

Honolulu / KAILUA

COMPLETE STREETS



Community Workshop



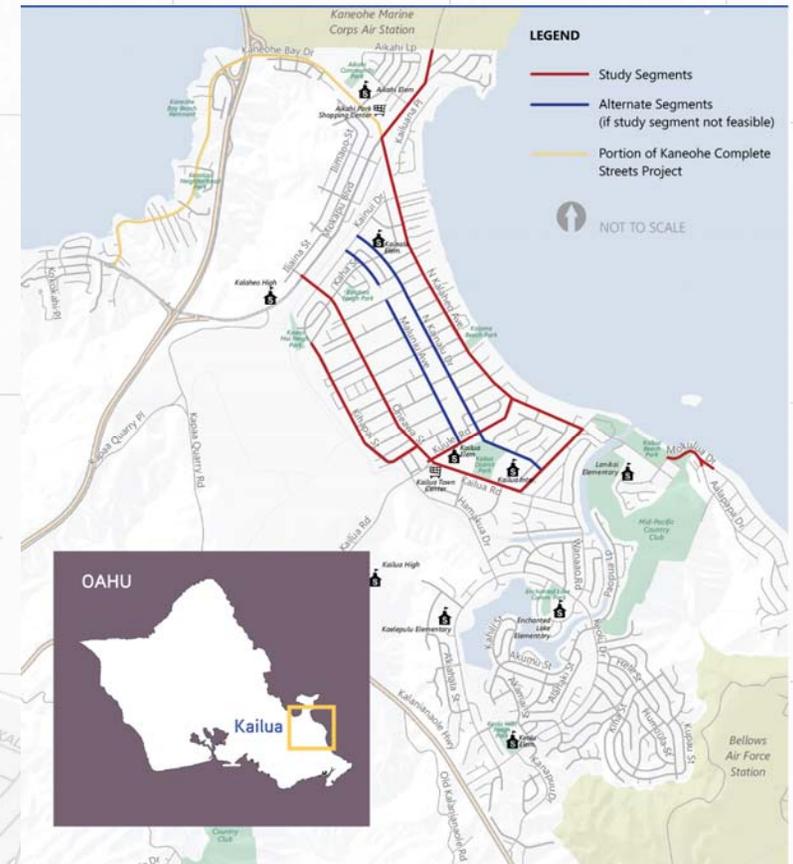


PROJECT TEAM

- City and County of Honolulu Complete Streets Program
- Consultants
 - Belt Collins Hawaii LLC
 - Fehr & Peers
 - Blue Zones, LLC

TODAY'S AGENDA

- Welcome and Introductions
- Presentation
 - Understanding the Problem
 - Honolulu Complete Streets Program Overview
 - Kailua Complete Streets Project Overview
 - Complete Streets Toolbox
 - Street Concepts
- Questions and Answers
- Group Exercises and Report Out
- Closing Remarks





 City and County of
HONOLULU
Complete Streets Design Manual

01

Understanding the Problem

Honolulu / KAILUA
COMPLETE STREETS



WHAT ARE COMPLETE STREETS?

Complete Streets are...

- Safe mobility for people of all ages and abilities
- Accommodating to all modes, including foot, bicycle, transit, and automobile
- Integrated with the community's vision and sense of place
- Supportive of community health and transportation equity



THE NEED

Who Benefits?

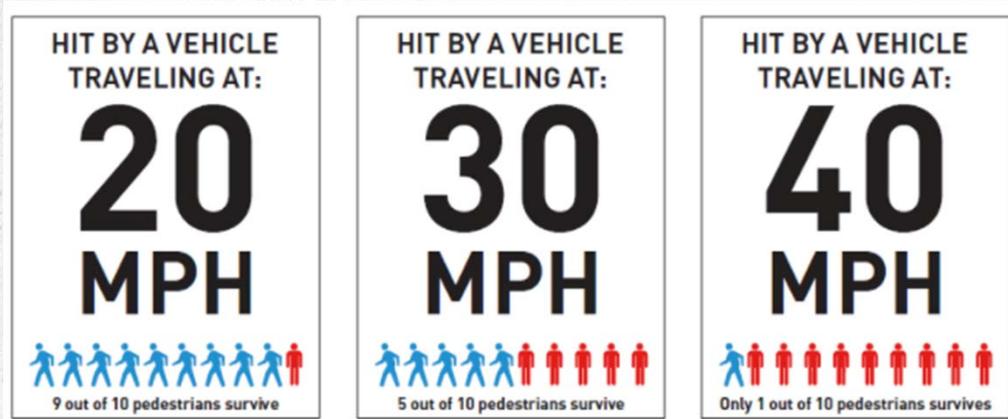


Complete Streets support:

- Safety
- Public Health
- Transportation Equity
- Smart Growth/Livability
- Economic Development
- Accessibility

SAFETY

Reduce Speeds in School Zones to 20mph



Higher speeds increase the likelihood and severity of crashes while lower speeds improve safety for everyone, especially people walking and cycling. Survival for a pedestrian is directly tied to vehicular speed.



So many parents now drive their children to school that they now make up up to 30% of rush hour traffic. Some parents arrive an hour early in order to be at the head of the pick up queue.

THERE IS TOO MUCH TRAFFIC
FOR BILLY TO WALK TO SCHOOL;
SO WE DRIVE HIM.



What Determines Our Health?



Building complete streets in Honolulu is the first and most significant step we can take together to improve our personal and community health. Our quest should be to make walking, bicycling and use of transit natural, easy and desirable choices.

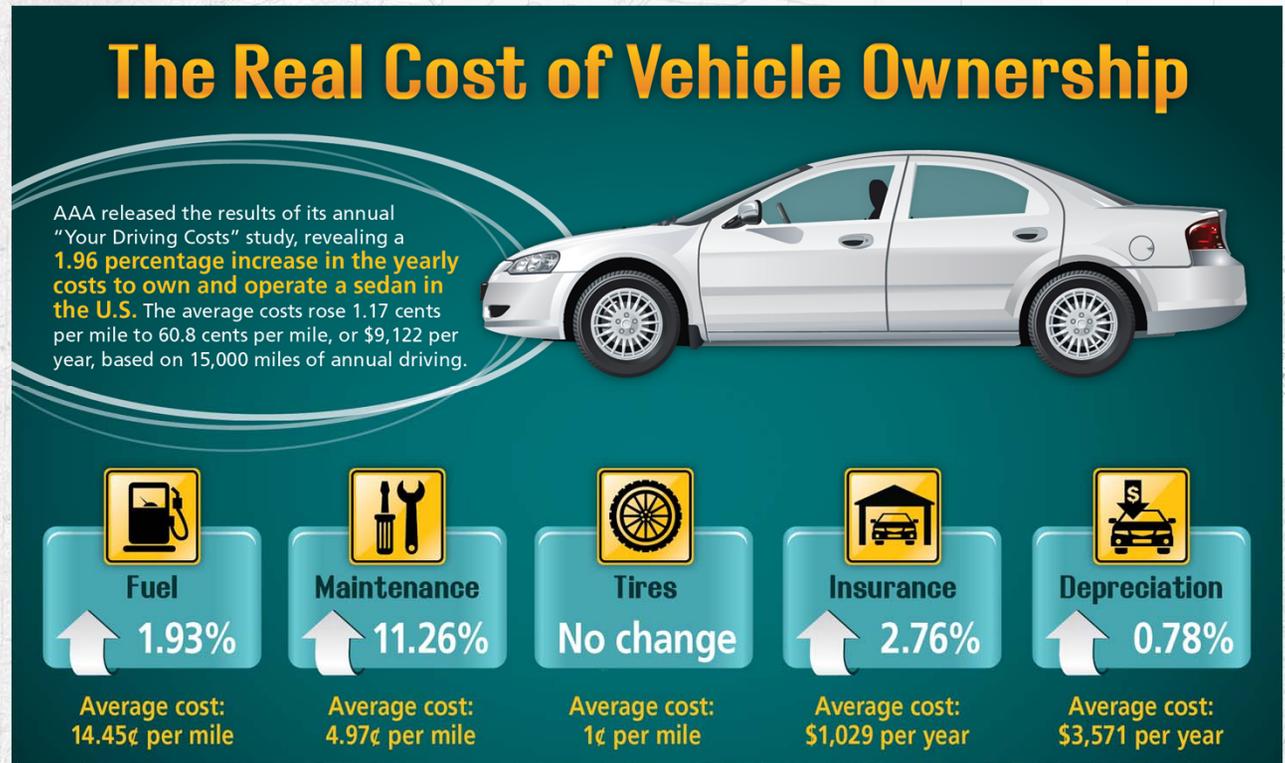
“Obesity is such that this generation of children could be the first in U.S. history to live less healthful and shorter lives than their parents.”

—Dr. David S. Ludwig,
Director, Children’s
Hospital Boston Obesity
Program



Transportation Equity

AAA figures the average annual cost of operating one car per year is **\$9,122** (higher in Hawaii). This takes a big bite out of a family household, especially if it is necessary to operate two cars. Since almost all of this money is sent to the mainland, this hits our limited island economy hard.





Being able to walk, bike or roll gives freedom and equity to all who do not drive.

Denying access to those that do not drive is not only costly and cruel, it is not the Hawaiian Ohana value we hold dear.



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Smart Growth / Livability



People seek places of the heart. While for many this is be a beach or other cherished natural or cultural place, all parts of our built environment can be enlivened by design decisions.

Place-based planning assesses all land use and transportation investments to ensure they align with the community's vision.

Streets occupy so much of our shared public space that they must be considered as a community-building opportunity.

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79% of Americans want to live in a walkable neighborhood.

51% of Millennials prefer living in houses where they can walk to shops and have a short commute.

Only **14%** of today's neighborhoods are walkable;
demand is far outpacing supply.

(Source: National Association of Realtors, 2015)



1-Point increase in *Walk Score* is associated with a \$500-\$3,000 increase in home values.

