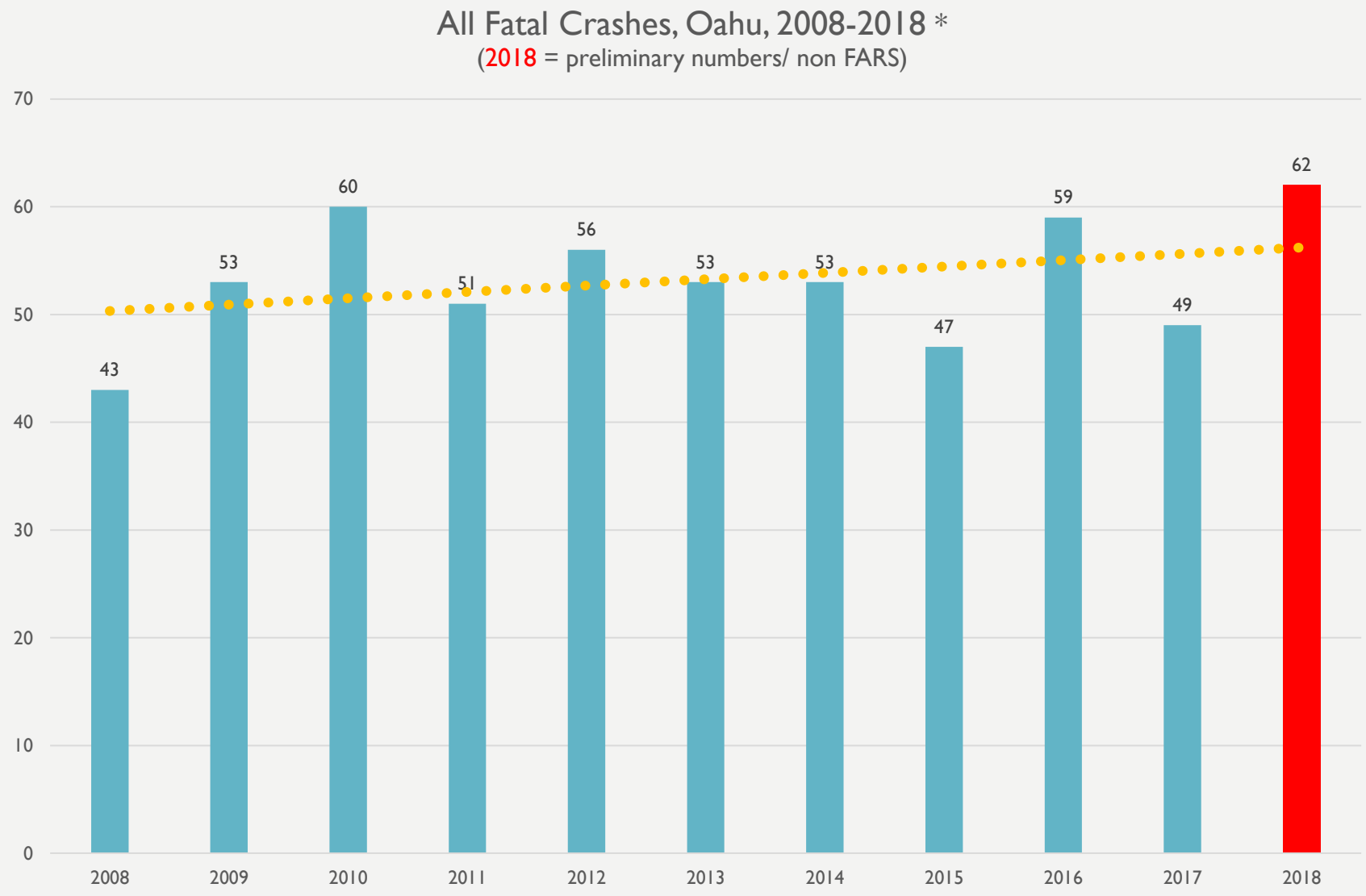
# VISION ZERO

## SAFE STREETS FOR EVERYONE

# DATA

On average, 53 people die every year in traffic crashes on O‘ahu.

# FATAL CRASHES TRENDING UP



# 586

people died in traffic crashes on O‘ahu

(2008-2018)*

*2018 data is preliminary

# 211

## (36% of the total)

were people walking/biking

(2008-2018)*

*2018 data is preliminary

# 19,775

people were treated at the hospital
for traffic crash injuries on O‘ahu

Hospital-treated injuries, Hawaii Department of Health, 2013-2017*
(*2017 data is based on a 9-month projection)

estimated **$63 million** O‘ahu

**($105 million statewide)**

## Emergency Room + Hospital-Admitted Costs

*[does not include any other costs such as property damage, legal fees, etc.]*

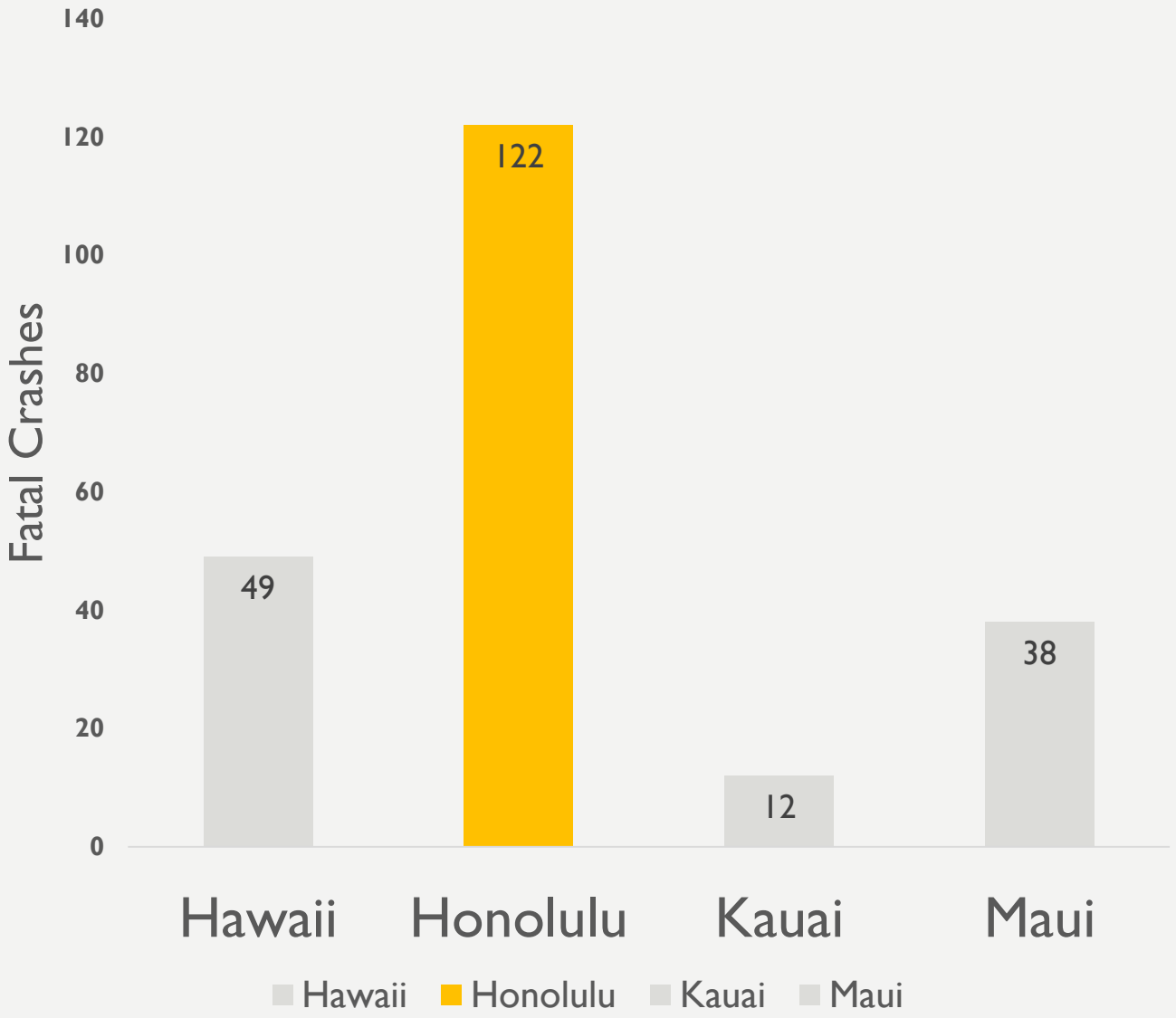
Hospital-treated injuries, Hawaii Department of Health, 2016

