDOT and CCH. Distribution is allocated either competitively or proportionally according to jurisdiction population. A State may transfer up to 50 percent of any apportionment to another formula program. However, no transfers are permitted of Metropolitan Planning funds, funds suballocated to areas based on population (under either STBG or Transportation Alternatives), or funds set aside for the Recreational Trails Program.

## **STATE PROGRAMS**

Several state-wide funding sources and regionally administered funding sources are available for pedestrian projects and efforts. CCH has recently used funds from the SRTS Special Fund.

### **State Highway Fund**

- Managed by HDOT, these funds provide the local match for STIP projects
- Funds are used for design, construction, repair, and maintenance of the State Highway System.
- Current taxes, charges, and fees that generate revenue for the fund include highway fuel taxes, vehicle registration and licensing fees, vehicle weight tax, and motor vehicle rental and tour vehicle surcharge tax.

### **State Transportation Alternative Program (TAP)**

- Competitive application process is managed by HDOT

- TAP provides federal funds for community-based projects that expand travel choices and enhance the transportation experience in Hawaii

#### **State Recreational Trails Program (Na Ala Hele Trail and Access Program)**

- Managed by the Division of Forestry and Wildlife within the Department of Land and Natural Resources

#### **Safe Routes to School Program**

- Managed by HDOT, provided by federal funds, specifically Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)
- Infrastructure and Non-Infrastructure projects are eligible
- \$500,000 awarded to City and County of Honolulu in 2016 for Kailua Bicycle Boulevard project

#### **Safe Routes to School Special Fund**

- State Funds collected as traffic violation surcharges
- Managed by HDOT
- Approximately \$150,000 awarded to City and County of Honolulu annually
- \$291,318 distributed to City and County of Honolulu in 2018

### **REGIONAL AND LOCAL PROGRAMS**

#### **City and County of Honolulu Funds**

Funding sources include property tax, fees and charges for public services, and general obligation bonds.

### **METROPOLITAN PLANNING PROGRAMS**

#### **OahuMPO Transportation Alternative Program (TAP)**

- Competitive application process is managed by OahuMPO
- TAP provides federal funds for community-based projects that expand travel choices and enhance the transportation experience in Hawaii



## PROGRAMMED FUNDING

Funding is committed to certain projects through the local budget process and regional and state transportation planning processes. Local funds are committed through the Capital Improvement Program and State and Federal funds are committed through inclusion in the OahuMPO Transportation Improvement Program and Statewide Transportation Improvement Program.

### CCH CAPITAL IMPROVEMENT PROGRAM (CIP)

Sidewalk projects in the City and County of Honolulu (the City) can be funded through the Capital Improvement Program although they currently account for a very small portion of CIP funds. Funding sidewalks has traditionally been a barrier for the City, but the recent passage of Ordinance 16-33 now allows for City funds to cover up to 100 percent of the cost of pedestrian infrastructure projects (sidewalks in particular) if deemed appropriate. Although City funds can pay for pedestrian projects, there is no dedicated funding source for sidewalk project. To date, there have been no local grant matches for pedestrian infrastructure.

### TRANSPORTATION IMPROVEMENT PROGRAM (TIP)

- Developed by OahuMPO
- Short-term, four-year implementation program for all federally-funded and/or regionally significant transportation projects within the MPO's planning area
- CCH total: \$97,451,000 approved for FY 2018 (combination of federal and local funds, excluding Honolulu Rail Transit Project)
- \$96,394,000 identified for FY 2019 (excluding the Honolulu Rail Transit Project)
- \$125,706,000 identified for FY 2020 (excluding the Honolulu Rail Transit Project)
- Projects are eligible for federal funds

### OAHU REGIONAL TRANSPORTATION PLAN (ORTP)

- Developed by OahuMPO
- Long-term vision document (25-year horizon)
- Projects are eligible for federal funds

CITY COUNCIL  
CITY AND COUNTY OF HONOLULU  
HONOLULU, HAWAII  
CERTIFICATE

**RESOLUTION 22-227**

Introduced: 09/20/22 By: TOMMY WATERS - BY REQUEST Committee: TRANSPORTATION,  
SUSTAINABILITY AND HEALTH  
(TSH)

Title: ADOPTING THE FINAL OAHU PEDESTRIAN PLAN DATED JULY 2022.

Voting Legend: \* = Aye w/Reservations

09/20/22	INTRO	Introduced.
11/08/22		Councilmember Carol Fukunaga, representing Council District VI, resigned from office. [Refer to Communication CC-339(22)]
		Councilmember Brandon J.C. Elefante, representing Council District VIII, resigned from office. [Refer to Communication CC-338(22)]
11/15/22	TSH	Reported out for adoption.
		CR-297
		3 AYES: CORDERO, KIA'ĀINA, TULBA
11/29/22	CCL	Tyler Dos Santos-Tam was appointed to fill a vacancy in the Office of Councilmember for Council District VI. (Refer to RES22-272)
		Val A. Okimoto was appointed to fill a vacancy in the Office of Councilmember for Council District VIII. (Refer to RES22-273)
12/07/22	CCL	Committee report and Resolution were adopted.
		9 AYES: CORDERO, DOS SANTOS-TAM, KIA'ĀINA, OKIMOTO, SAY, TSUNEYOSHI, TULBA, TUPOLA, WATERS

I hereby certify that the above is a true record of action by the Council of the City and County of Honolulu on this RESOLUTION.

  
\_\_\_\_\_  
GLEN I. TAKAHASHI, CITY CLERK

  
\_\_\_\_\_  
TOMMY WATERS, CHAIR AND PRESIDING OFFICER