(Source: CEO for Cities, 2009)

Economic Development

Olive Avenue in West Palm Beach, FL is a State road. It was a former 5-lane road tasked to handle 18,000 vehicles per day. Olive Avenue went on a “road diet,” removing three of the travel lanes. Within one year, property values doubled. People now can cross the street with ease and comfort; the neighborhood quality improved.



Accessibility



Small features often make the most difference for livability. High curbs, poor drainage, dog fouling and broken sidewalks are cited as physical hazards that keep elders from venturing out.

Images Moiliili Neighborhood



Benefits Include

- Increases physical activity rates
- Encourages social connectedness
- Catalyzes small business development
- Increases property values
- Improves access and safety for all
- Advances social equity
- Reduces pollution and run-off
- Provides safe routes to school
- Makes the healthy choice the easy choice

Source: Victoria Transport Policy Institute
<http://www.vtppi.org>

LAND USE CONTEXT

Understanding land use context allows us to provide appropriate street design features based on the character of the community from urban to rural environments based on Context Sensitive Solutions (CSS) Transect.

Transect images produced by Dover, Kohl & Partners:



- | | | | | | | |
|---------------------|-------------------|-----------------------|---------------------------|--------------------------|------------------------|-------------------------|
| T1 | T2 | T3 | T4 | T5 | T6 | SD |
| Natural Zone | Rural Zone | Sub-Urban Zone | General Urban Zone | Urban Center Zone | Urban Core Zone | Special District |

STREETS

ROLE OF BUILDINGS



Building placement and street design are inter-dependent.

Open automobile-oriented streetscapes do not invite activity

Addressing transportation and land use together can transform environments and add value to our community



City and County of
HONOLULU
Complete Streets Design Manual

02

Honolulu Complete Streets Program Overview

Honolulu / KAILUA
COMPLETE STREETS



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City and County of Honolulu
Complete Streets Policies and Principles
(ROH 14-33)

DFM

DPP

DTS

DDC

First Aid
Road Repairs

Oahu
Bike Plan

ROW
Setback

TOD

Policies +
Procedures

Oahu
Ped Plan

Construction
Projects

Bus Rail
Integration

TIVL

Design and construct Complete Streets
Improvements

Rail Access

Traffic Improvements at
Various Locations (TIVL)

Multimodal access and circulation around rail stations

Survey, maintenance, +
pavement preservation

Transit-Oriented Development, community-building
and catalytic projects

TOD + Special District Zoning, Subdivision
Rules, Transportation Impact Assessment

HONOLULU'S COMPLETE STREETS COMMITMENT

Policy, Planning, and Initiatives: 2009-2016

2009

- State Legislation requires Counties to set Complete Streets policy

2012

- Complete Streets Ordinance 12-15 adopted by City Council



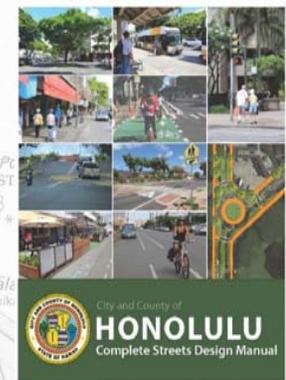
2013

- Complete Streets Implementation Study
- Age Friendly City Initiative
- State Pedestrian Master Plan



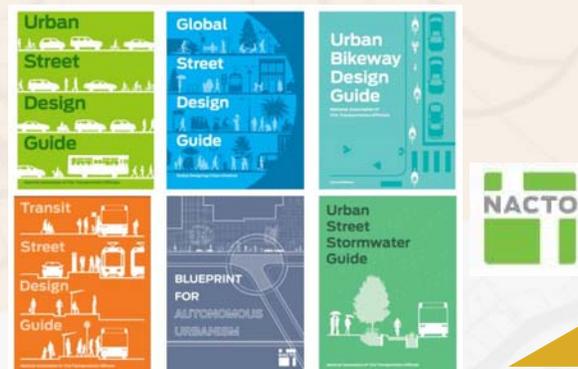
2016

- City and County Complete Streets Design Manual Finalized



Complete Streets Commitments

Projects, Progress and Goals



Projects Completed in Kailua

- Pedestrian/Bicycle Wayfinding
- Kalapawai Triangle

Projects Underway in Kailua

- Hamakua Drive Bike Lane
- Kailua Road Improvements
- Bike Block
- Bicycle Boulevard (SRTS)
- Kailua Complete Streets
- Oahu Pedestrian Plan
- Oahu Bike Plan Update

2019+ Upcoming Goals

- Long-range Complete Streets Planning
- Construction of Complete Streets projects
- Identify new Complete Streets projects
- NACTO Membership



THE OPPORTUNITY

- Resurfacing
- Redevelopment
- Infrastructure Improvements
- Car Share



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Complete Streets Partners

Non-profit



State



City



Regional





Current Projects

HOME POLICY PLANNING PROJECTS PARTNERS

Honolulu COMPLETESTREETS

KAILUA

STAY IN THE LOOP

Subscribe to our mailing list

* Indicates required
Email Address *

Name

Affiliation

Which Complete Streets Projects Are You Interested In:

- Downtown/Chinatown
- Honolulu Urban Core
- Liliha/Nuuanu
- Kailua
- Waikiki
- Kalihi
- University Avenue
- Kaneohe
- Pearl City

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Complete Streets in Kailua

Next Steps

Kailua already has a few Complete Streets projects in design and construction – the Kailua Road/Kaliheo Avenue roundabout, improvements on Hahaione Drive and Waiwae Road. Next, DTG is looking at major roadways in Kailua town with the aim of reducing stress for all users. Complete Streets are

Study Area

The study focuses on Kailua Road, Kaliheo Avenue, Kulele Road, Mokuia Drive, Onoawa Street, Kihapai Street, and Mokuia Road. Area network roadways including Kailua Drive and Makua Avenue will also be studied. These roadways are marked on the map below.



03

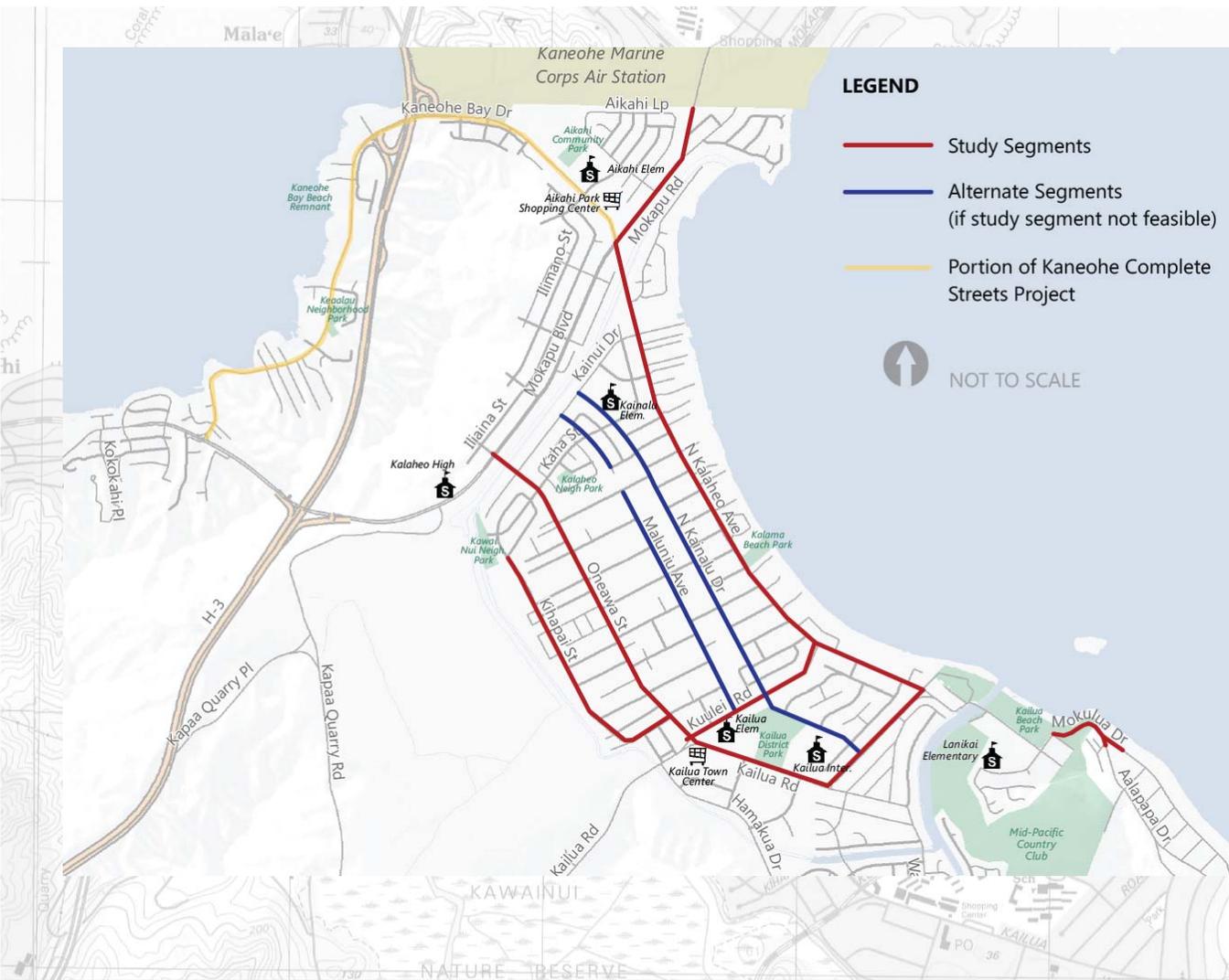
Kailua Complete Streets Project Overview

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PROJECT FOCUS AREA

- Study Roads: Kailua Rd, Kalaheo Ave, Kuulei Rd, Mokulua Dr, Oneawa St, Kihapai St and Mokapu Rd
- Alternate: Kainalu Dr and Malunui Ave