# DATA

## PEOPLE SPEEDING

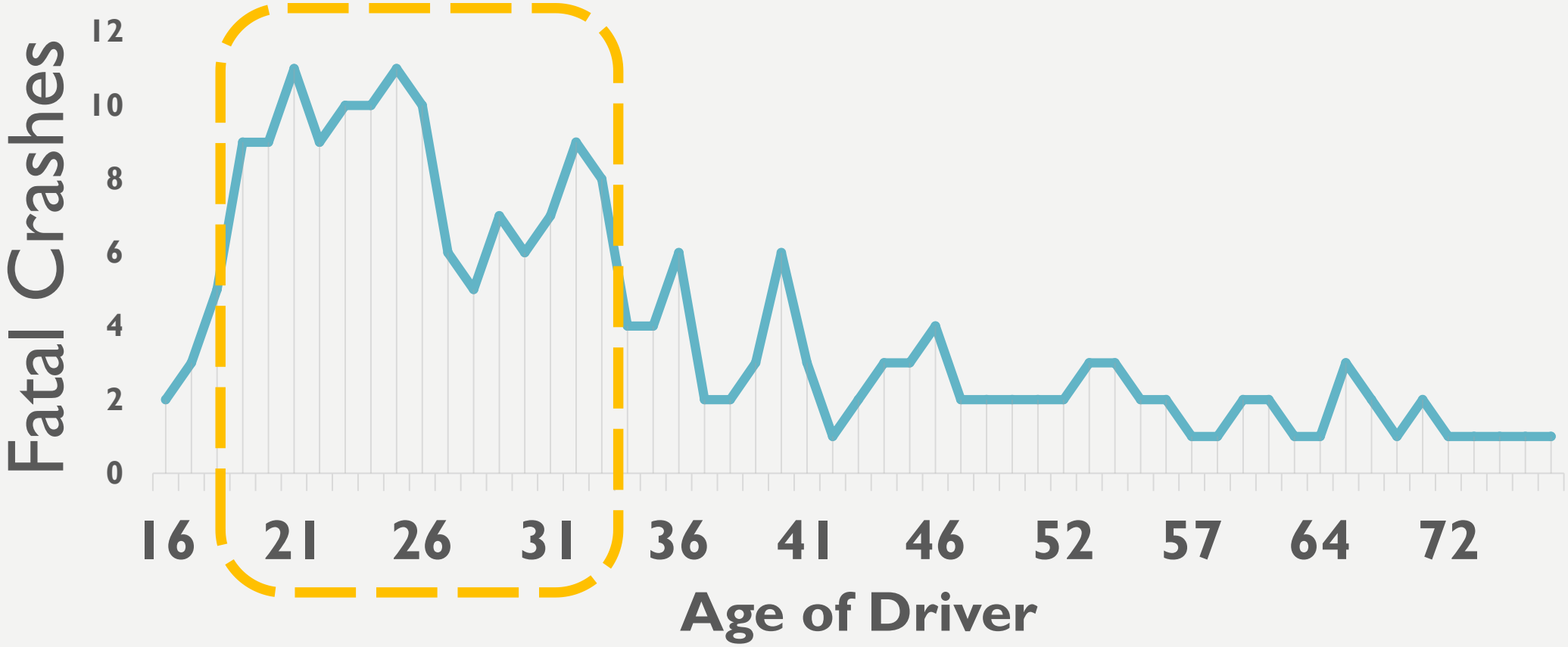
# SPEED-RELATED CRASHES, BY COUNTY

**SOURCE: FARS 2012-2016. TOTAL N=221**



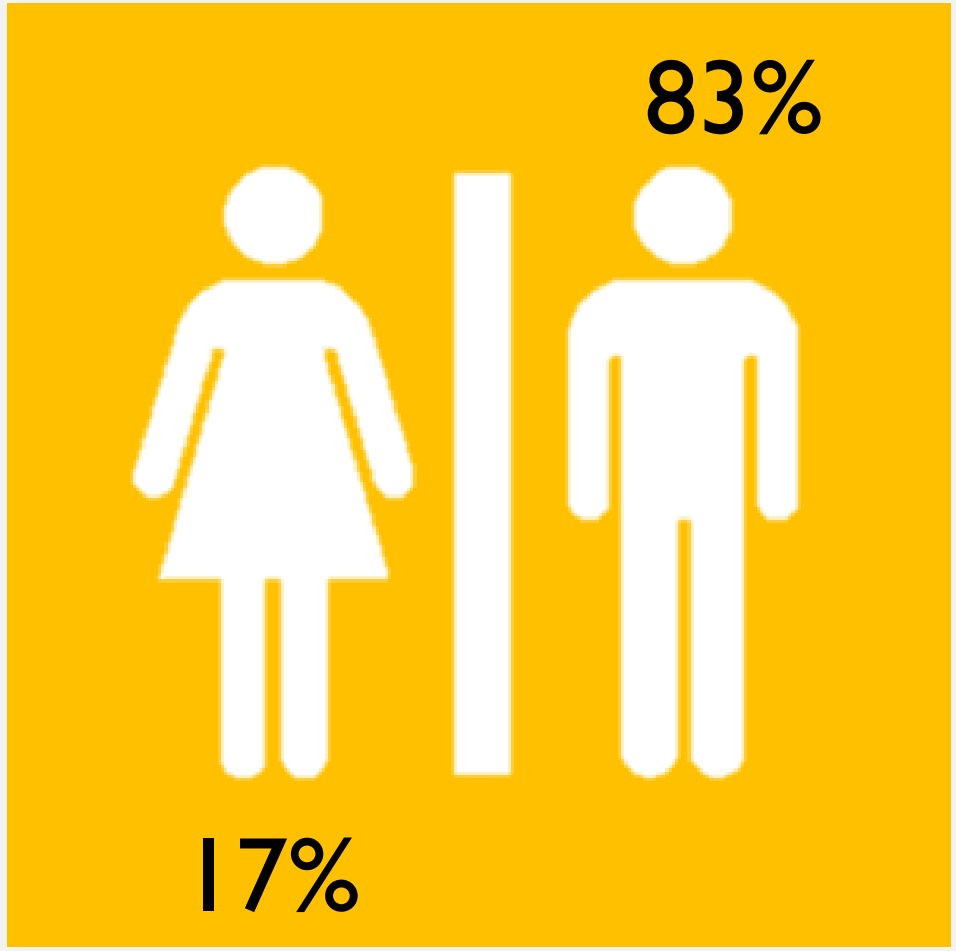
# DRIVERS INVOLVED IN SPEED-RELATED CRASHES, BY AGE

**SOURCE: FARS 2012-2016. TOTAL N=221**



# DRIVERS INVOLVED IN SPEED-RELATED CRASHES, BY GENDER

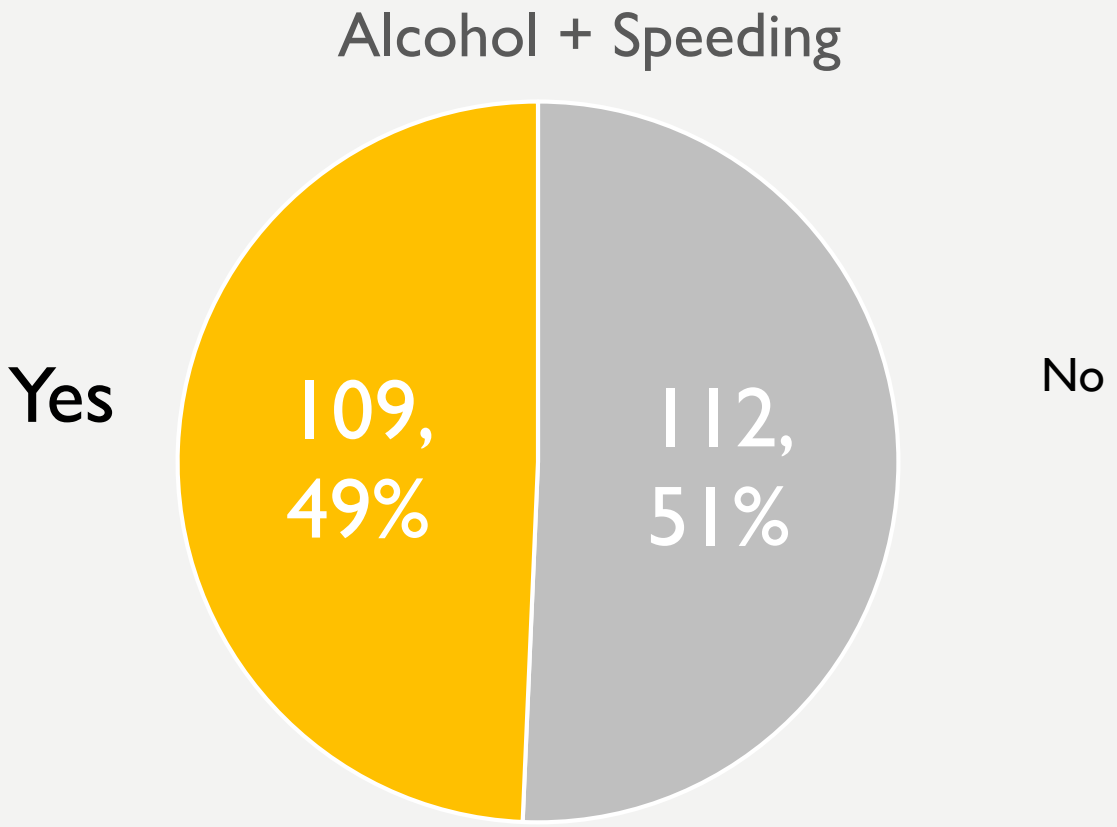
**SOURCE: FARS 2012-2016. TOTAL N=221**




This Photo by Unknown Author is licensed under CC BY-SA

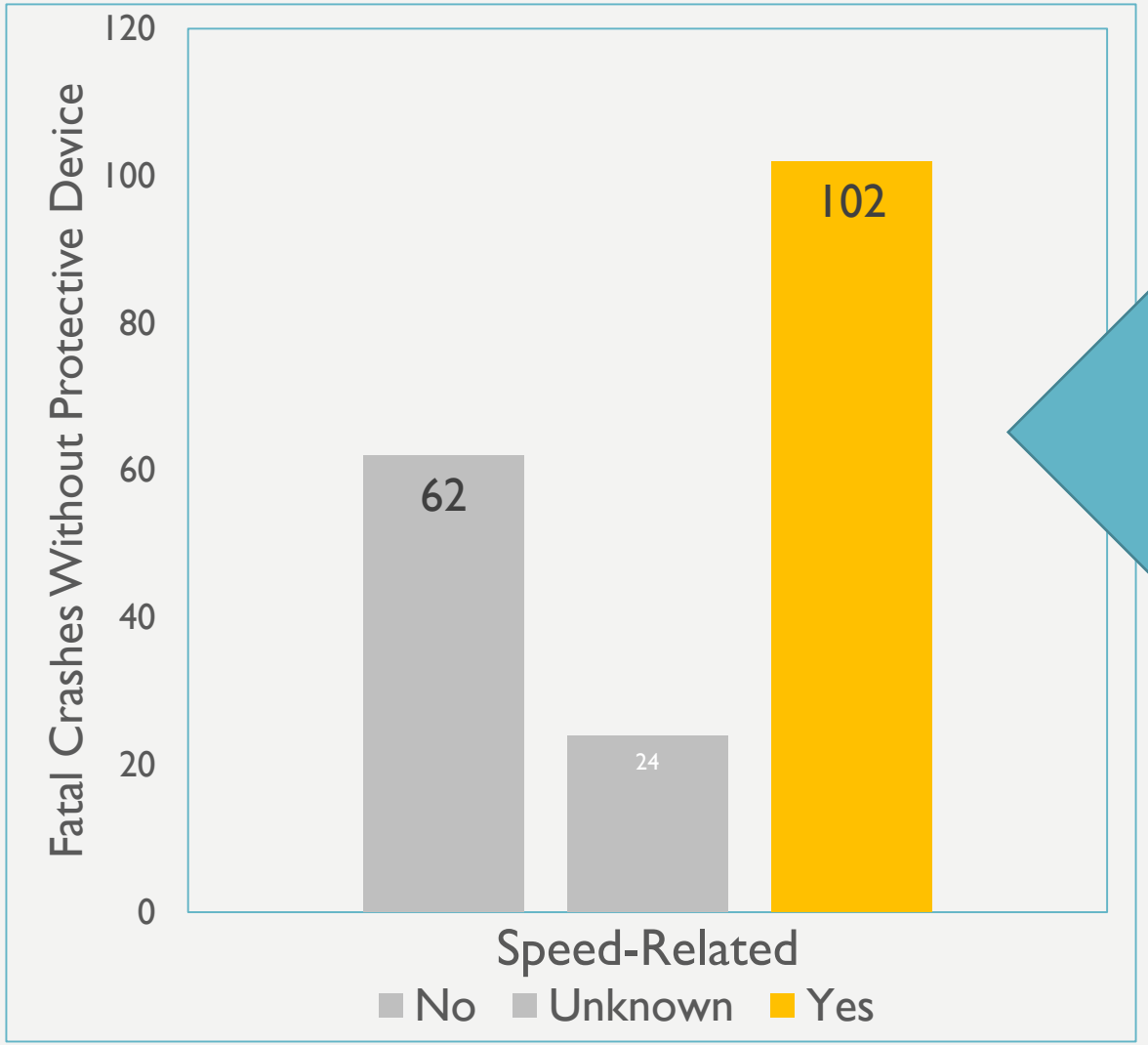
# DRIVERS INVOLVED IN SPEED-RELATED CRASHES, POLICE INDICATED ALCOHOL INVOLVEMENT WITH DRIVER

**SOURCE: FARS 2012-2016. TOTAL N=221**



# DRIVERS INVOLVED IN SPEED-RELATED CRASHES, WITHOUT PROTECTIVE DEVICE (HELMET OR SEAT BELT)

SOURCE: FARS 2012-2016. TOTAL N=221




46%
not wearing seat belts

# DRIVERS INVOLVED IN SPEED-RELATED CRASHES

## SOURCE: FARS 2012-2016. TOTAL N=221

Drivers tend to be

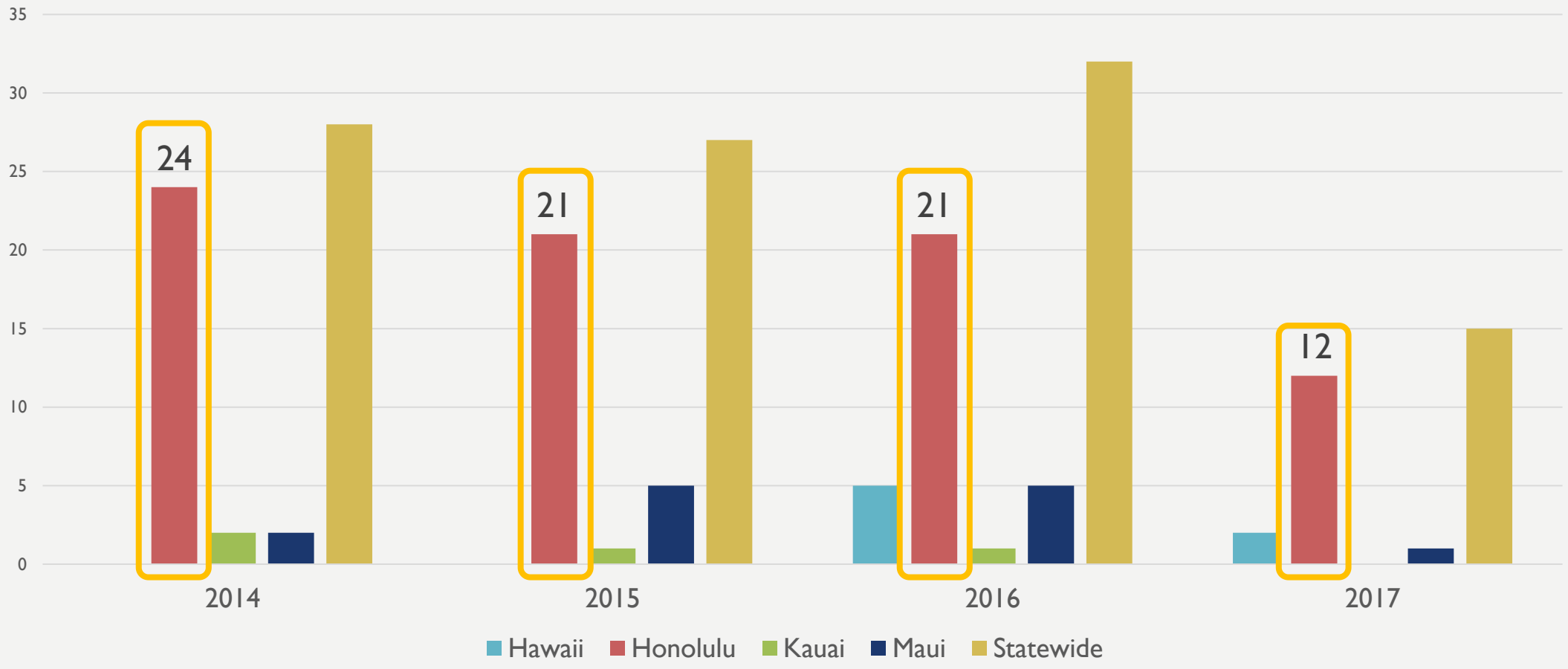
- Male
- Under 32 years old
- Not wearing a seatbelt
- Likely to be DUI