Tasks and Timeline

TASK 1

Data Collection & Multimodal Assessment

TASK 2

Community Engagement

TASK 3

Environmental Review and 30% Design Plans

2017

SEPTEMBER

- Data Collection

OCTOBER

NOVEMBER

DECEMBER

2018

JANUARY

FEBRUARY

MARCH

APRIL

MAY

JUNE
TO
DECEMBER

- Draft Multimodal Assessment

- Final Multimodal Assessment

Gather Community Input

- Meetings with Elected Officials
- Neighborhood Board Presentation
- Interviews, Presentations to Community Groups
- Community Pop-ups, Walk Tour

Present Design to Community

- Neighborhood Board Presentation
- Community Meeting
- Share Findings on Website

- Concept Design
- Consult with Environmental Regulatory Agencies
- 30% Design Completed

DATA COLLECTED

- Multimodal Counts
 - Cars, Trucks, Pedestrians, Bicycles
- Pedestrian Collisions
- Bicycle Collisions
- Vehicle Collisions
- Bus Ridership and Facilities





04

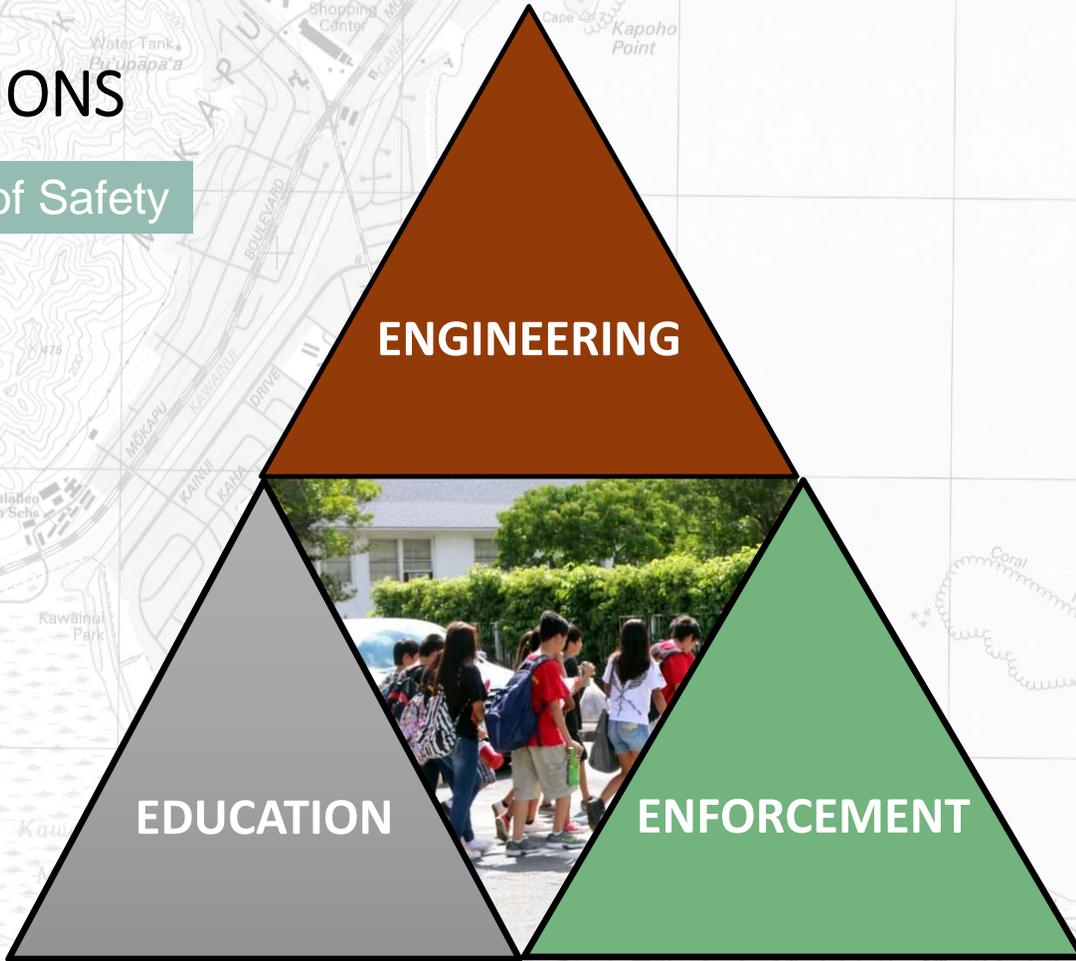
Complete Streets Toolbox

Honolulu / KAILUA
COMPLETE STREETS



THE SOLUTIONS

The Three E's of Safety



HONOLULU COMPLETE STREETS GUIDE

Chapter Overview

1. Background
2. Street classification
3. Ideal street cross sections
4. Intersections
5. Pedestrian crossings
6. Bicycle facilities
7. Pedestrian environments
8. Accommodating transit
9. Streetscape design



UNDERSTANDING TRAVEL WAY USERS

Motorists

Pedestrians

Bicyclists

Transit users



TRAFFIC CALMING

Traffic calming is the combination of mainly physical measures that:

- Reduce negative affects of motor vehicle use
- Alter driver behavior
- Improve conditions for non-motorized street users

Chicanes and Curb Extensions



Speed Humps



Intersection realignment



Access control



Gateways and Medians



Median Crosswalks

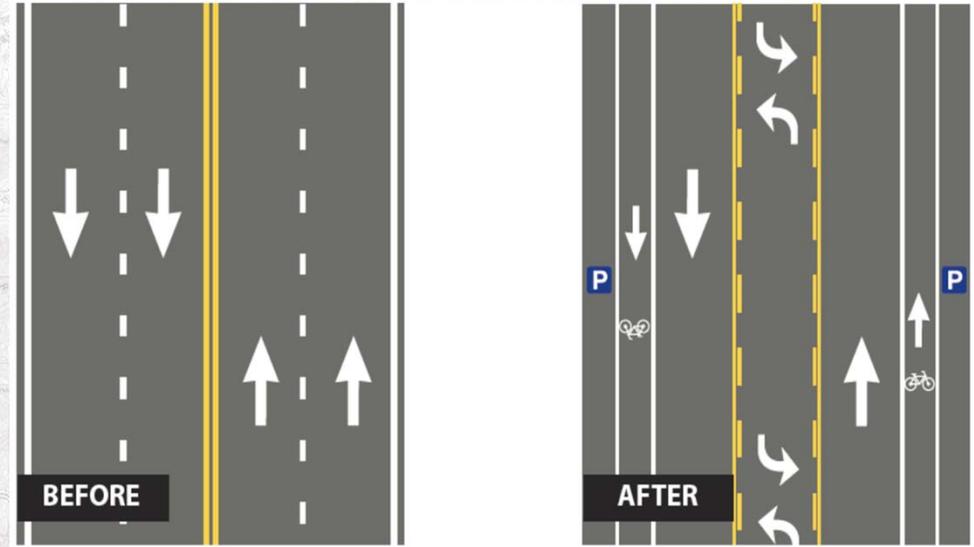
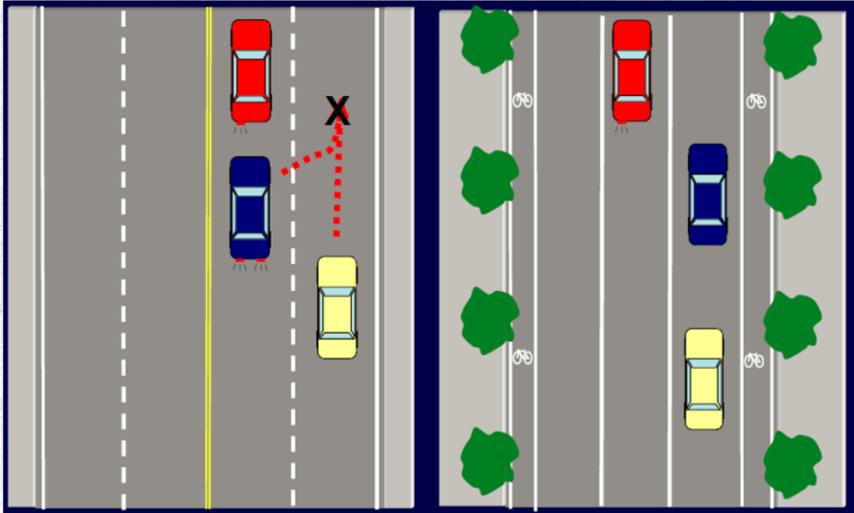


ROAD DIETS

FHWA Proven Crash Countermeasure:

- Overall crash reduction 19 to 47%
- Reduction of rear-end and left-turn crashes
- Shorter crossings (fewer lanes to cross)
- Added space can allow for bike lanes and/or added parking





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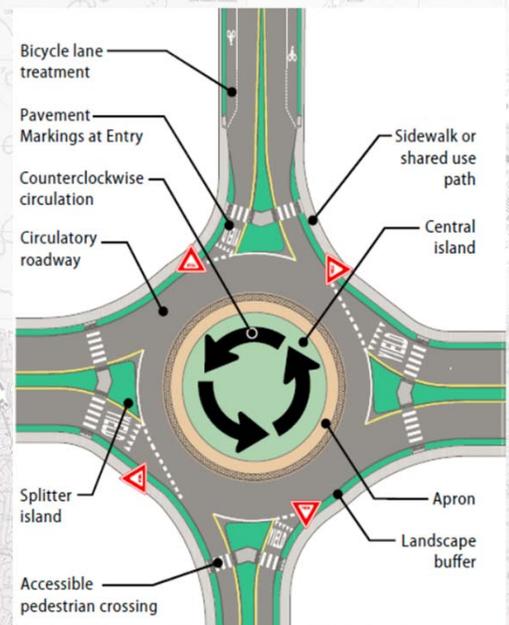
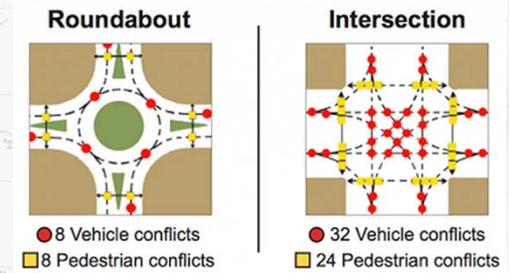
ROUNDBABOUTS

Roundabouts are a proven safety countermeasure:

- **82% reduction** in severe crashes for all users compared to stop control intersections
- **78% reduction** in severe crashes for all users compared to signalized intersections

All Roundabouts have essential distinguishing features:

- Counterclockwise flow
- Entry yield control
- Low speed



MINI CIRCLES AND CHICANES

Mini circles and chicanes can be implemented to manage traffic in low-volume locations, lower speed and improve safety



PARKING

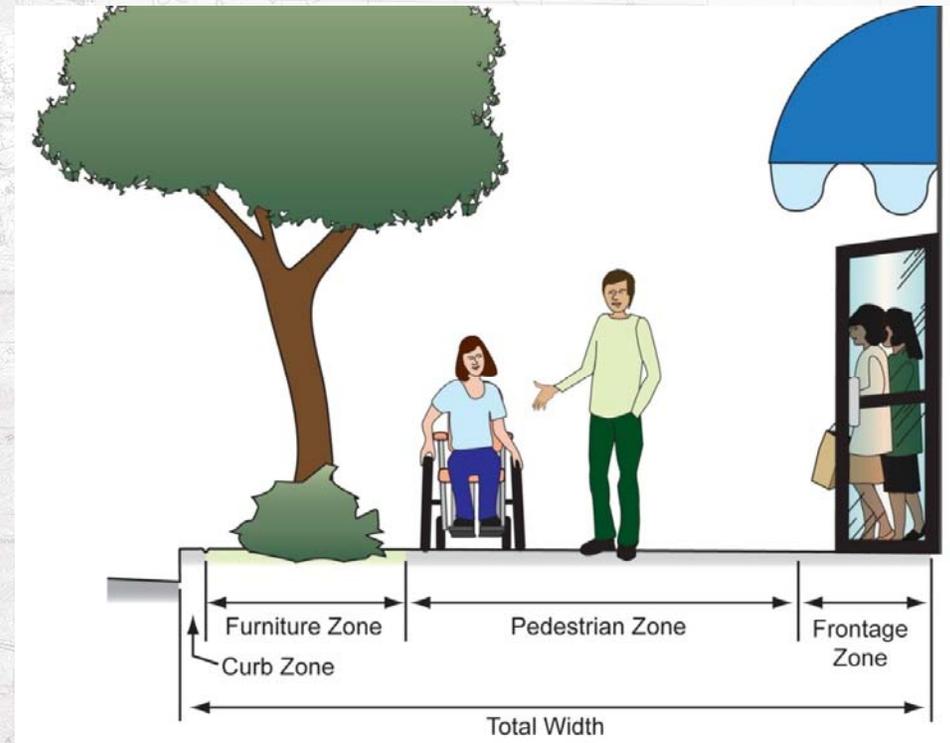
On-street parking is important in urban and suburban environments for the success of retail businesses that line the street, to provide a buffer for people on foot and to calm traffic speeds.



SIDEWALK ZONES

The sidewalk corridor extends from the edge of roadway to the right-of-way and is divided into 4 zones:

- Curb zone
- Furniture zone
- Pedestrian zone
- Frontage zone



CROSSWALKS MARKED/UNMARKED

Crosswalks are present by law at all intersections, whether marked or unmarked, unless pedestrian crossing is specifically prohibited.



Marked crosswalk at uncontrolled intersection



Marked crosswalk at mid-block median



Marked crosswalk at stop controlled intersection



Marked crosswalk at signalized intersection

PEDESTRIAN CROSSING TOOLBOX: RAISED CROSSINGS

Raised crosswalks slow traffic and put people on foot in a more visible position. They are especially effective near schools where they improve the ability to see children.



PEDESTRIAN CROSSING TOOLBOX: MEDIANS & ANGLED CROSSINGS

Raised islands and medians are the most important, safest, and adaptable engineering tool for improving street crossings.

Angled crossings help orient people on foot to better identify conflict with approaching traffic.



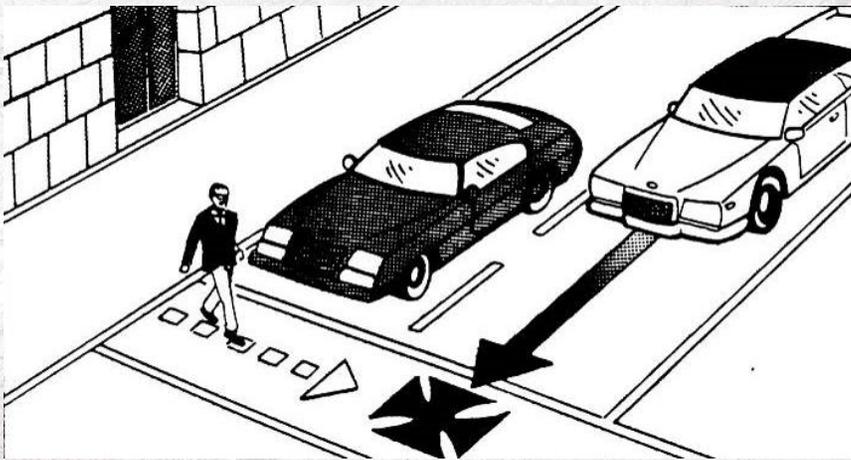
PEDESTRIAN CROSSING TOOLBOX: RECTANGULAR RAPID FLASH BEACON (RRFB)

- Interim FHWA approval (NEW)
- Studies find motorist yield rates 20% to 80%
- Pedestrian activated
- Strobe flashing beacon



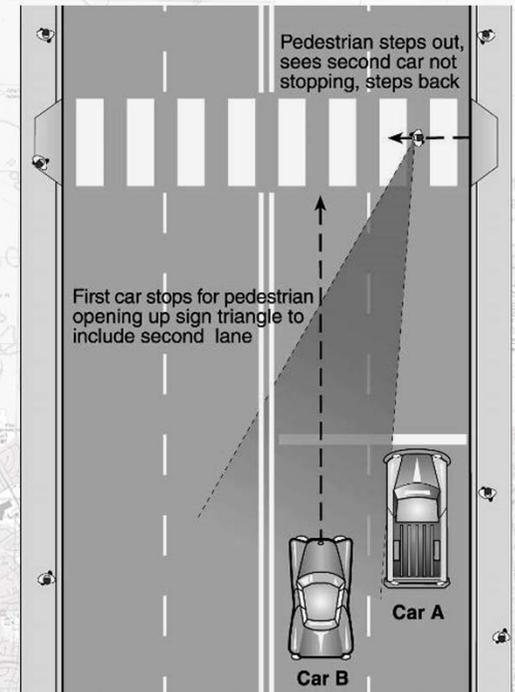
PEDESTRIAN CROSSING TOOLBOX: ADVANCE STOP LINE

ISSUE: Multiple threat hazard
1st car stops too close, masks visibility for driver in 2nd lane

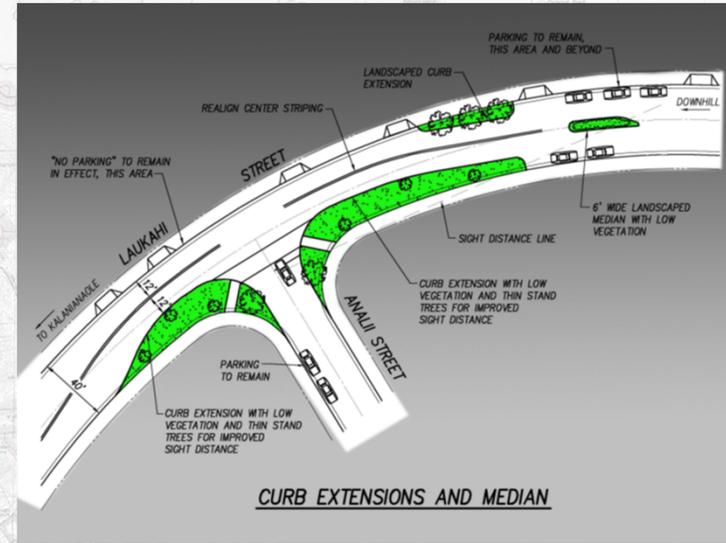
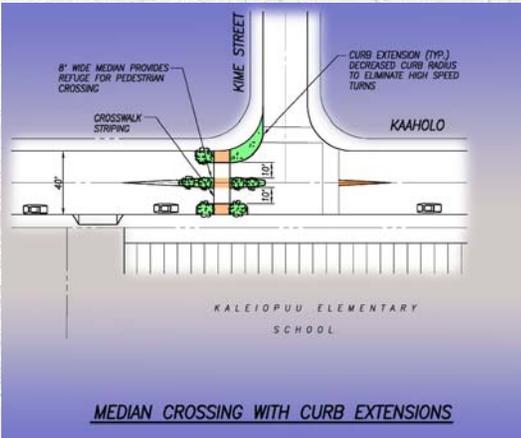


SOLUTION: Advance Stop Line

The advance stop line allows first car to stop further back making it easier for second car and pedestrian to see each other