# DATA

## PEOPLE WALKING

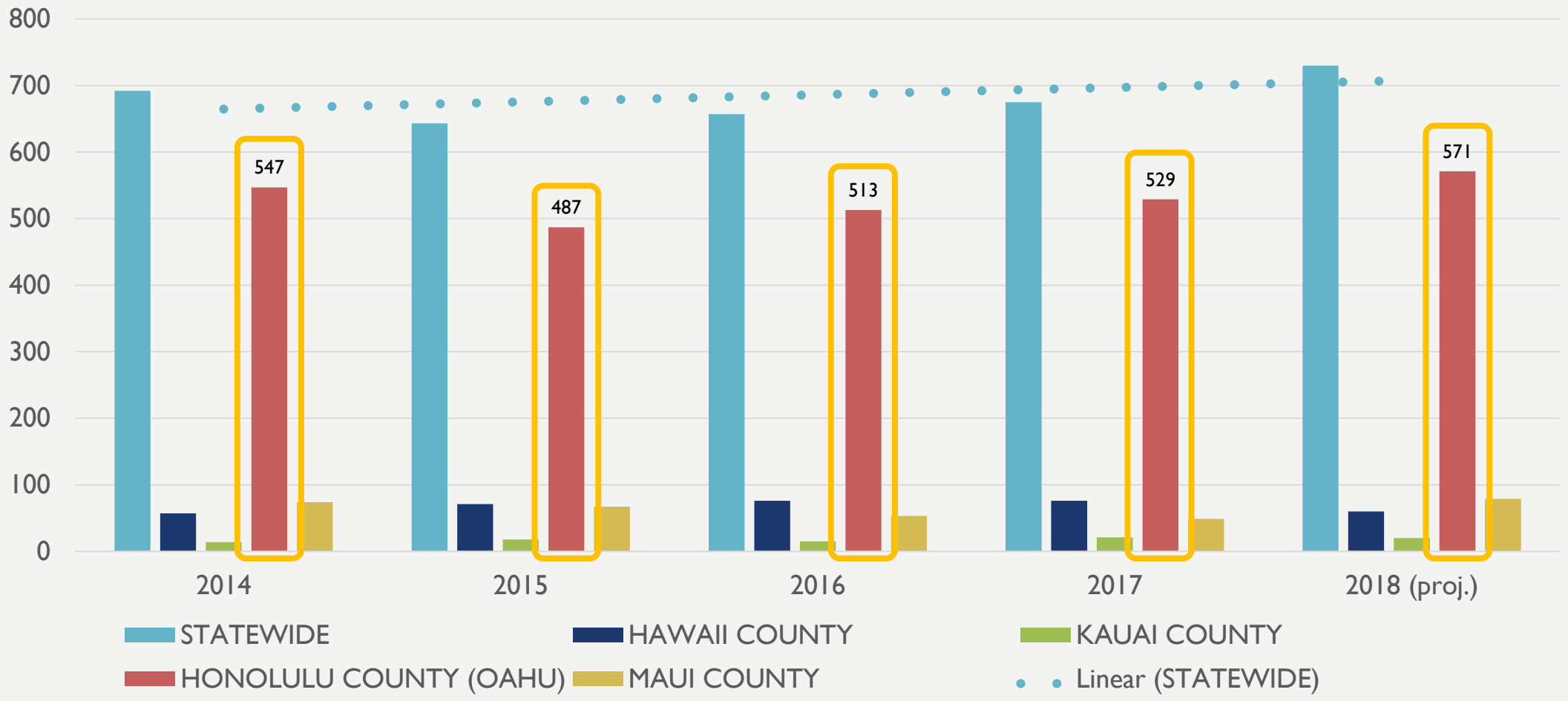
# PEDESTRIAN FATALITIES BY COUNTY

## SOURCE: FARS 2014-2017



# PEDESTRIAN EMS-ATTENDED CRASHES

**SOURCE: DOH, 2014-2018**

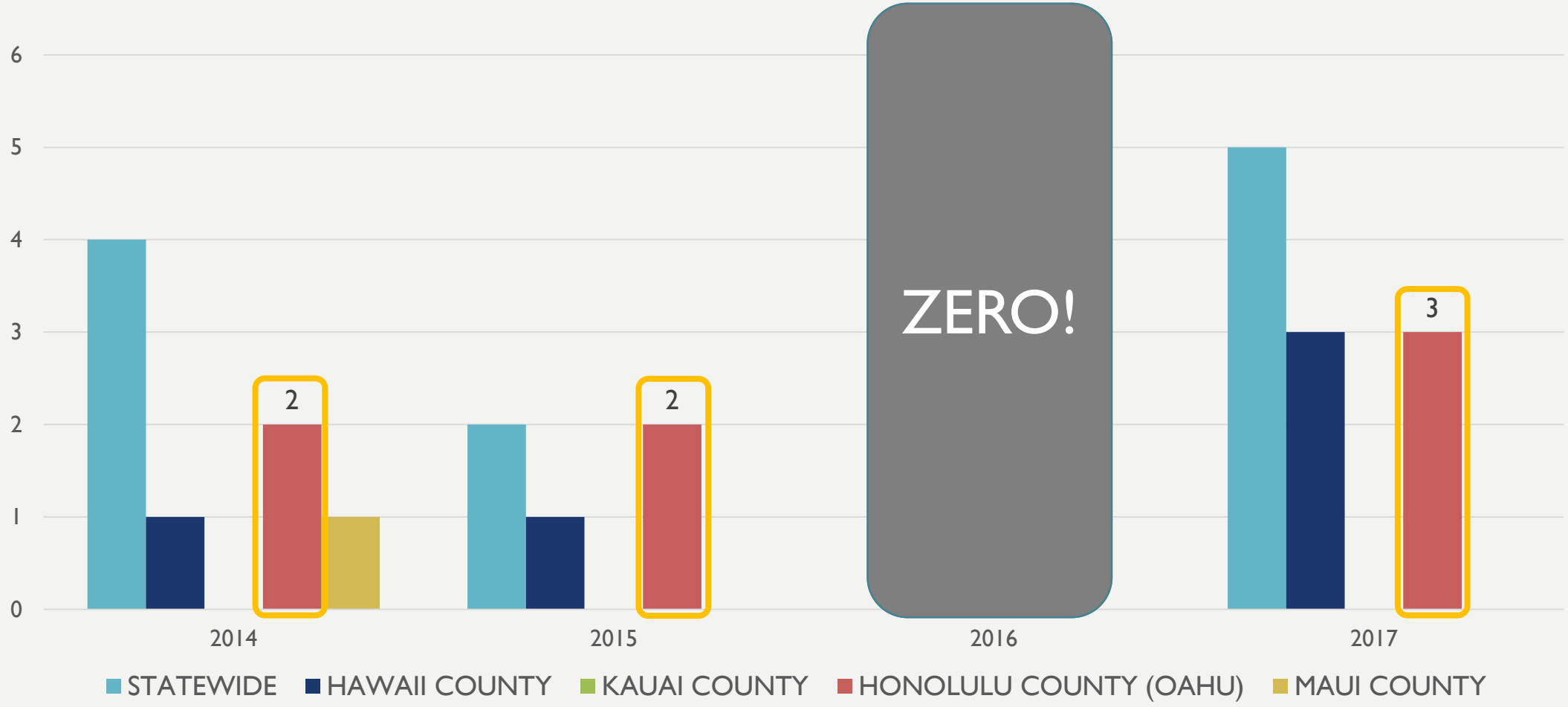


# DATA

## PEOPLE BICYCLING

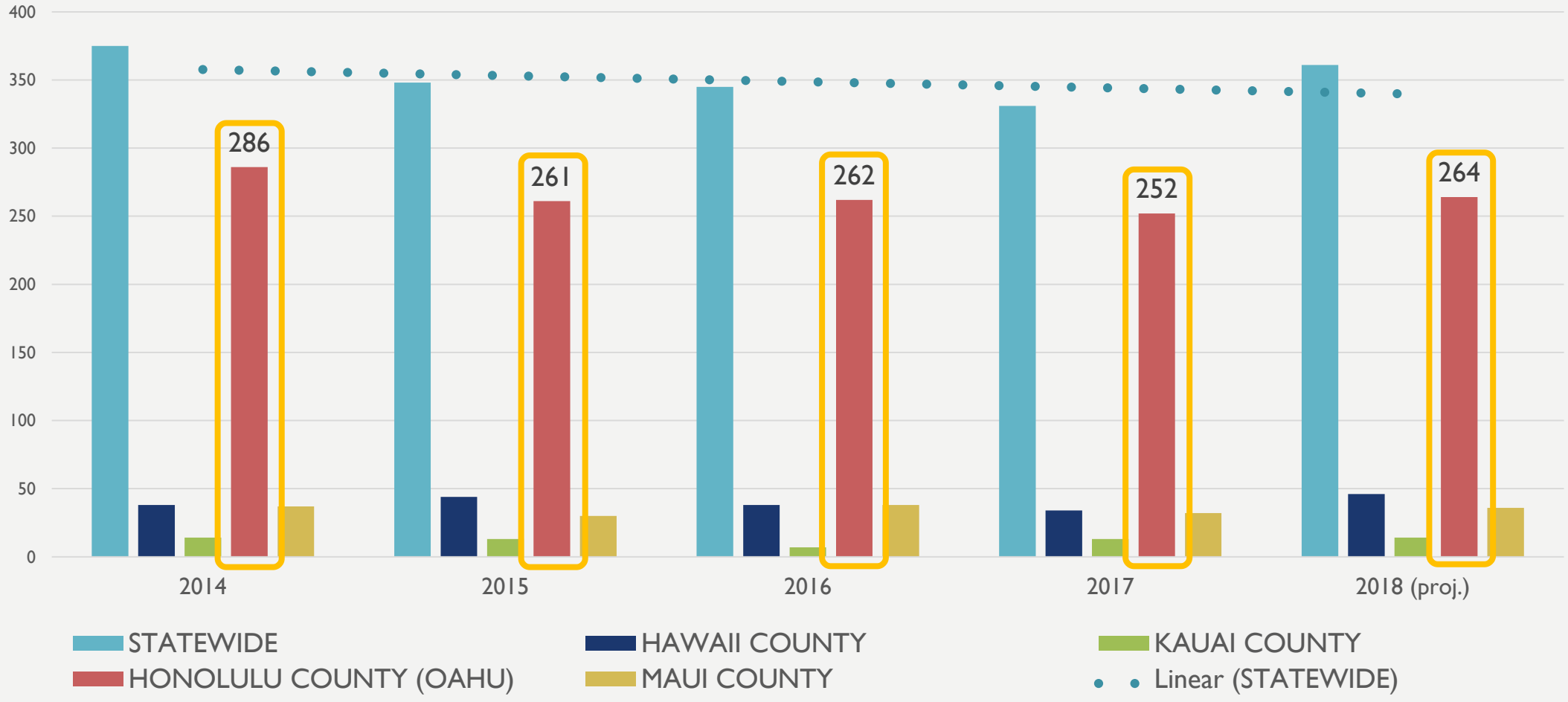
# BICYCLIST FATALITIES BY COUNTY

## SOURCE: FARS 2014-2017



# BICYCLIST EMS-ATTENDED CRASHES

## SOURCE: DOH, 2014-2018



# SAFE STREETS:
# BASIC CONCEPTS

# SLOW SPEEDS = SAVE LIVES

*Source: Vision Zero Network*

# HIGHER SPEEDS = LESS ABILITY TO SEE

A driver's visual focus diminishes as speed increases.

15 mph

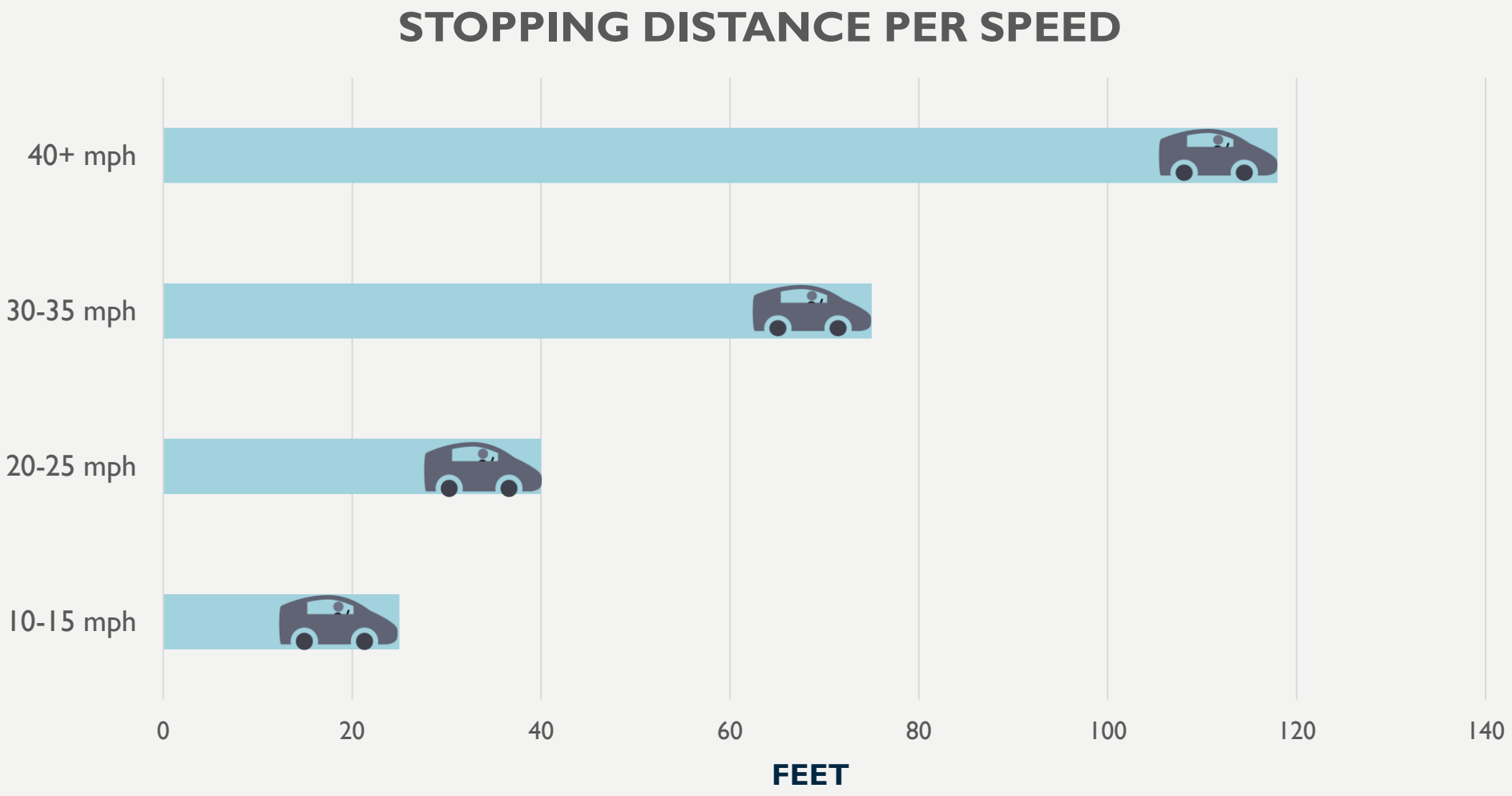
20 mph

25 mph

30 mph

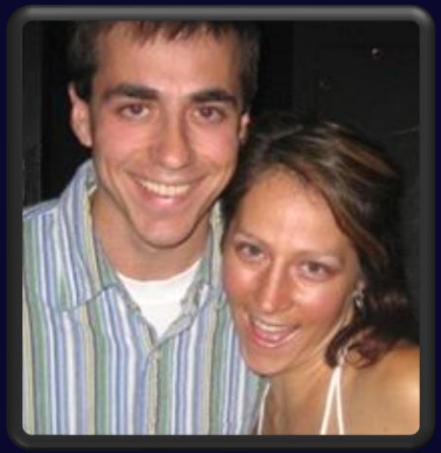
*Source: National Association of City Transportation Officials (NACTO)*

# TIME IT TAKES TO STOP A CAR




*Source: Traditional Neighborhood Development: Street Design Guidelines (1999), ITE Transportation Planning Council Committee (via NACTO)*

# WHY ZERO?



# WHY ZERO?

# WHY ZERO?

Because **NOBODY** wants to lose a loved one to a traffic crash

# POLICY

# OAHUMPO POLICY

Purpose:

Align OahuMPO with local and state policy

| | |
|---|---|
| City and County of Honolulu | December 2018 |
| State of Hawaii | June 2019 |

# OAHUMPO POLICY

City and County of Honolulu Department of Transportation Services sent a letter to the OahuMPO in August 2018, requesting that the MPO adopt a Vision Zero policy.

# CITY & COUNTY OF HONOLULU POLICY

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

No. 18-219

## RESOLUTION

URGING THE CITY ADMINISTRATION TO ADOPT THE GOALS, STRATEGIES, AND POLICIES OF VISION ZERO.

WHEREAS, traffic crashes are among the leading causes of death and injury in the United States; and

WHEREAS, traffic related deaths and serious injuries disproportionately impact pedestrians, minorities, older adults, the disabled, and the poor, according to the 2016 *Dangerous by Design* report, published by Smart Growth America and the National Complete Streets Coalition; and

WHEREAS, according to the State of Hawaii Department of Transportation, as of September 13, 2018, 79 people have been killed in traffic-related incidents in Hawaii this year, compared to 72 deaths at the same time last year; however, 25 of this year's deaths have been of pedestrians, compared to four pedestrian deaths at the same time last year, for an increase in pedestrian deaths of 525 percent; and

WHEREAS, Vision Zero is a comprehensive strategy to eliminate all traffic deaths and severe injuries while promoting safe, healthy, and equitable mobility for all; and

WHEREAS, the fundamental message of Vision Zero is that all traffic deaths are preventable and unacceptable; and

WHEREAS, Vision Zero was initially implemented in Sweden in the 1990s and subsequently the death rate for motorists in Sweden has been cut in half since 2000 and pedestrian fatalities have declined 50 percent since 2009; and

WHEREAS, numerous U.S. cities, including Los Angeles, California; New York City, New York; Seattle, Washington; San Francisco, California; Portland, Oregon; Philadelphia, Pennsylvania; Boston, Massachusetts; Chicago, Illinois; Denver, Colorado; Fort Lauderdale, Florida; and Washington, D.C., have adopted Vision Zero policies that focus on safety as a primary objective in designing transportation projects; and

WHEREAS, by the enactment of Ordinance 12-15, which established the City and County of Honolulu's ("City") Complete Streets policy, the Council expressed its commitment to safe mobility for all roadway users; and

# STATE OF HAWAII POLICY



HOUSE OF REPRESENTATIVES
THIRTIETH LEGISLATURE, 2019
STATE OF HAWAII

H.B. NO. 757 H.D. 1 S.D. 1 C.D. 1

## A BILL FOR AN ACT

RELATING TO TRANSPORTATION.

**BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:**

SECTION 1. The legislature finds that traffic-related fatalities are on the rise nationwide. Each year, an average of more than forty thousand people are killed in the United States in vehicle crashes. In Hawaii, forty-five per cent of the fatal crashes in the State were speed-related in 2016, ranking the State as the fifth highest in the nation for proportion of speed-related fatal crashes. A majority of the speed-related fatalities occur on state roadways. Additionally, nearly forty per cent of driving fatalities in Hawaii are alcohol-related, which is above the national average. In 2018, a record number of forty-three pedestrian fatalities were documented in Hawaii, reflecting a dramatic increase from fifteen in 2017.

The legislature finds that many tragedies can be prevented by taking a proactive, preventive approach that prioritizes traffic safety. Vision Zero, also known as target zero in some states, is a movement that seeks to prevent and ultimately eliminate all traffic-related fatalities. The Vision Zero approach recognizes that individuals will sometimes make mistakes, so communities should implement policies and design roads that slow down vehicles in order to give pedestrians and bicyclists safe alternatives and to reduce the chance that a human mistake will lead to a fatality.

The National Complete Streets Coalition endorses a Vision Zero approach in pursuit of the objective to design streets that prevent traffic injuries and fatalities, particularly for the most vulnerable road users. Over one thousand two hundred jurisdictions in the United States have, through an adoption of Complete Streets policies, committed to design and operate their

# OAHUMPO POLICY, PAGE 1

Most of the “Whereas” statements are directly from the City and County of Honolulu resolution.

# OAHUMPO POLICY, PAGE 2

OahuMPO will participate in any City & County of Honolulu or State of Hawaii forums that discuss Vision Zero.

# OAHUMPO POLICY, PAGE 2

OahuMPO will support the State of Hawaii Act 134 (Vision Zero).

# OAHUMPO POLICY, PAGE 2

OahuMPO supports the City & County of Honolulu's *Vision Zero Action Plan*.

# OAHUMPO POLICY, PAGE 2

OahuMPO shall incorporate Vision Zero principles into its long-range plan.

# OAHUMPO POLICY

Draft Policy:

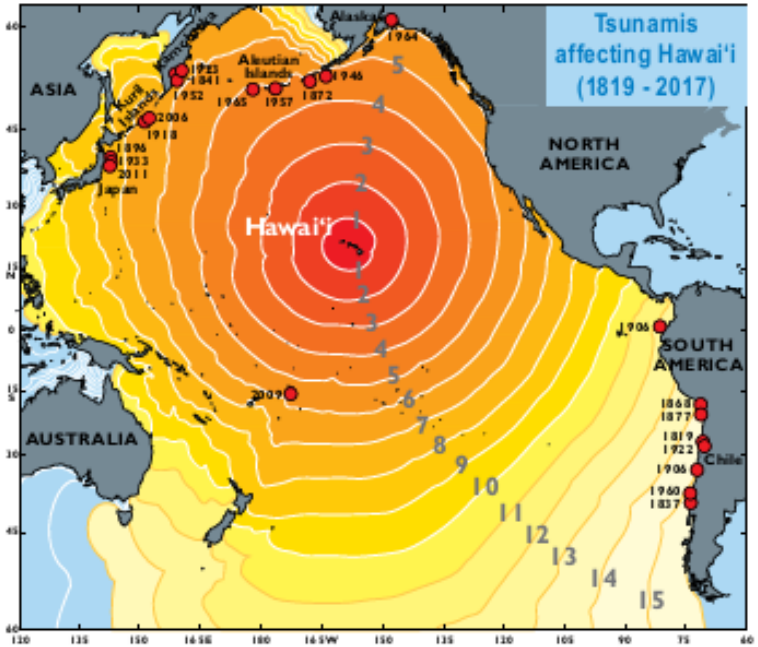
*Please send edits and comments to Kiana Otsuka*

# VISION ZERO

## SAFE STREETS FOR EVERYONE

TETRA TECH

# Evacuation Planning for the City and County of Honolulu Department of Emergency Management

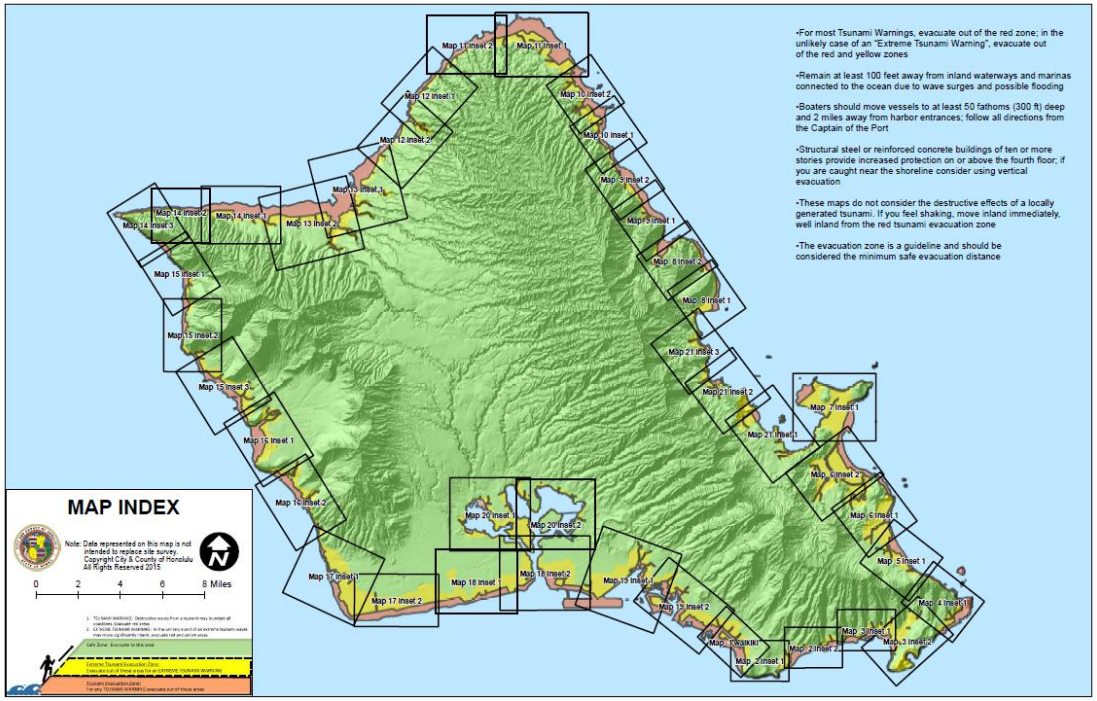


September 12, 2019

complex world | CLEAR SOLUTIONS™

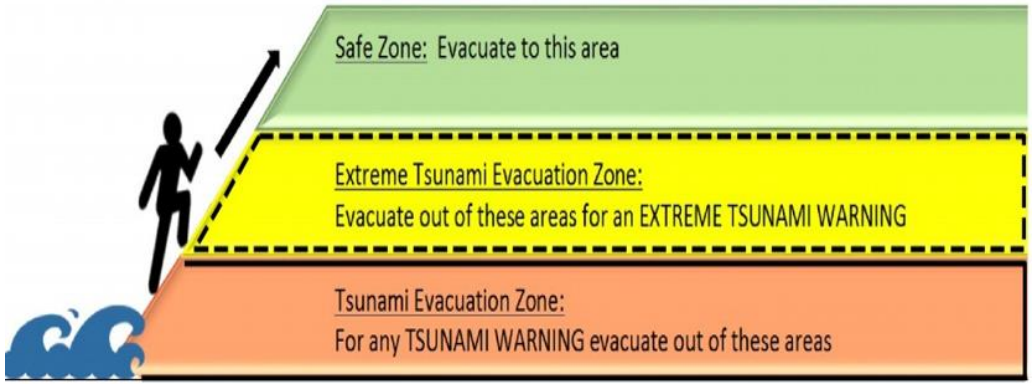
# Introductions & Objectives

- Welcome & Introductions
- Objectives
  - Project Overview
  - Public Input on Safe Sites
  - Next Steps



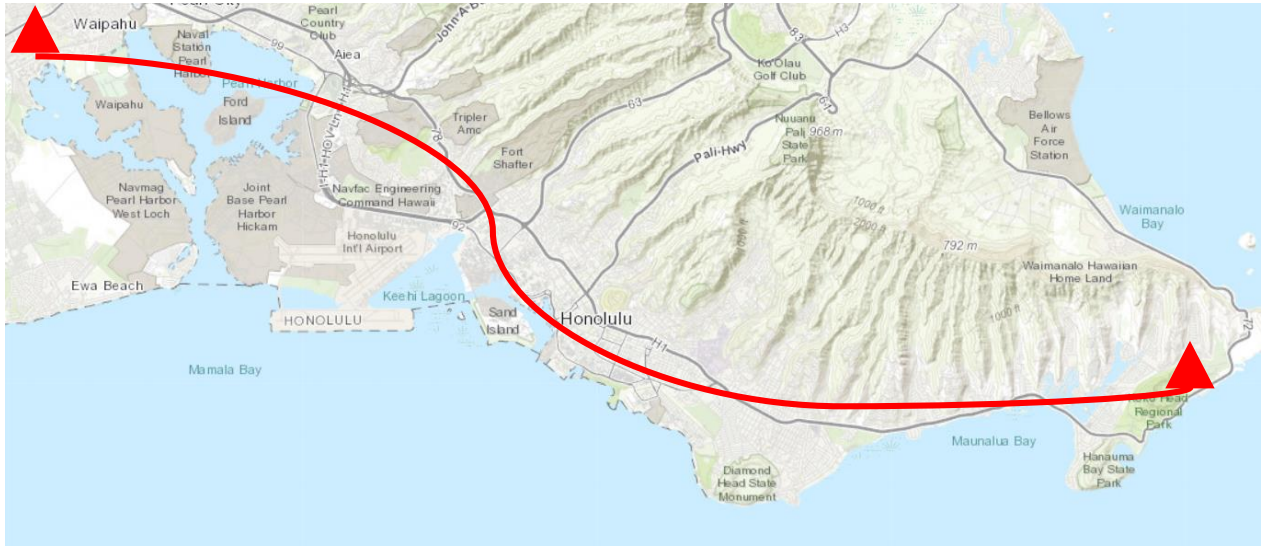
# Key Terms

- Tsunami Evacuation Zone (TEZ)
- Extreme Tsunami Evacuation Zone (XTEZ)
- Horizontal Evacuation
- Vertical Evacuation
- Evacuation Route
- Safe Site (aka Refuge Area – Phase I)



# Project Locations

- Hanauma Bay
- Hawaii Kai
- Wailupe
- Kahala
- Diamond Head
- Waikiki
- Downtown
- Ke'ehi Lagoon
- Pearl Harbor East/West (includes Waipahu, Pearl City, Aiea)
- Pearl Harbor Mouth (includes Honolulu Airport, Hickam)
- Waipahu

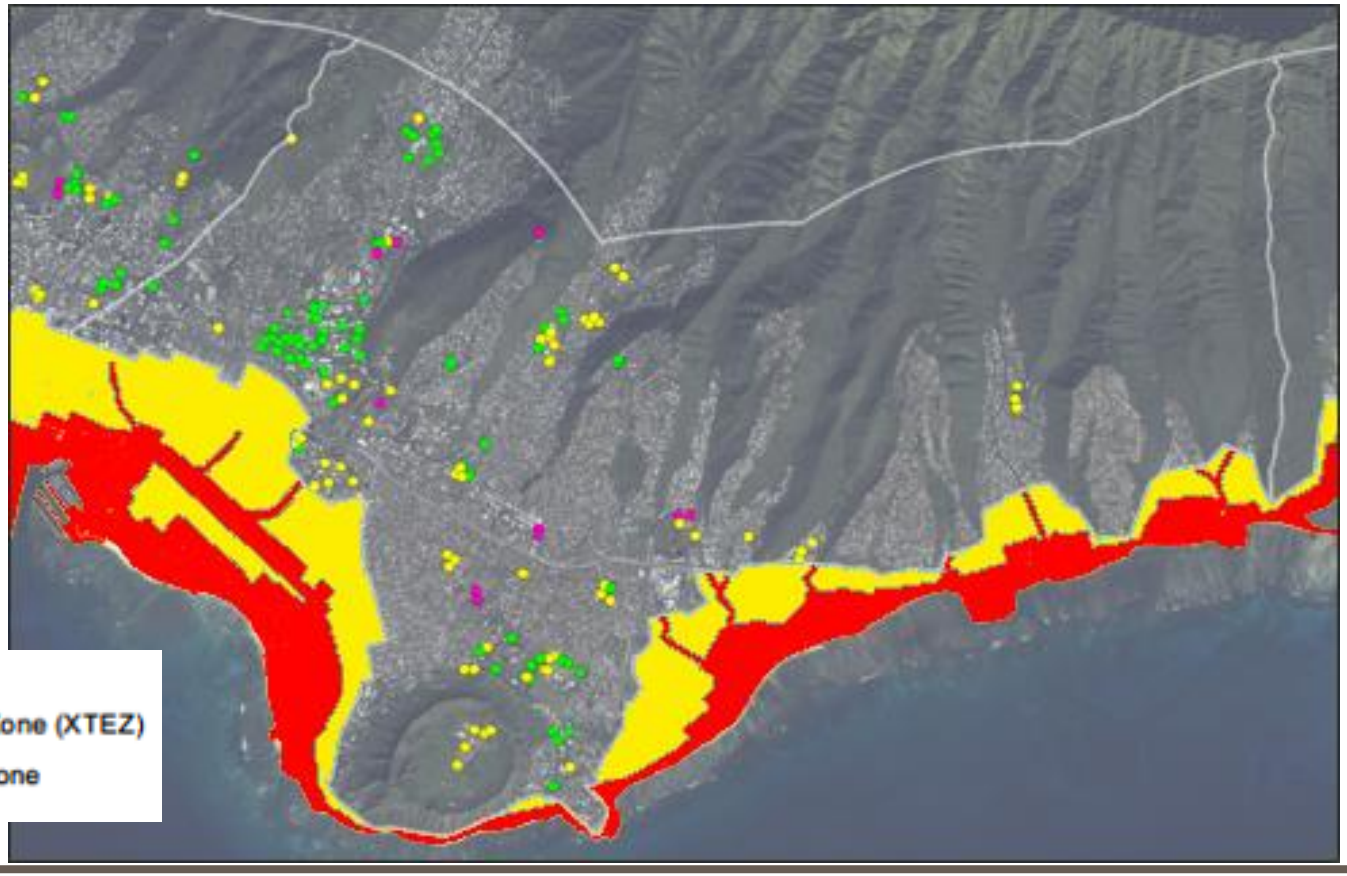


# Project Overview

- Task 1. Gap Analysis
- Task 2. Field Work for Geographic Area Evacuation Route Plan
- Task 3. Plan Development for Geographic Area Evacuation Route Plan
- Task 4. GIS Mapping
- Task 5. Tsunami-Safe Vertical Evacuation Engineering Tool e.g. Tsunami–Ready Program
- Task 6. Public Outreach