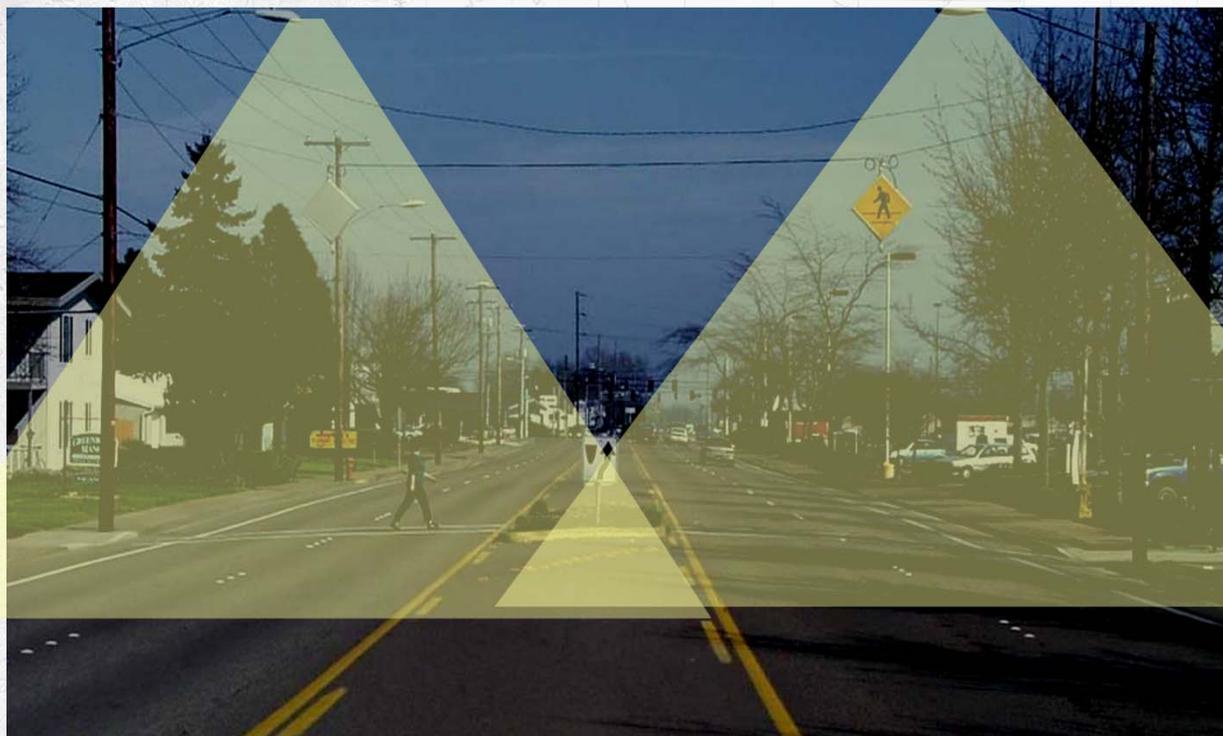


PEDESTRIAN CROSSING TOOLBOX: CURB EXTENSIONS



PEDESTRIAN CROSSING TOOLBOX: LIGHTING

Lighting provides essential nighttime illumination to support pedestrian activity and safety for all travel way users.



BICYCLE USER TYPES

Understanding Attitudes about Bicycling

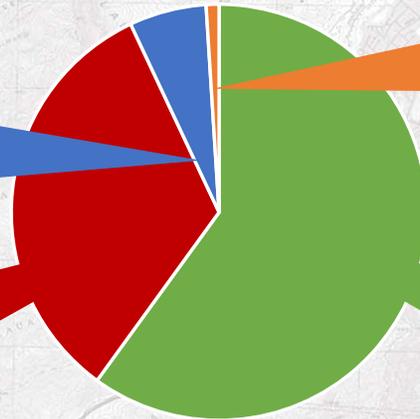
Not all bicyclists are the same. A classification system developed by the city of Portland, Oregon, identifies four user typologies and characteristics.



Enthusiastic & Confident [6%]
People who feel safe and comfortable bicycling on most streets but prefer dedicated bicycle facilities



No Way No How [33%]
People with no desire to use a bicycle regardless of facilities provided



Strong & Fearless [1%]
People who will bicycle regardless of roadway conditions



Interested but Concerned [60%]
The majority of the population with an interest in bicycling, but concerns about comfort and safety



BICYCLE FACILITIES

The O'ahu Bike Plan provides recommendations for a regional network of bikeways. The network is comprised of:

- Bike Routes
- Bike Lanes
- Shared Use Paths (separated from traffic)

Bicycle Facility Types

Separated Bicycle Facilities
Shared Use Path



Curb Side Bike Path



Protected Bike Lanes (Cycle Track)



Bike Lanes
Buffered Bike Lane



Bike Lane



Contra-Flow Bike Lane (One-Way Street)



Bike Routes
Shared Roadway



Wide Outside Lane



Shoulder



BIKE ROUTES

- Shared roadways
- Shared Lane Markings (Sharrows)
- Wide curb lanes
- Shoulders
- Bicycle Boulevards



Shared Lane Marking (Sharrows)



Shared roadway (bike route)



Wide curb lane



Shoulder

BIKE LANES

- Standard bike lanes
- Buffered bike lanes
- Protected bike lanes
- Raised bike lanes
- Contra-flow bike lane (one-way street)



Standard bike Lane



Buffered Bike Lane



*Raised Protected
Bike Lanes*



*Contra Flow Bike
Lane*



*Protected Bike
Lane (Cycle Track)*

SHARED USE PATHS



Shared Use Path

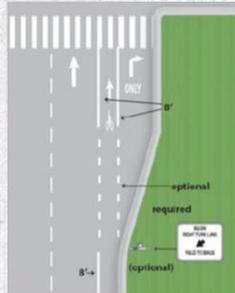


Curb-Side Shared Use Path

BICYCLE INTERSECTIONS



Example of intersection with bike lane and right turn lane



Two Stage Left Turn Box positions the bicyclist outside of traffic to await the following signal cycle to proceed



Examples of intersections with bike box, which allow cyclists to advance to the front of traffic



Example of mixing zone for protected bikeway and right turning motorists



Bicycle signals provide independent phasing for bicycles

BICYCLE PARKING

Short-term bike parking



Long-term bike parking



Bike Corrals



Lack of dedicated bicycle parking results in obstructions to walkways.

Enclosed covered parking provides greater protection from theft and weather for longer parking needs, such as at a transit station.

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BICYCLE CONNECTIONS TO TRANSIT

Connecting bicycle facilities to transit stations helps extend the trip length for people on bicycles and reduce reliance on automobile travel.

- Racks on buses
- Bike racks or lockers for storage
- Bike sharing stations
- Design to avoid conflict between buses and bicyclists



TRANSIT CONSIDERATIONS

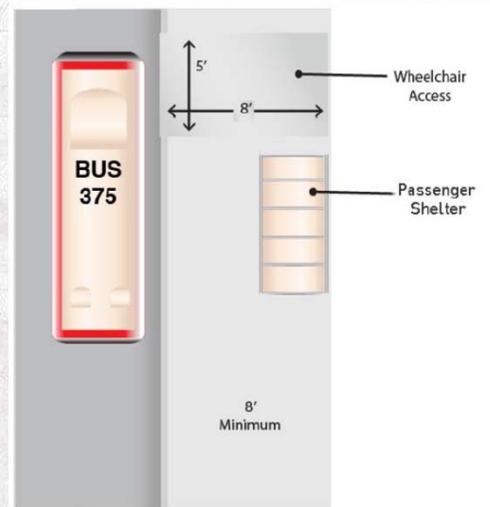
Public transit should be planned and designed as part of the street system. It should interface seamlessly with other modes.



BUS STOP PLACEMENT AND FACILITIES

Factors considered:

- Distance between stops
- Location of expected passenger generators
- Pedestrian safety and access
- Operational needs (near side vs far side of intersection, mid-block locations discouraged)
- Traffic safety
- Accessibility



Credit: Michele Weisbart (Michele Designs)



05

Street Concepts



Honolulu / KAILUA
COMPLETE STREETS



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Complete Streets Design Manual





STREET TYPOLOGY



Boulevard & Parkway

Moderate speed, high motor vehicular capacity, primary transit route, dedicated bike facility. Urban with 4+ travel lanes.



Avenue

Low to moderate speed, moderate to high motor vehicular capacity, dedicated bike facility. Short distance connector between urban centers and boulevards, 2 to 4 travel lanes.



Main Street

Low speed, high pedestrian and bicycle volumes. Similar to an Avenue but within the commercial section of town center.



Street

Low speed, dedicated pedestrian facility. May be designated as Bicycle Boulevard or Shared Street. Urban or suburban, 1 to 2 travel lanes.



Rural Road

Low volume, low speeds. Vehicles, pedestrians, and bicycles share the road. Sparse development, 1 to 2 travel lanes.



Mall

High pedestrian volumes. Transit Malls and Pedestrian Malls are similar to a Street but private motor vehicles are prohibited or heavily restricted. Commercial area.



Lane/Alley

Narrow, increases pedestrian and bicycle connectivity. Allows deliveries and refuse collection to the rear of buildings and garages.