# Task 1
# Gap Analysis and Preliminary Work

- Reviewed Inundation Zones and Developed Needs Assessment
- Identified Potential Safe Sites



**Access Type**

- Open
- Observed Restricted
- Unknown

**Tsunami Zone Description**

- Extreme Tsunami Evacuation Zone (XTEZ)
- Regular Tsunami Evacuation Zone

# Needs Assessment Assumptions

- Assumed 100% Evacuation Rate
- Used 2016 Hawaii Data Book for Population and Transportation Assumptions
  - Added Tourist Populations
  - Distributed Over Hotel Data Layer
- Percentages of People Who Primarily Use Vehicles 70%
  - Assumed 80% Would Use Vehicles (10% buffer)
- Analyzed Combinations of Day/Night & Weekday/Weekend Scenarios
  - Night Scenario 3am When People Are Usually Home
  - Day Scenario around 3pm When People At School and Work
- Assumed Walking Speed of <2 mph
  - Clearance times no longer than 30-45 minutes for all Evac Areas

# Task 2
# Preliminary Safe Site Assumptions

- Government Locations
  - Parks – Community Parks, Beach Parks, District Parks, Neighborhood Parks and Regional Parks
  - Public Schools
  - Government Land Ownership
- Addresses were Attached/Associated to each location

# Community Input

- Alternate Site Options
- Incorporation of other locations
  - Businesses/Private Sector
- Vertical Evacuation Options
- Tsunami Ready Adoption and Integration Strategies
- Public Awareness Suggestions
  - Employee Awareness
  - Tourist/Visitor Awareness

# Ideal Safe Site Criteria

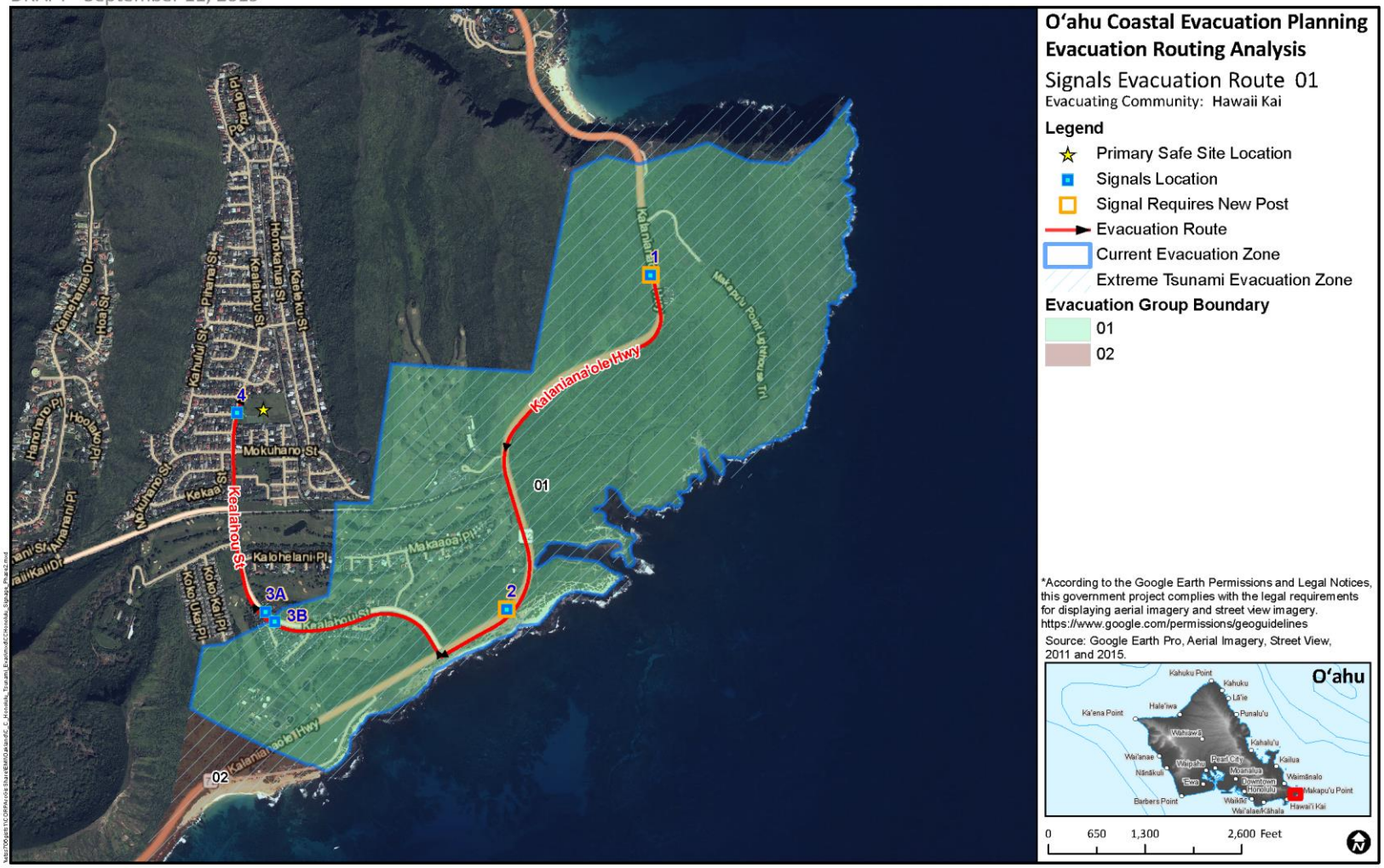
- Large Capacity
  - Space to Park More Than 100 Vehicles on Grass or Pavement
  - Paved Space – 350 sf / Field Space – 1,000 sf
- Easy Ingress and Egress
  - No Barriers to Entry
  - No Complicated Security Measures
  - ADA Compatible
- Close to Evacuation Zones
  - Easily Walkable
- Willingness to be Identified and Marked as a Tsunami Safe Site
  - Publicly-owned Areas
  - Private and Non-governmental

# Task 3
# Evacuation Routing

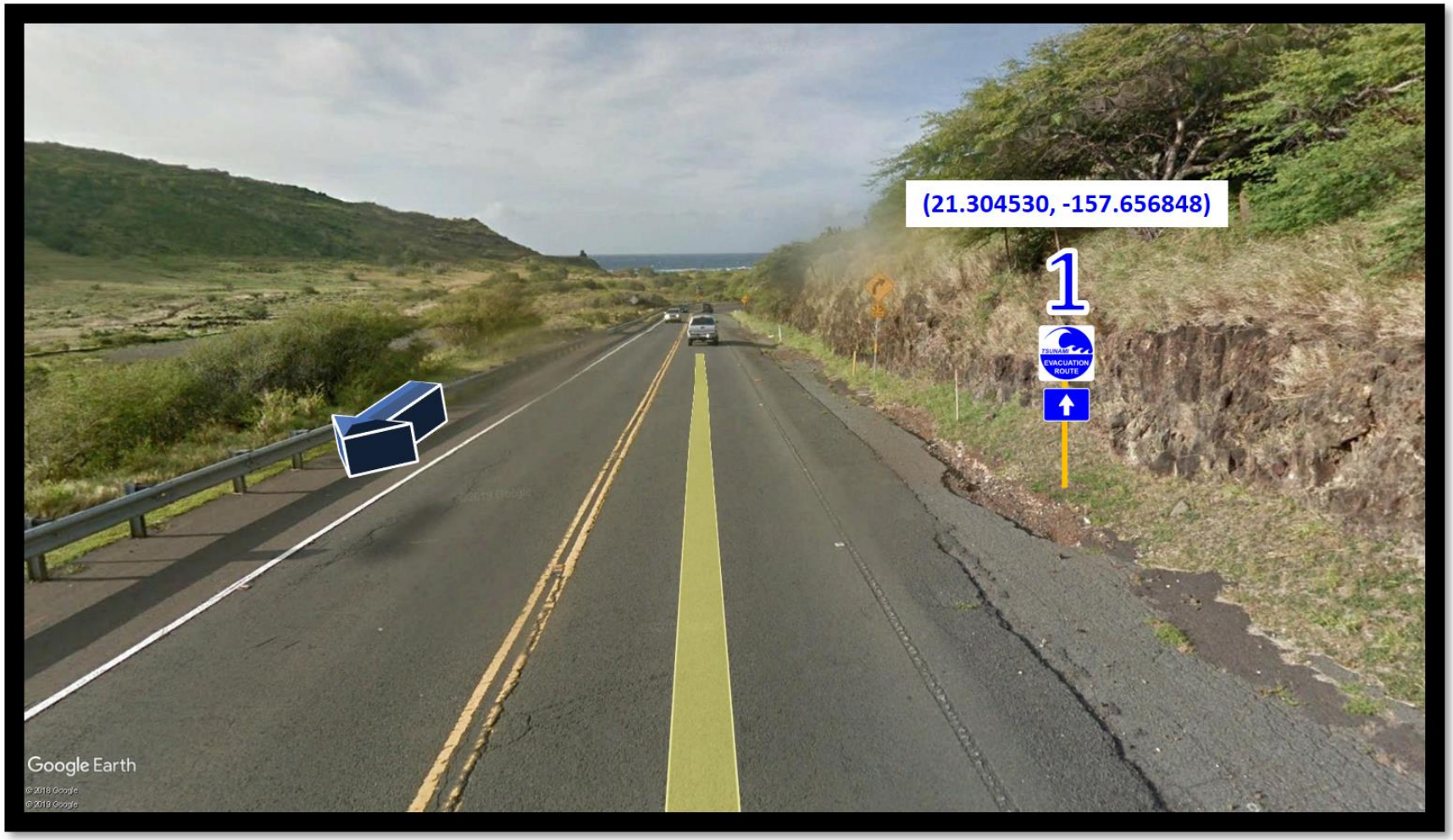
- Collected Community Input Through Public Outreach and Meetings
- Identified Preferred Safe Site Locations
- Determined Best Available Evacuation Routes
- Confirmed and Finalized Safe Sites and Evacuation Routing
- Identified Signage Placement
- Developed Installation Guide

# Task 4
# GIS Mapping and Signage Placement

DRAFT - September 11, 2019



# Sign Installation Guide

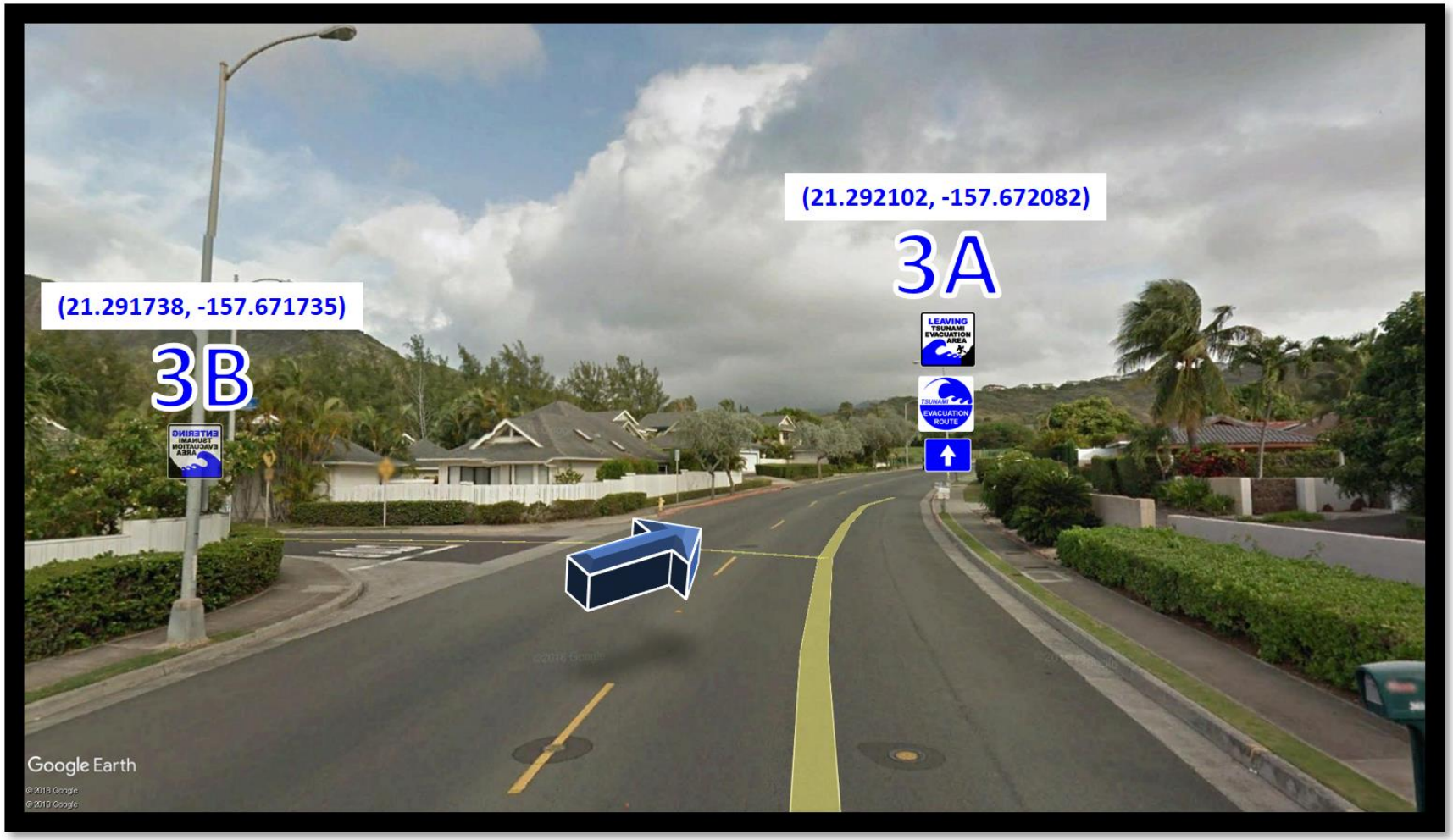



Kalanianaole Hwy

# Sign Installation Guide

Intersection of Kalanianaole Hwy and Kealahou St

# Sign Installation Guide




Intersection of Kealahou St. and Holokai Pl.

# Sign Installation Guide

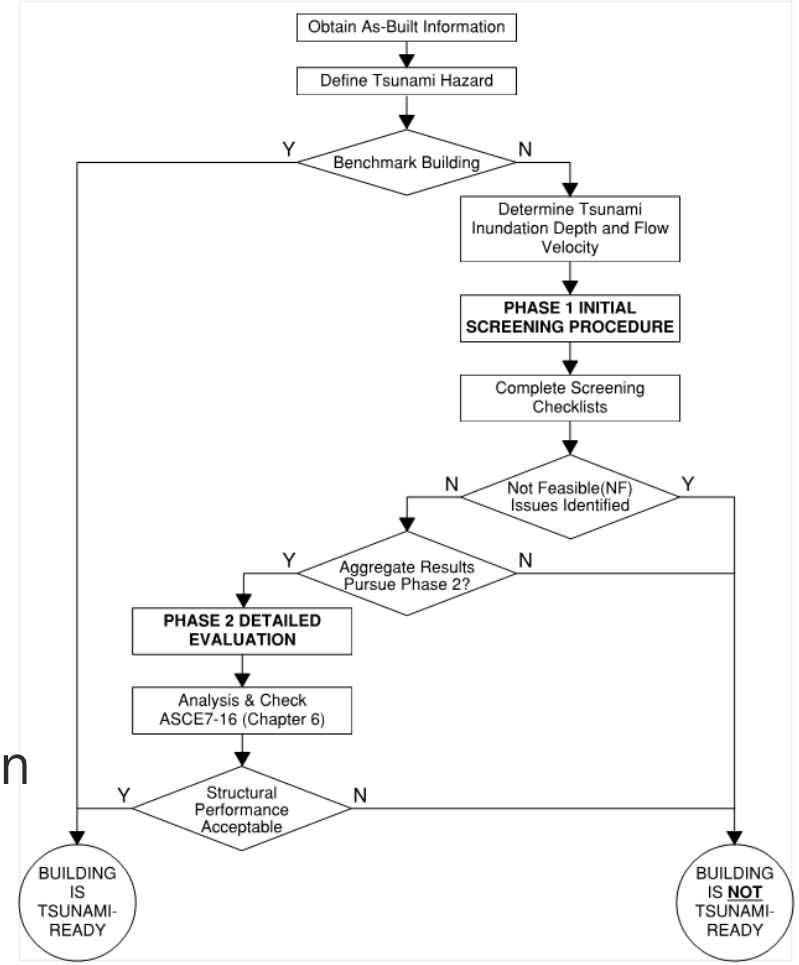
Potential Safe Site: Kalama Valley Community Park

# Task 5
# Vertical Evacuation Engineering Tool

- Tsunami Engineering Specialists: Degenkolb Engineering
- Based Upon Newly Released Tsunami Engineering Standards
- Multi-Phased Engineering Tool to Assess Potential Tsunami Safety and Vertical Evacuation Suitability
- Close Integration with Technical Experts on the HETAC
- Refined Tool utilizing Beta-Tests on four Large Structures within the Tsunami Inundation Zone
- HETAC Engaged for Final Comments and Revisions

# TsunamiReady program: two-step process

- Maximum Considered Tsunami Hazard Level
- Benchmark building – ASCE7-16
- Phase 1 – Moderate calculation effort required
  - Results:
    - Favorable,
    - Unfavorable, or
    - Not TsunamiReady
- Phase 2 – Considerable calculation & analysis required



# Task 6
# Public Outreach (Currently in final production)

- Outreach materials to include presentation and handout flyer information sheet
- ADA and LEP Title II and Title VI Compliant
- 13 language
  1. Chuukese-Foosun Chuuk
  2. Hawaiian
  3. Ilocano
  4. Japanese
  5. Korean
  6. Pohnpeian-Lokaihn Pohnpei
  7. Samoan
  8. Tagalog
  9. Thai
  10. Tongan
  11. Traditional Chinese
  12. Vietnamese

# DEPARTMENT OF EMERGENCY MANAGEMENT


Crystal van Beelen
Disaster Preparedness Officer
808-723-8960
cvanbeelen@honolulu.gov
www.Honolulu.gov/DEM

# o'ahu bike plan

2019 Update

**O'ahu Metropolitan Planning Organization**
Technical Advisory Committee

September 16, 2019
9:00 a.m.

**Department of Transportation Services**
CITY AND COUNTY OF HONOLULU

# 2019 O'ahu Bike Plan Update

1. Introduction
2. Planning Process
3. Key Recommendations
4. Proposed Bikeway Network
5. Implementation

o'ahu bike plan

2019 Update

**O'ahu Metropolitan Planning Organization**
Technical Advisory Committee

September 16, 2019
9:00 a.m.

**Department of Transportation Services**
CITY AND COUNTY OF HONOLULU

# Vision and Goals

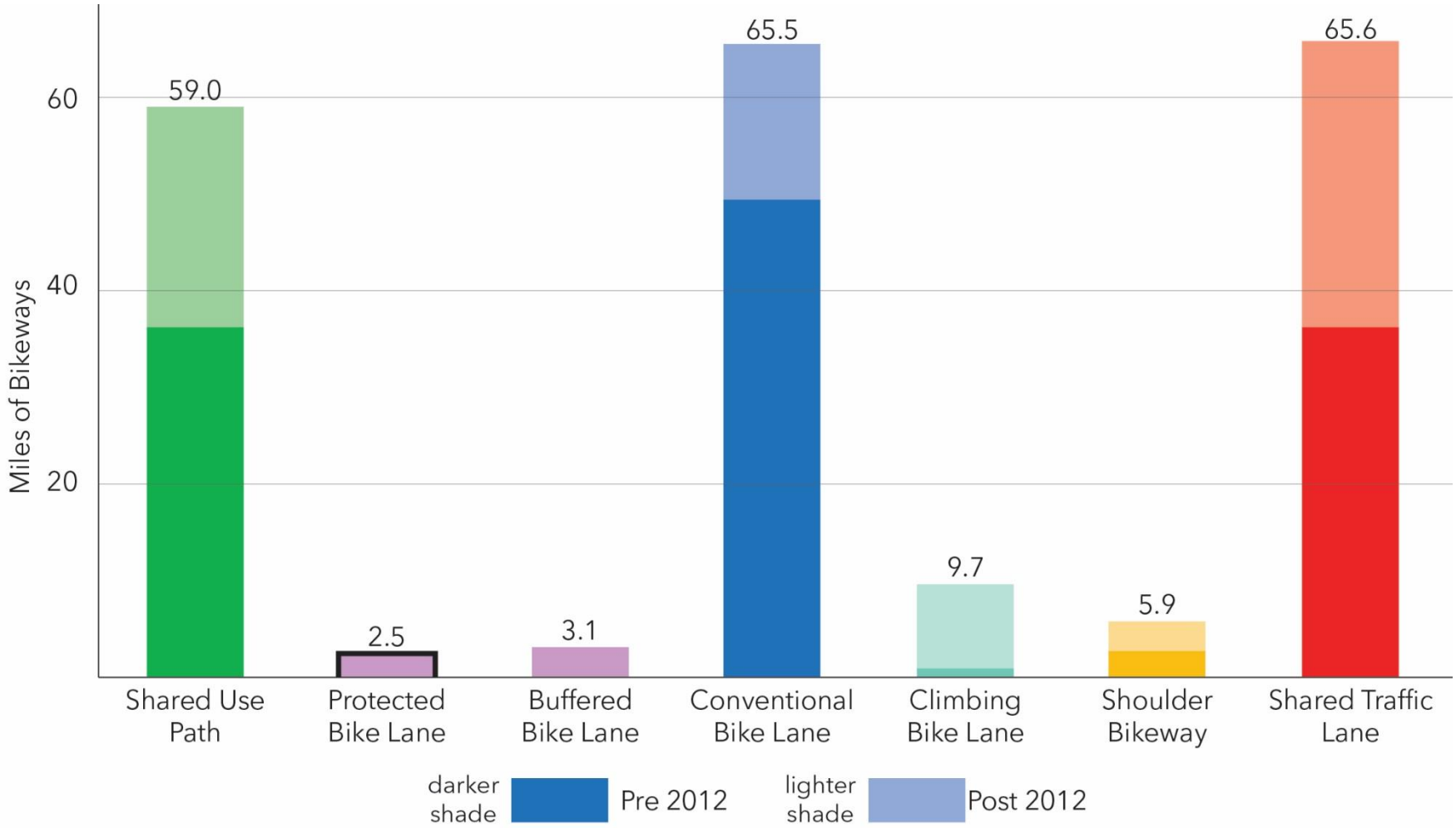
**Vision Statement**

O'ahu is a bicycle-friendly community where bicycling is a safe, viable, and popular travel choice for residents and visitors of all ages *and abilities*.

**Goals**

1. To encourage and promote bicycling as a safe, convenient, and pleasurable means of travel
2. To enhance cooperation between roadway users
3. To increase the mode share of bicycle trips
4. To be recognized by the League of American Bicyclists as a *gold level* Bicycle-Friendly Community

# Existing Bicycle Network



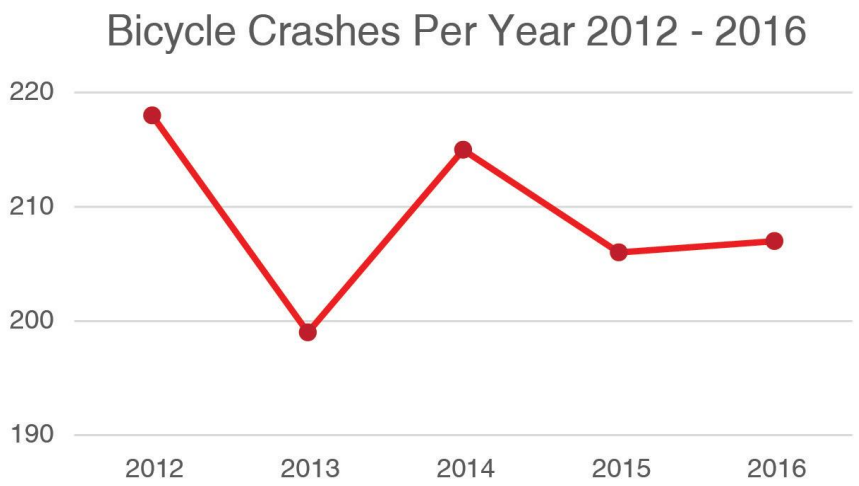
# Accomplishments Since 2012

- Biki is the #6 bikeshare system in the nation
- Bike parking ordinance
- Safe passing law
- Complete Streets
- Increased encouragement efforts (bike to work month, etc.)
- Extensive bicycle education efforts (over 3,000 adults and 8,000 children in 2018)
- Accelerated repaving schedule leveraged to install bicycle facilities

First year statistics for Biki

Over a million Biki rides were taken in 2018 calendar year

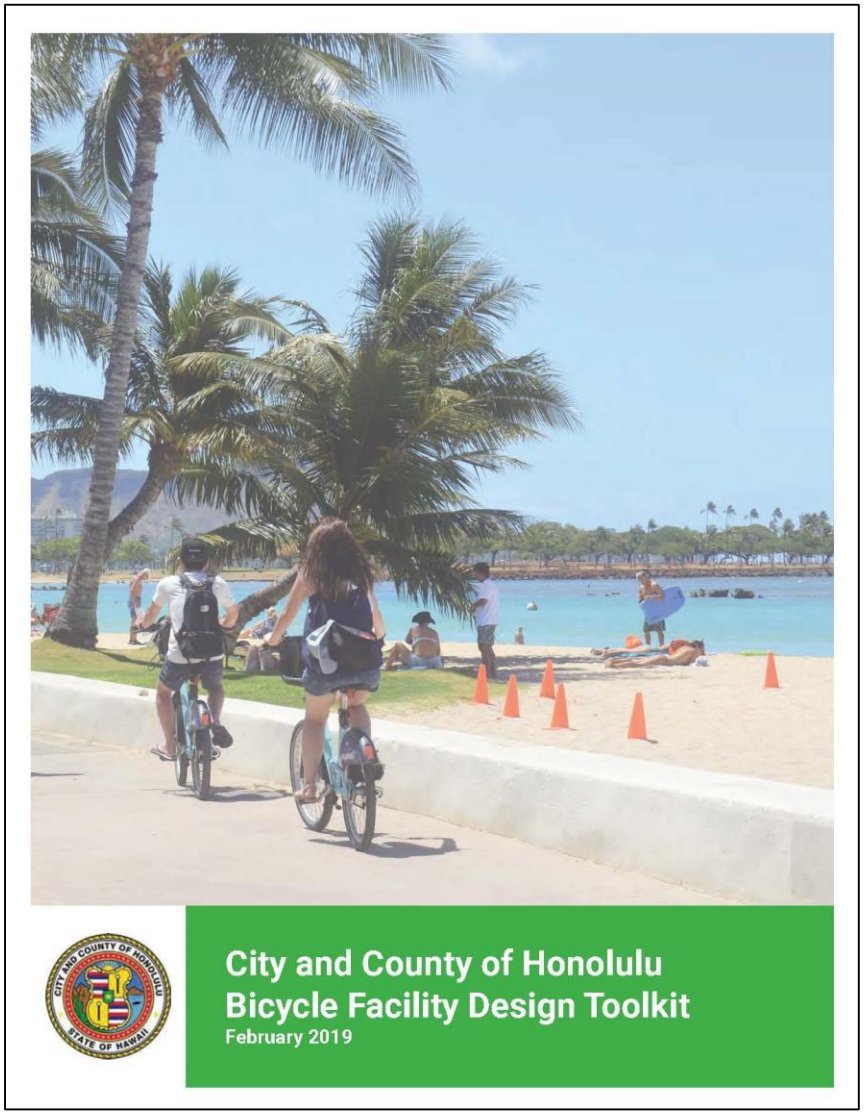
# Why Invest In Bicycling?



- Safety
- Affordability and Mobility
- Health and Wellness
- Economic Development
- Environmental Sustainability

# Research and Analysis

- Review of Best Practices
- Comprehensive inventory of the existing bicycle network, policies, and programs
- Development of the Bicycle Facility Design Toolkit
- Island-wide level of traffic stress analysis

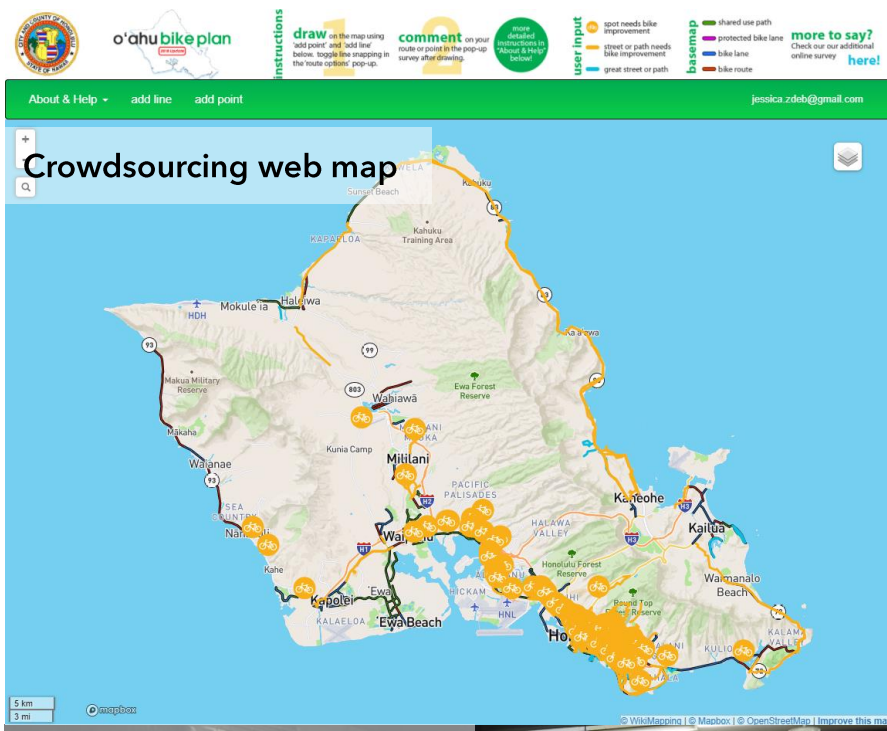


# Initial Phase of Public Engagement

- Crowdsourcing web map
- Web survey
- 4 community workshops around O‘ahu
- Stakeholder meetings and engagement

## Key Themes

- Safety
- Connectivity
- Aloha
- Bikeway maintenance
- Enforcement



Crowdsourcing web map

Initial community workshop

# Subsequent Public Reviews

## November 2018

- Final community workshop to present the proposed bikeway network and key recommendations followed by a one-month public review period.