*Honolulu's use of the term "avenue" or "street" in the street name does not necessarily reflect the street typology

Person Capacity

Street with People in Cars



One Bus



People without the Cars



Walking and Biking



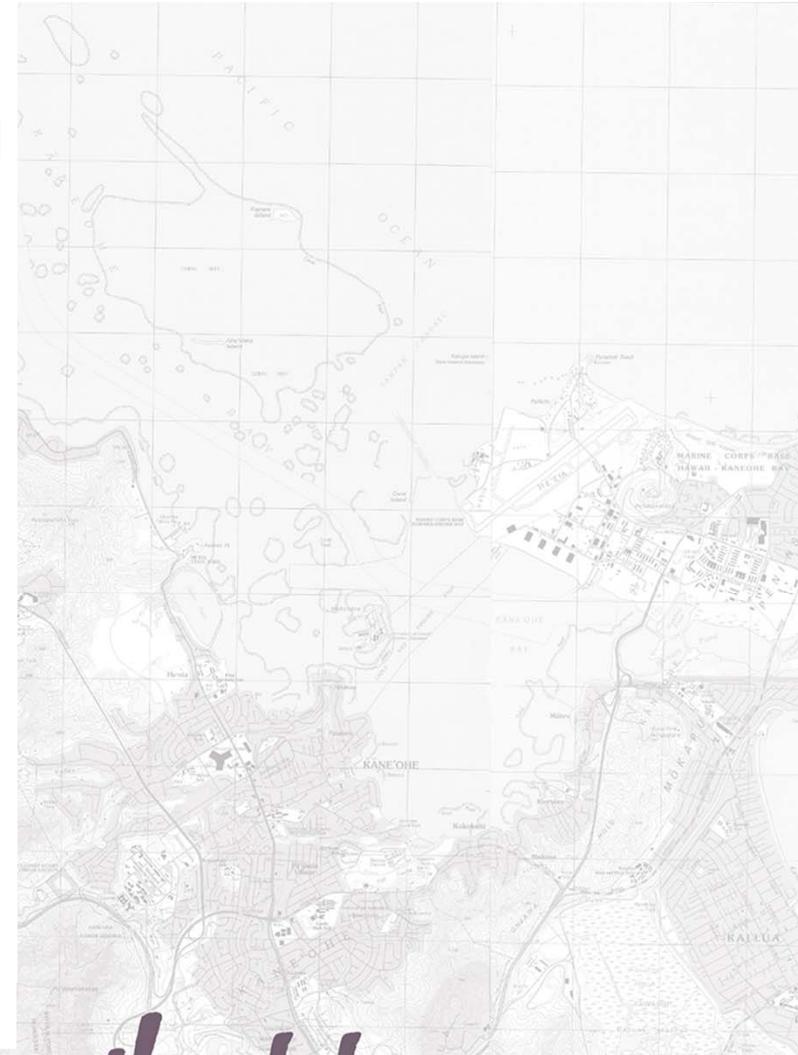
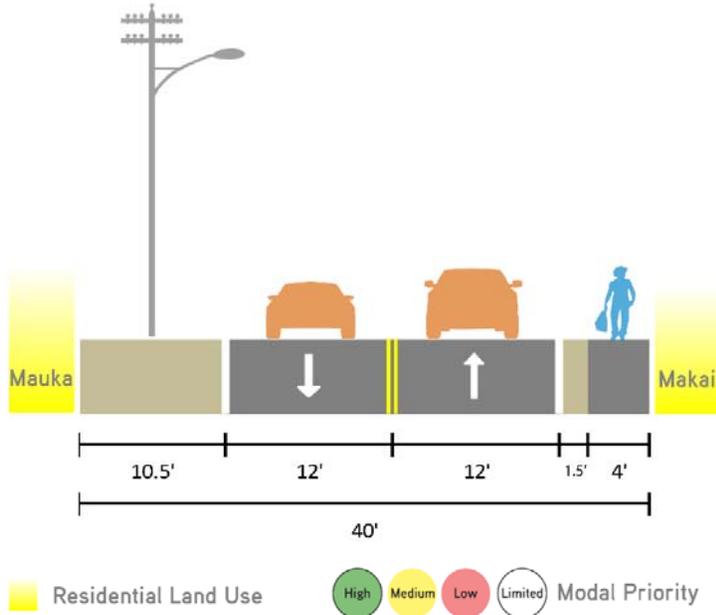
Reference:
Honolulu Visualizations
by Harrison Rue – Citizen Planner Institute,
Steve Price – Urban Advantage

3 Kalaheo Ave. between Kuulei Rd and Kailuana Pl.

EXISTING / NO BUILD ALTERNATIVE

Typology
Avenue

Modal Priority

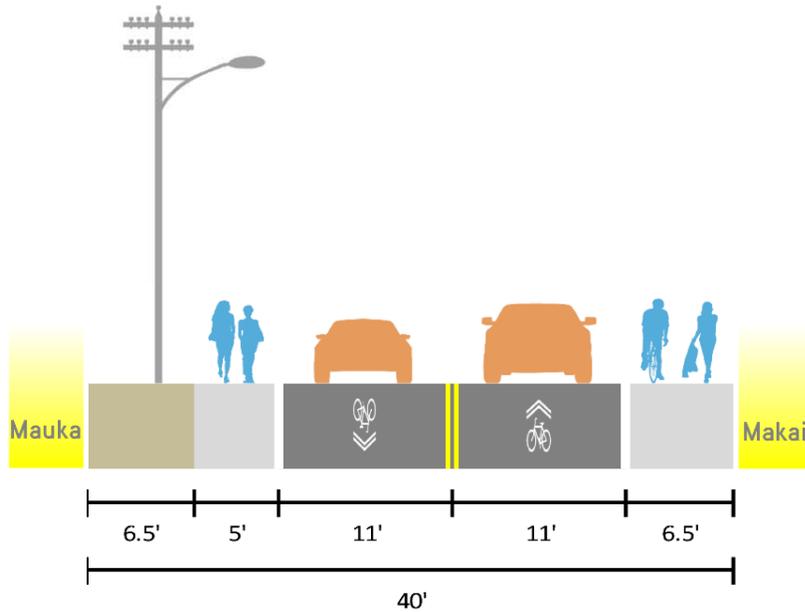


3 Kalaheo Ave. between Kuulei Rd and Kailuana Pl.

PROPOSED ALTERNATIVE 1

Typology
Avenue

Modal Priority



- Bike route with shared lane markings (sharrows)
- Striped pedestrian zone along both sides of the roadway
- Reduction of vehicle travel lane widths