## May 2019

- Release of the Draft 2019 Oahu Bike Plan Update followed by a one-month public review period.

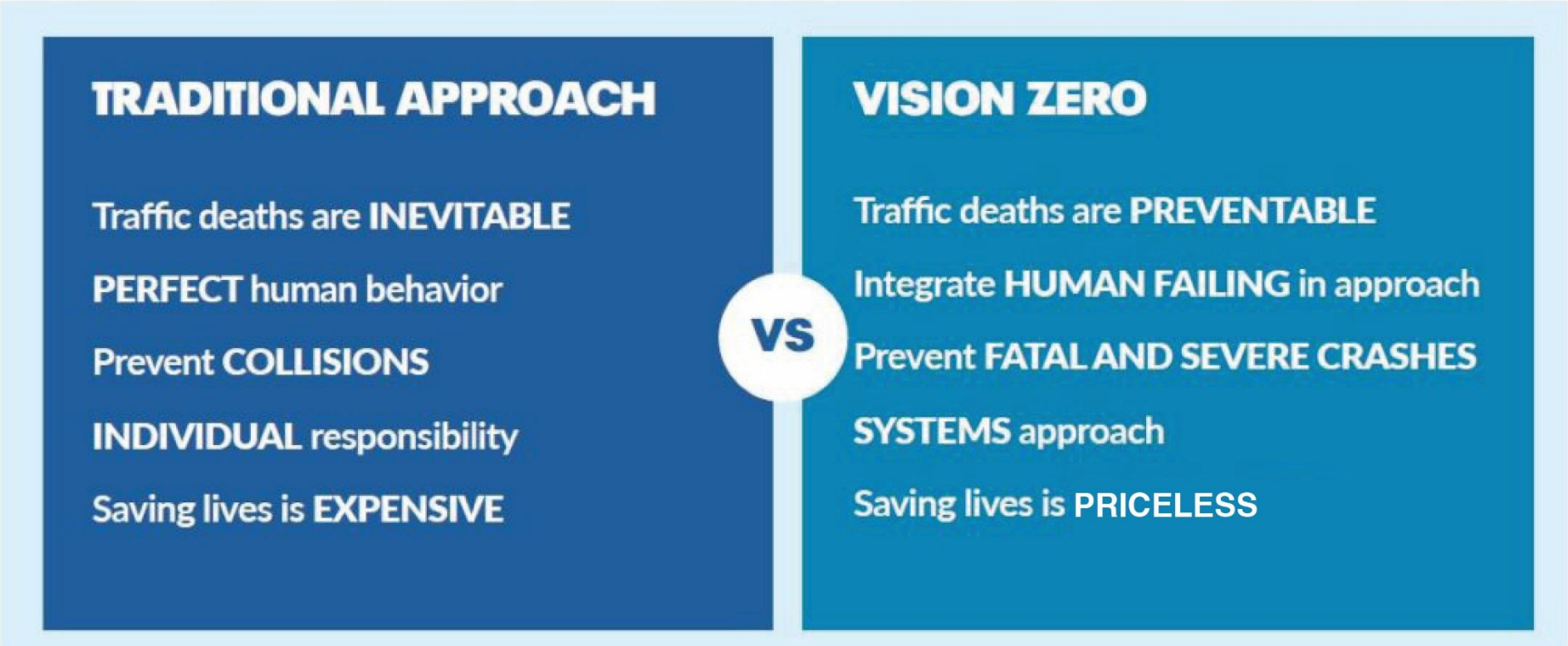
Final community workshop

Web map for public review of the proposed bikeway network

# Key Recommendations - Safety

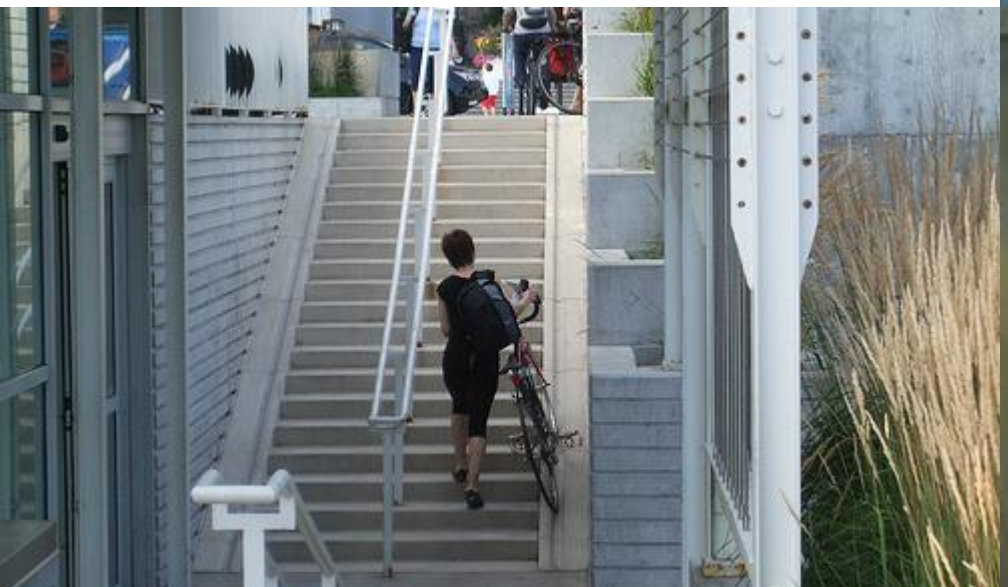
Consider a Vision Zero safety goal for all modes and all users

- Identify and implement emerging best practices (e.g., NACTO, AASHTO 2019 Bikeway Guide, etc.)
- Develop a collaborative interagency approach to prioritize safety across disciplines (i.e., design, maintenance, enforcement, etc.)
- Collaborate with HPD on driver/bicyclist enforcement that specifically addresses safety



# Key Recommendations – Multimodal Connections

- Develop seamless connections between bikes and transit
  - Safe bike access to transit stations
  - Bikes on transit
  - Secure bike parking
  - Bikeshare at and around stations



# Key Recommendations – Encouragement & Education

Renew focus on encouragement and education programs

- Support the establishment of ongoing Open Streets events
- Prioritize support for programs that target underserved populations (e.g., women on bikes, KVibe, Bike Ed, Senior Cycling)
- Increase staff positions to oversee the City's active transportation education and encouragement efforts.
- Leverage strategic partnerships (e.g., Blue Zones, AARP, HBL etc.)

# Key Recommendations - Maintenance

Establish a comprehensive maintenance policy for on and off-street bikeways

- Develop a facility conditions inventory and maintenance schedule for all off-street shared use paths.
- Create a maintenance and quick build team dedicated to bikeways.
- Publicize the 311 app and the pothole reporting hotline/online request system.
- Establish Work Zone Accommodation Standards for bikeways, paths, and sidewalks.

# Key Recommendations – Signage & Wayfinding

## Expand Signage and Wayfinding

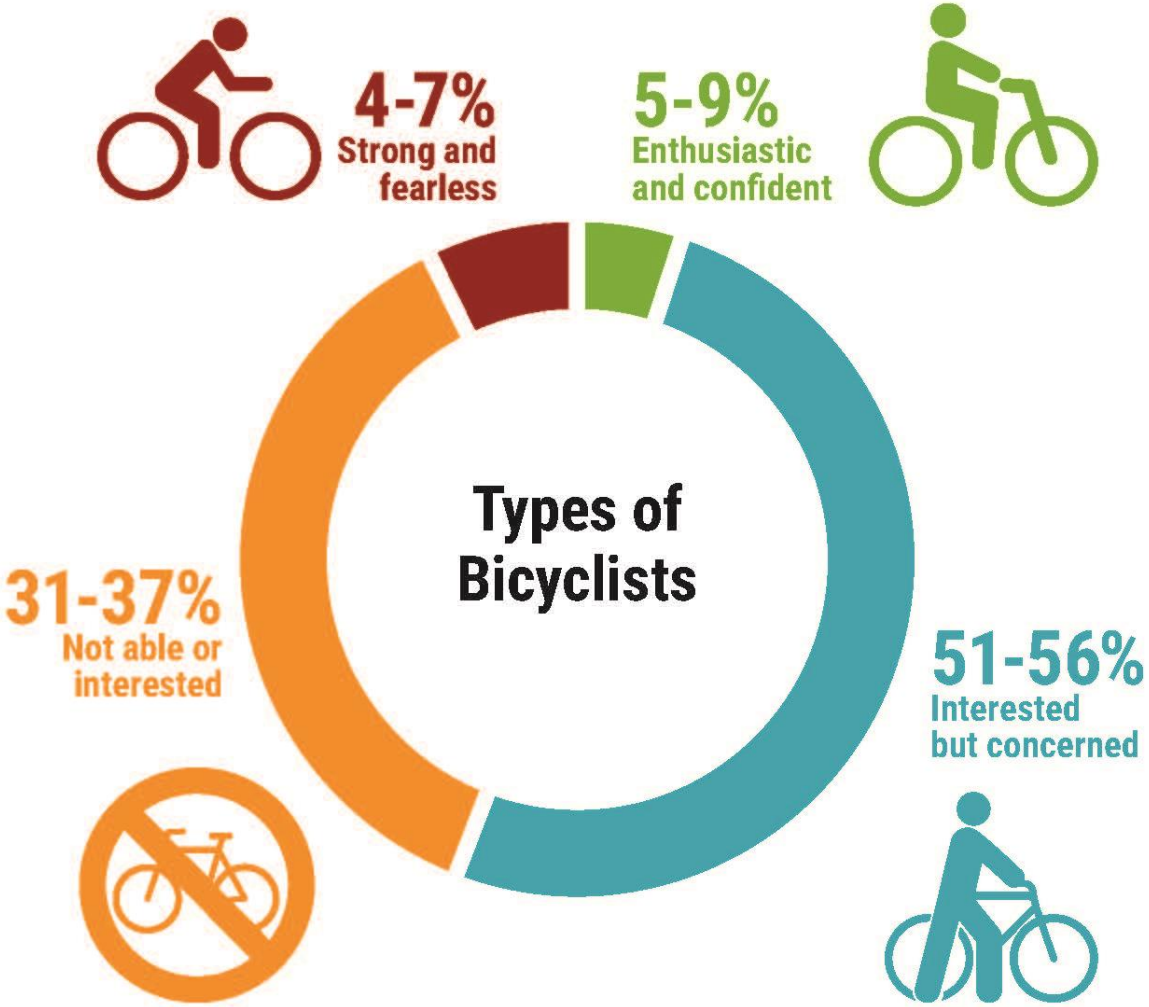
- Prioritize signage on low-stress bikeways
- Identify/Brand major regional routes (e.g., Lei of Parks, Pearl Harbor Historic Trail, Ke Ala Pūpūkea Bike Path, etc.)
- Prioritize iconic route segments for specialized treatment (e.g., Civic Center Path near the State Capitol)

# Key Recommendations – Evaluation

## Evaluate Bicycle Facilities and Programs

- Collect, analyze, and publish ridership data (i.e., bike counts)
- Evaluate the safety of new design treatments
- Assess the effectiveness and distribution of bicycle programs

# Who Are We Designing For?




These percentage values are typical ranges for most US communities.

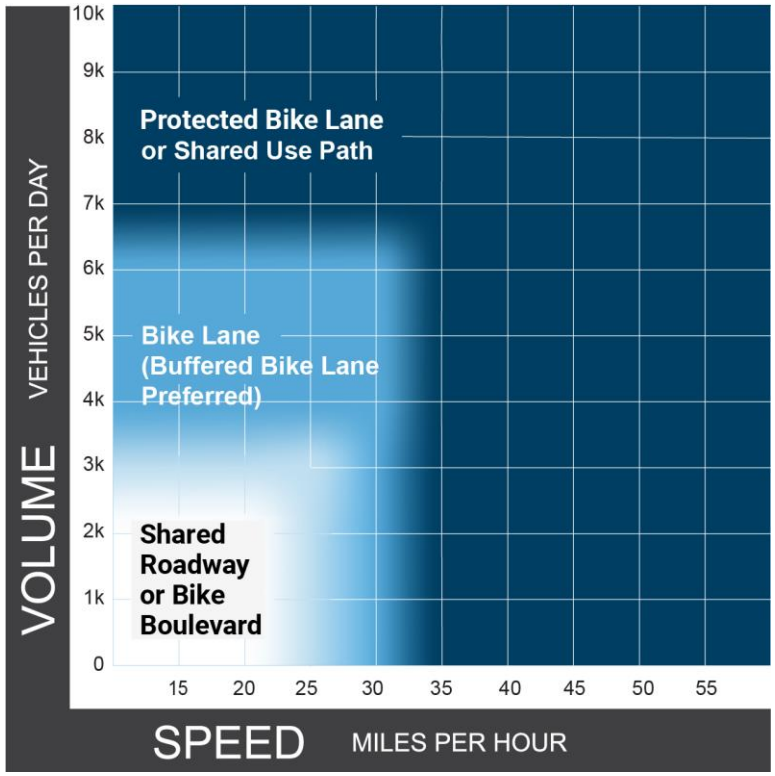
# Who Are We Designing For?

| Level of Traffic Stress | Shared Roadways | Bike Lanes | Protected Bike Lanes and Shared Use Paths | |
|---|---|---|---|---|
| **1** Suitable for bicyclists of all ages and abilities | Coyne St. ≤1,500 ADT, & ≤25 mph | Kainalu Dr. ≤25 mph, & 2 lanes | South St. Protected Bike Lane | Melaekahana Shared Use Path |
| **2** Comfortable for the average adult bicyclist | East-West Rd. ≤3,000 ADT, & ≤25 mph | Kamehameha IV Rd. ≤30 mph, 2-4 lanes | | |
| **3** Tolerable for experienced and confident bicyclists | Dole St. ≤6,000 ADT, & ≤30 mph | Ala Wai Blvd. ≤40 mph, 2-4 lanes | | |
| **4** Highly stressful | Kapahulu Ave. >6,000 ADT, or >30 mph | Nimitz Hwy. >40 mph, or >4 lanes | | |