Residential Land Use High Medium Low Limited Modal Priority

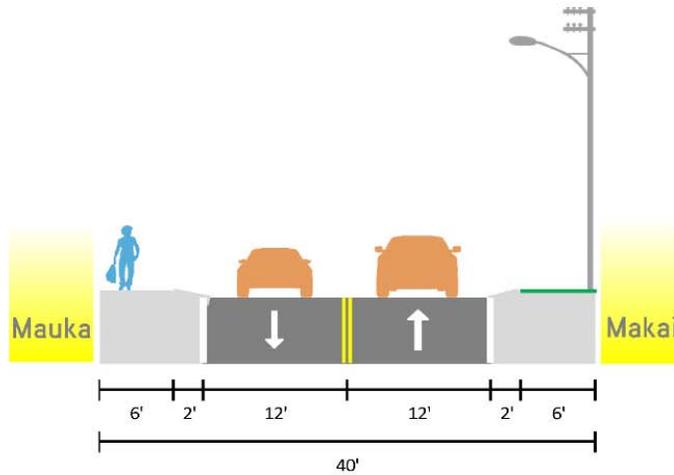


7 Oneawa St. between Wailepo Pl. and Olomana St.

EXISTING / NO BUILD ALTERNATIVE

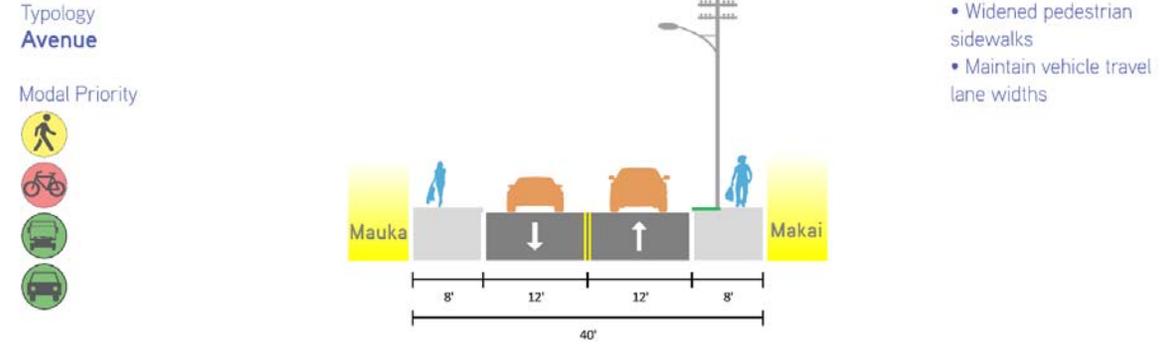
Typology
Avenue

Modal Priority

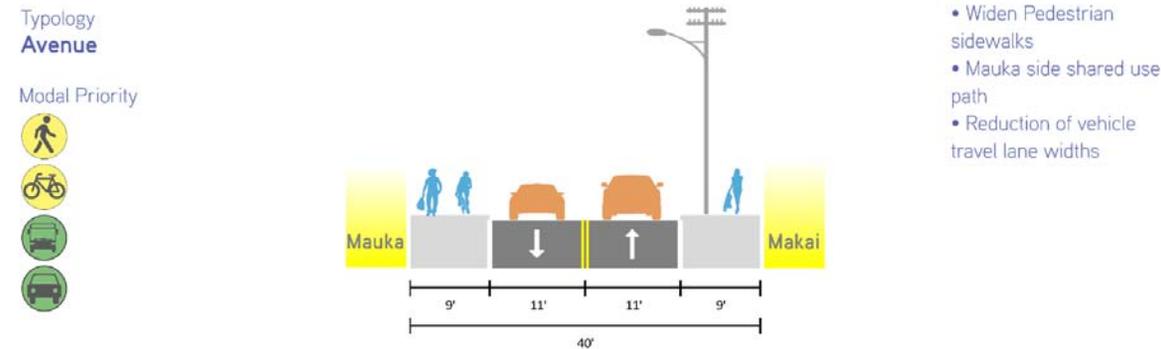


7 Oneawa St. between Wailepo Pl. and Olomana St.

PROPOSED ALTERNATIVE 1



PROPOSED ALTERNATIVE 2



Residential Land Use
 High
 Medium
 Low
 Limited
 Modal Priority

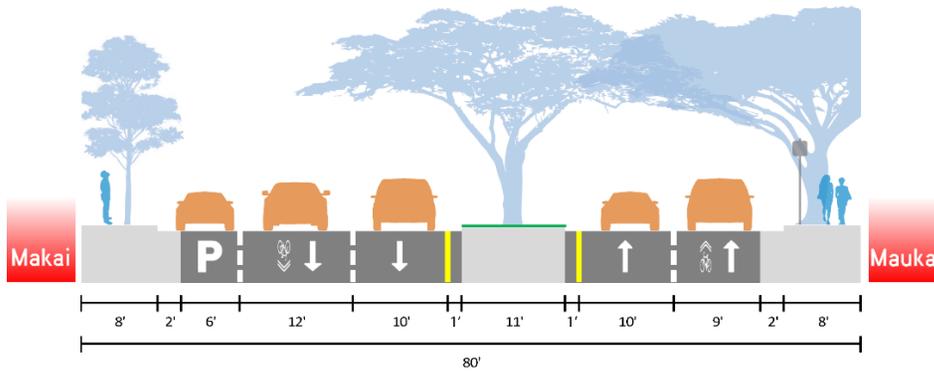


9 Kailua Rd. between Hahani St. and Kuulei Rd.

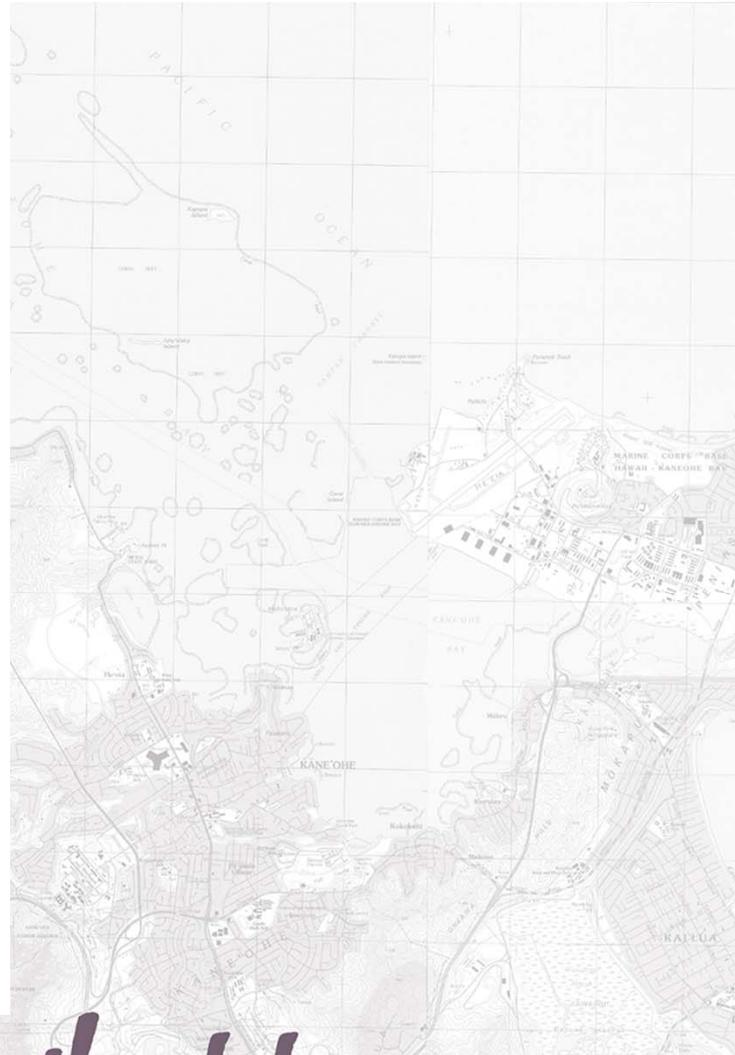
EXISTING / NO BUILD ALTERNATIVE

Typology
Main Street

Modal Priority



Commercial Land-Use High Medium Low Limited Modal Priority

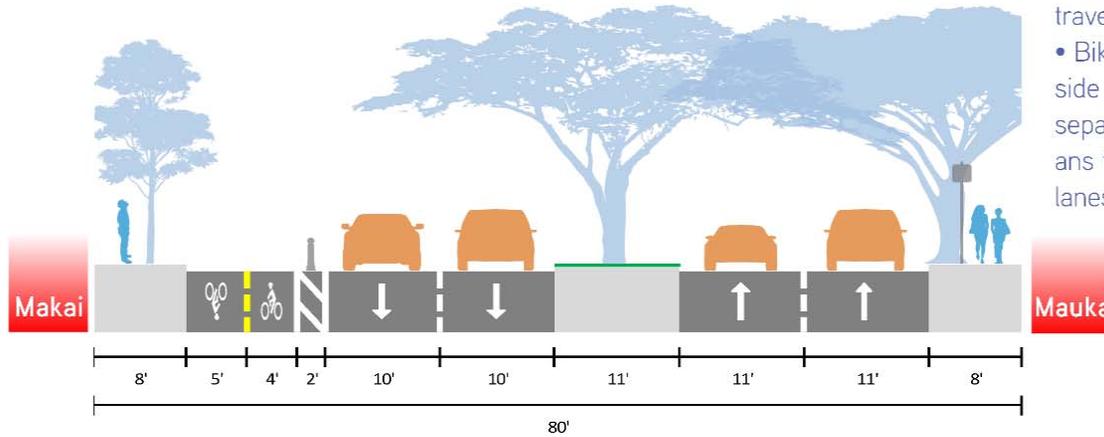


9 Kailua Rd. between Hahani St. and Kuulei Rd.

PROPOSED ALTERNATIVE 1

Typology
Main Street

Modal Priority



Commercial Land-Use High Medium Low Limited Modal Priority

- Buffered bike lanes on Makai side
- Requires removal of approximately 17 parking spaces
- Reduction of vehicle travel lane widths
- Bike lanes on Makai side provide additional separation for pedestrians from vehicle travel lanes.

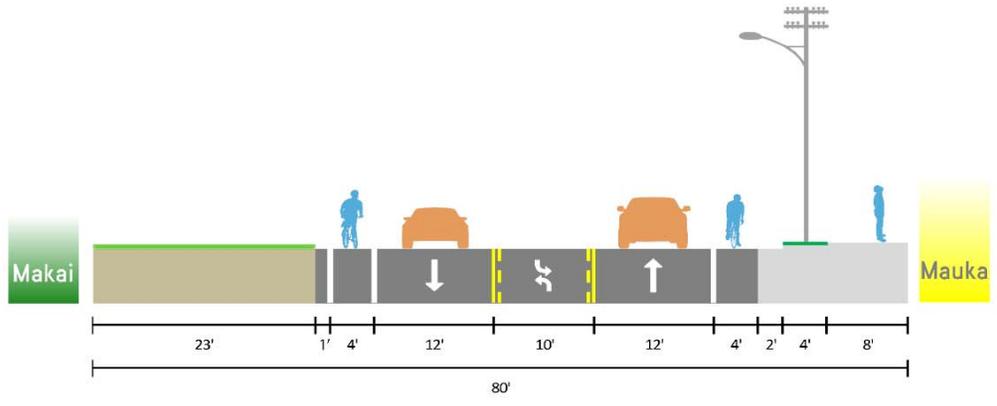


10 Kailua Rd. between Aoloa St. and Hahani St.

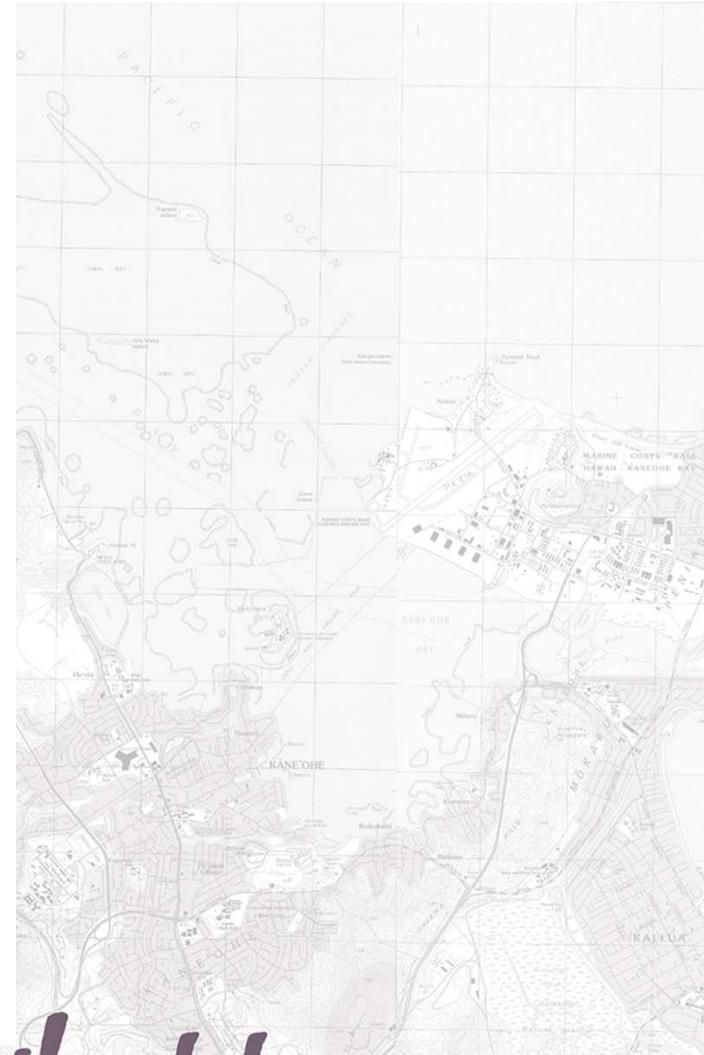
EXISTING / No BUILD ALTERNATIVE

Typology
Main Street

Modal Priority



■ Recreational Land-Use
 ■ Residential Land-Use
 High
 Medium
 Low
 Limited
 Modal Priority