Traffic Stress: LOW → HGIH

# Bicycle Facility Selection

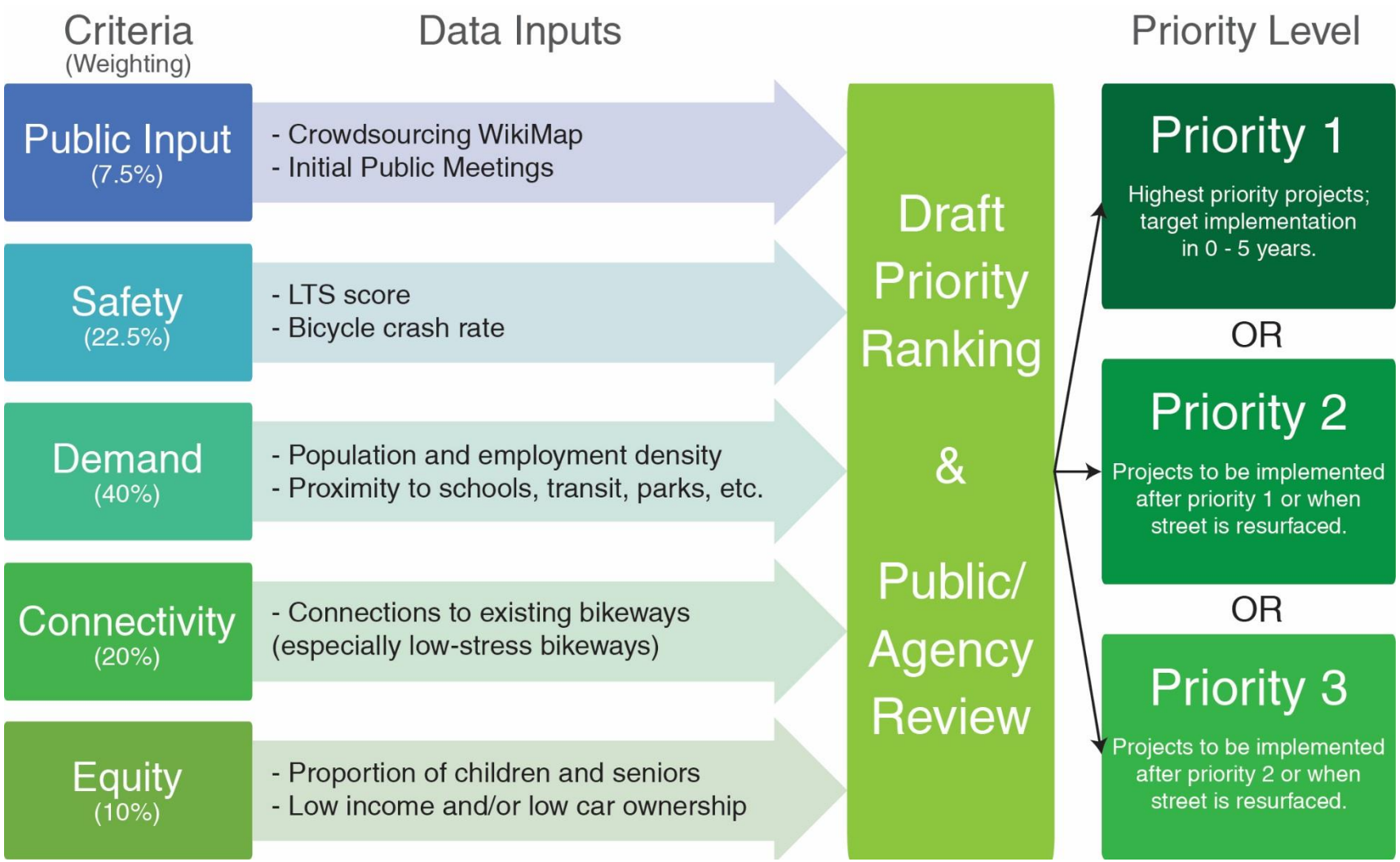
Preferred thresholds for traffic volume and speed



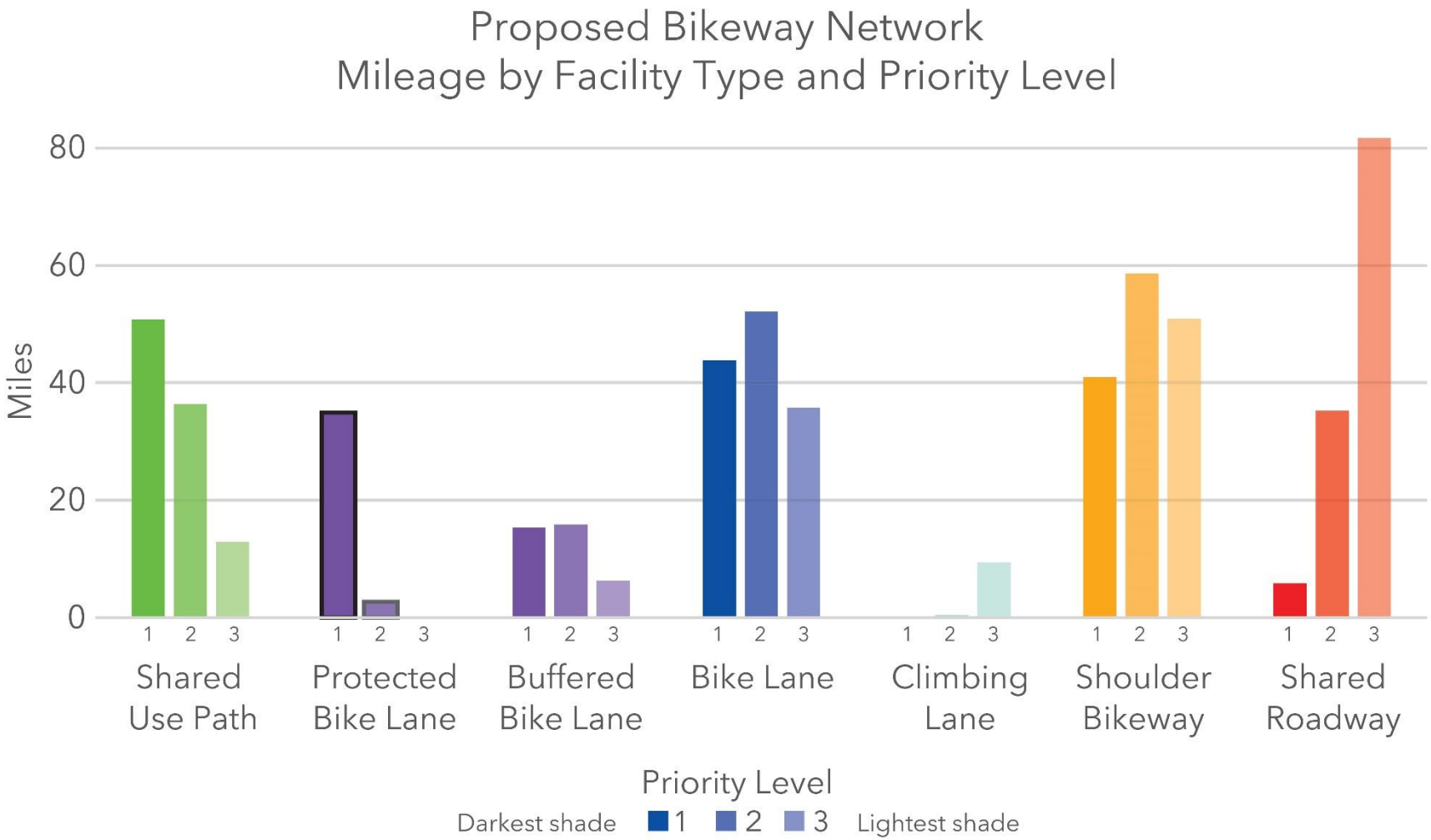

## Developing a Low Stress Bicycle Network

- Separation and dedicated space increases with traffic volume and speed.
- Serves the largest share of the population to increase bicycling in our community.
- All proposed facilities were evaluated for gross technical feasibility.
- Additional considerations for determining separation between bikes and pedestrians

# Project Prioritization

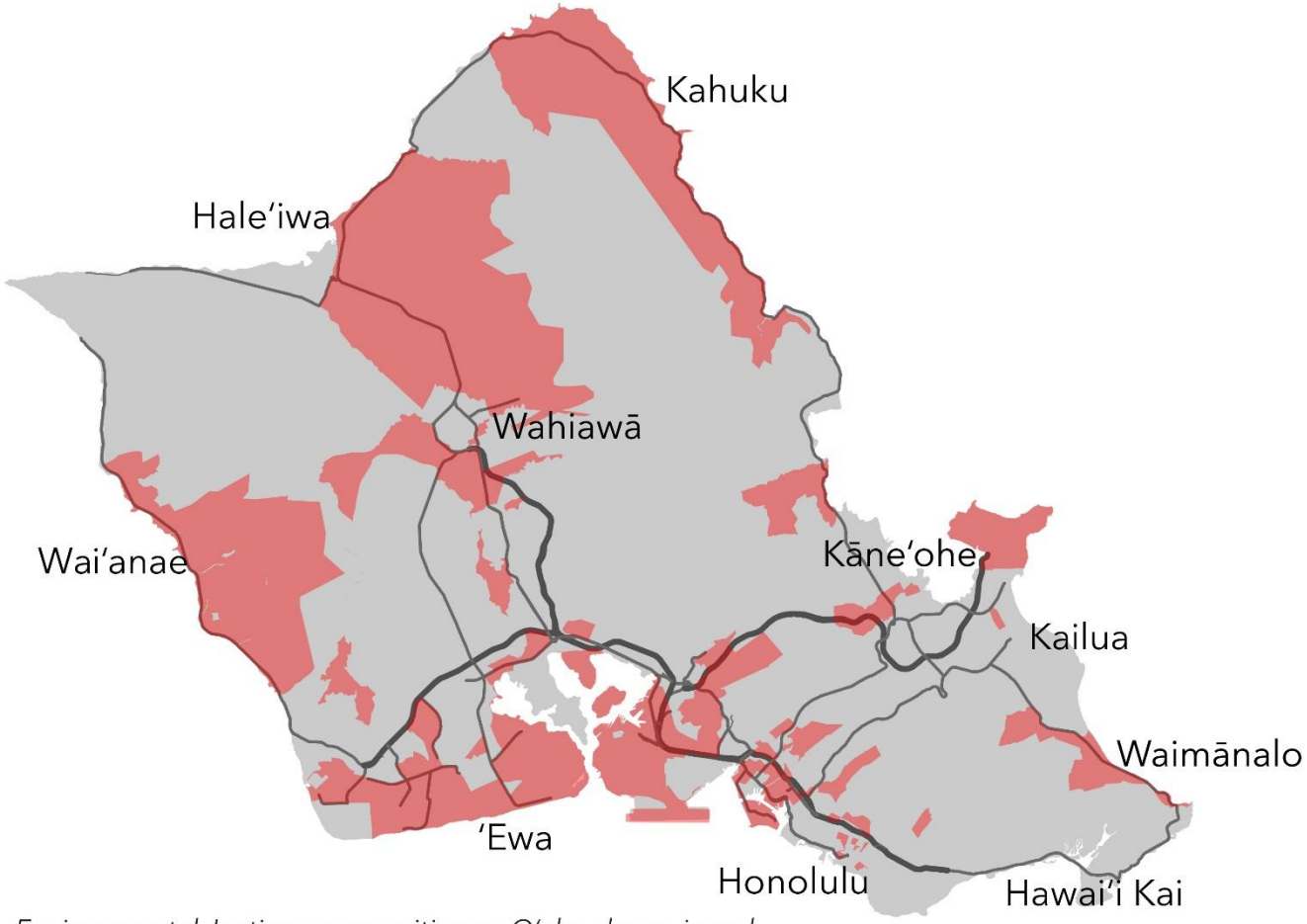


# Proposed Bikeway Network – Facility Type



# Title VI and Environmental Justice

| | Proportion of O'ahu population | Proportion of proposed bikeway mileage | Difference |
|---|---|---|---|
| **Environmental Justice (EJ) Communities** | 34% | 40% | +6% |




*Environmental Justice communities on O'ahu shown in red.*

# Project Costs and Funding Sources

| Proposed Bikeway Network | | | | | |
|---|---|---|---|---|---|
| Projected City Costs | | | Projected State Costs | | |
| Priority | Miles | Cost ($ million) | Priority | Miles | Cost ($ million) |
| 1 | 88 | $52.0 | 1 | 103 | $56.9 |
| 2 | 101 | $53.9 | 2 | 85 | $73.6 |
| 3 | 135 | $40.3 | 3 | 54 | $37.6 |

- Operating Budget
- Capital Improvements Program (CIP) Budget
- Federal Highways Administration (FHWA) Funding
- Federal Transit Authority (FTA) Grants
- Safe Routes to School (SRTS)
- Developer Impact Fees

# Implementation Strategies

Bike lane demonstration project and open-streets event on Cooke Street. (Source: Hawaii Bicycling League)

The climbing lane on Monsarrat Avenue was recently installed as part of a roadway resurfacing project

- Engage with the affected community early and often
- Consider demonstration projects to introduce new facilities
- Continue to take advantage of roadway resurfacing
- Integrate comfortable bicycle facilities into complete streets plans

# Performance Measures

| 5-year Performance Measure (2024) | Baseline | Data Source | Plan Goals | | | |
|---|---|---|---|---|---|---|
| | | | 1. Increase bicycle mode share | 2. Enhance roadway cooperation | 3. Encourage safe, convenient and pleasurable bicycling | 4. Gold level Bicycle Friendly Community |
| Double the bicycle commuting mode share. | 1.2% average (2013 - 2017) | ACS | ✓ | | | ✓ |
| Eliminate bicycle fatalities. | 1.2 per year (2013 - 2017) | HDOH | | ✓ | ✓ | ✓ |
| Reduce bicycle crashes by 25%. | 199 per year (2013 - 2017) | HDOH | | ✓ | ✓ | ✓ |
| Complete 100% of priority 1 bikeway projects. | 0% | DTS | ✓ | ✓ | ✓ | ✓ |
| Provide secure bicycle parking at all HART stations and allow bikes on transit. | N/A | DTS/ HART | ✓ | | ✓ | ✓ |
| Double the number of participants in education and outreach events. | 11,358 participants (FY 2018) | HBL/DTS | | ✓ | ✓ | ✓ |
| Assess the condition of all shared use paths and complete or program repairs. | N/A | DTS/ DFM/ HDOT | ✓ | | ✓ | ✓ |
| Conduct and publish annual bike counts for at least five separate locations. | N/A | DTS | ✓ | | | ✓ |
| Achieve gold level Bicycle Friendly Community status from the League of American Bicyclists | Bronze | LAB/DTS | | | | ✓ |

# MAHALO

**For more information please visit the project website:**

www.honolulu.gov/bicycle/bikeplanupdate