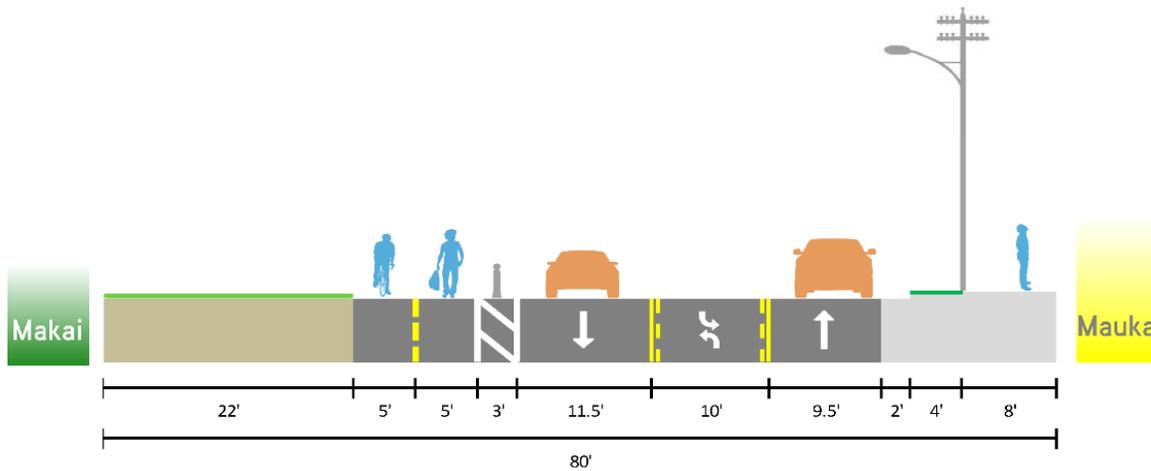


10 Kailua Rd. between Aoloa St. and Hahani St.

PROPOSED ALTERNATIVE 1

Typology
Main Street

Modal Priority



- Buffered bike lanes on Makai side
- Reduction of vehicle travel lane widths

Recreational Land-Use
 Residential Land-Use
 High
 Medium
 Low
 Limited
 Modal Priority

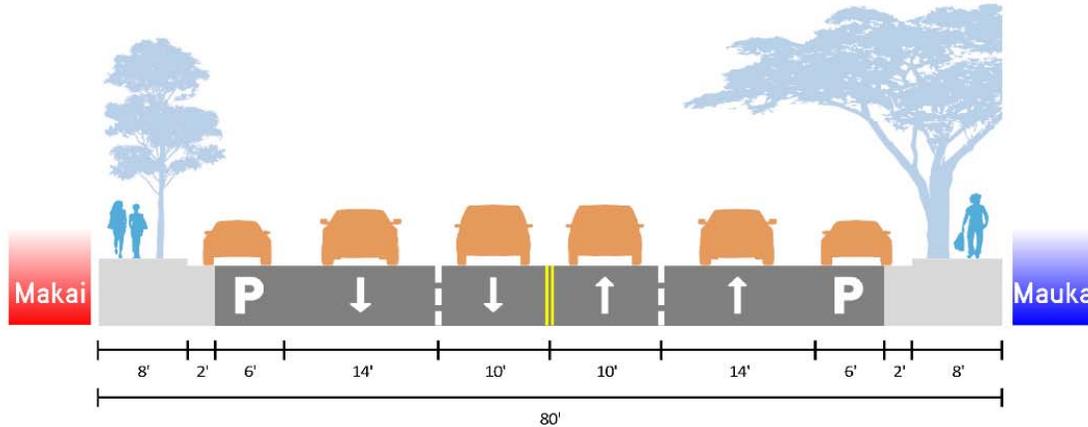


16 Kuulei Rd. between Kainalu Dr. and Oneawa St.

EXISTING / NO BUILD ALTERNATIVE

Typology
Avenue

Modal Priority



Commercial Land-Use Educational Land-Use High Medium Low Limited Modal Priority

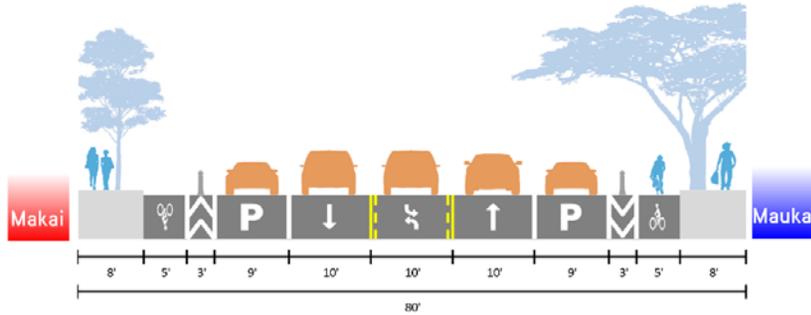


16 Kuulei Rd. between Kainalu Dr. and Oneawa St.

PROPOSED ALTERNATIVE 1

Typology
Avenue

Modal Priority

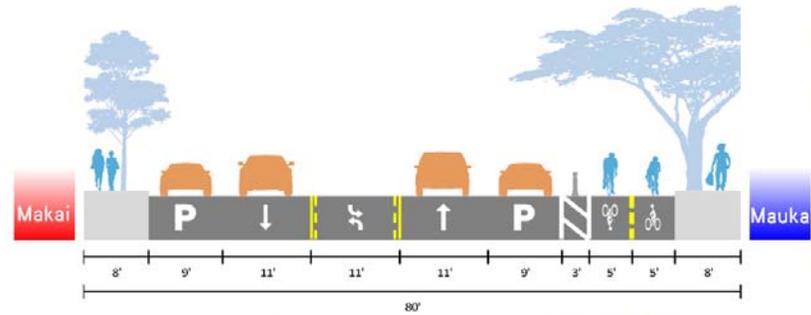


- One-way buffered bike lanes
- Requires removal of a travel lane
- Reduction of vehicle travel lane width on Makai side
- Bike lanes provide additional separation for pedestrians from vehicle travel lanes

PROPOSED ALTERNATIVE 2

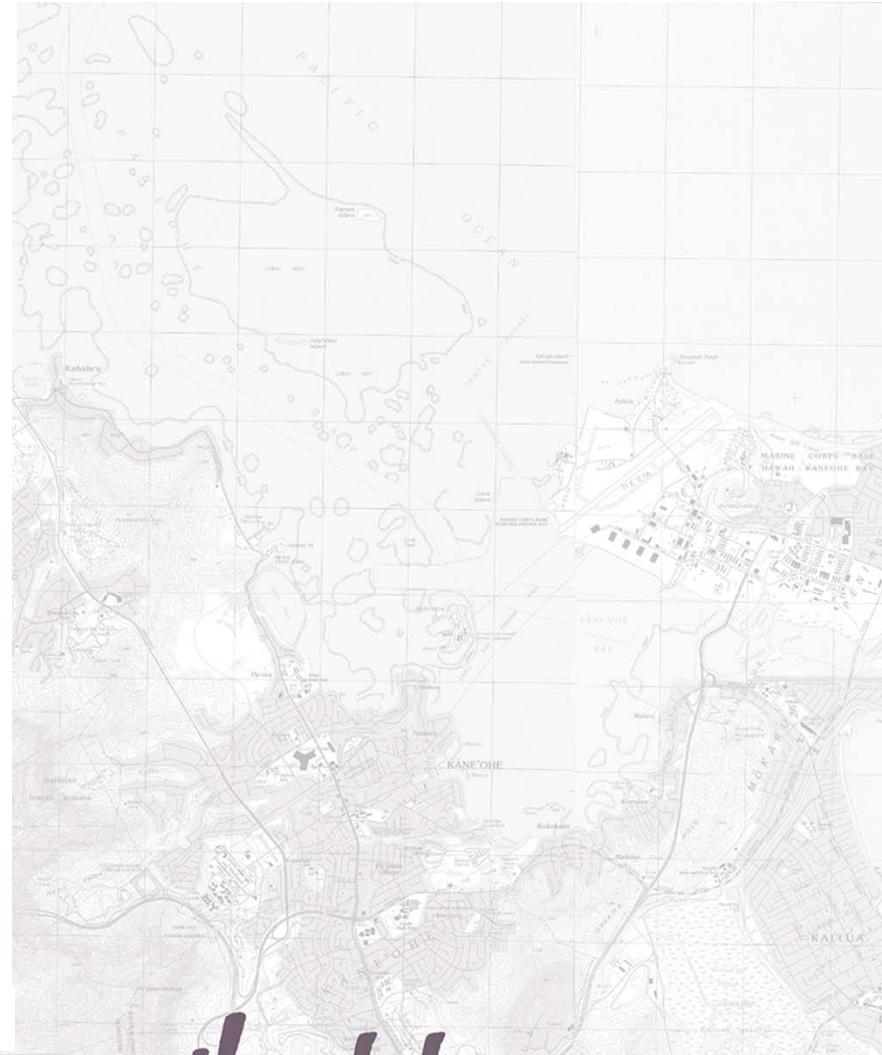
Typology
Avenue

Modal Priority



- Two-way buffered bike lanes
- Requires removal of a travel lane
- Reduction of vehicle travel lane width on Makai side
- Bike lanes provide additional separation for pedestrians from vehicle travel lanes on Mauka side

Commercial Land-Use Educational Land-Use High Medium Low Limited Modal Priority





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Questions

Honolulu / KAILUA COMPLETE STREETS





Group Exercises and Report Out

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Public Engagement Approach



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Kailua People (and Dogs)

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COMPLETESTREETS

We Want to Hear from You!



Neighborhood People Solve Problems

Neighbors can best:

- Mobilize residents
- Define the problems
- Develop ownership
- Identify the best tools
- Identify the best locations
- Achieve support
- Monitor level of success



INCREASING LEVEL OF PUBLIC IMPACT

Inform

Consult

Involve

Collaborate

Empower



Kailua Pop-Up Event (Farmer's Market)



Group Exercise

Annotate on maps:

- Locations where roads feel safe and not safe
- Roads that need improved bicycle facilities
- Roads that need improved pedestrian facilities, including ADA
- Locations of bus stop improvements
- Locations with traffic congestion
- Parking availability
- Ideas for Improvements
- Solutions
- Wayfinding Signs
- Lighting
- Trees





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Closing Remarks

Honolulu / KAILUA
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MAHALO!

Email us your thoughts at:

completestreets@Honolulu.gov

Visit the website at:

<http://www.Honolulu.gov/completestreets/kailua>

Where you can comment on the interactive map



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