

Complete Streets Honolulu

Kailua ■ Moili'ili ■ Aiea



Lapden

U.S. DEPARTMENT OF TRANSPORTATION
OFFICE OF THE SECRETARY

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*Mike Formby, Director Department of Transportation Services
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Department of Transportation Services Staff*

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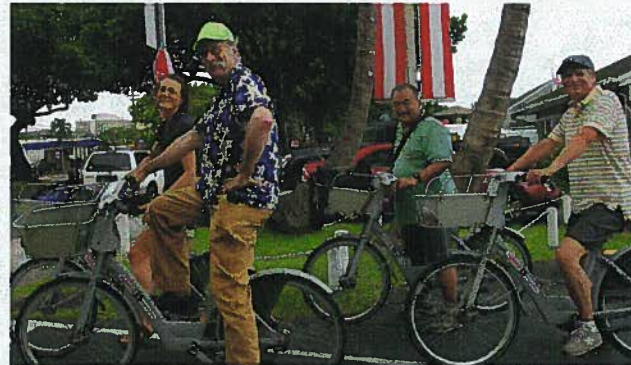
*Heidi Hansen-Smith, Project Manager, Healthy Hawaii Initiative
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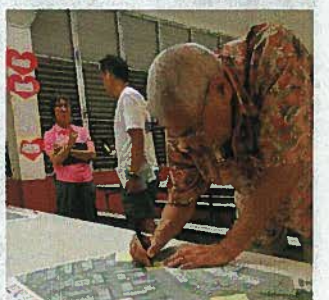
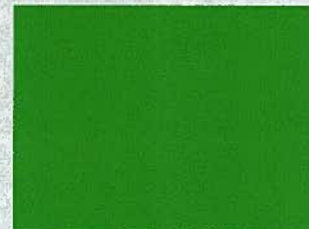
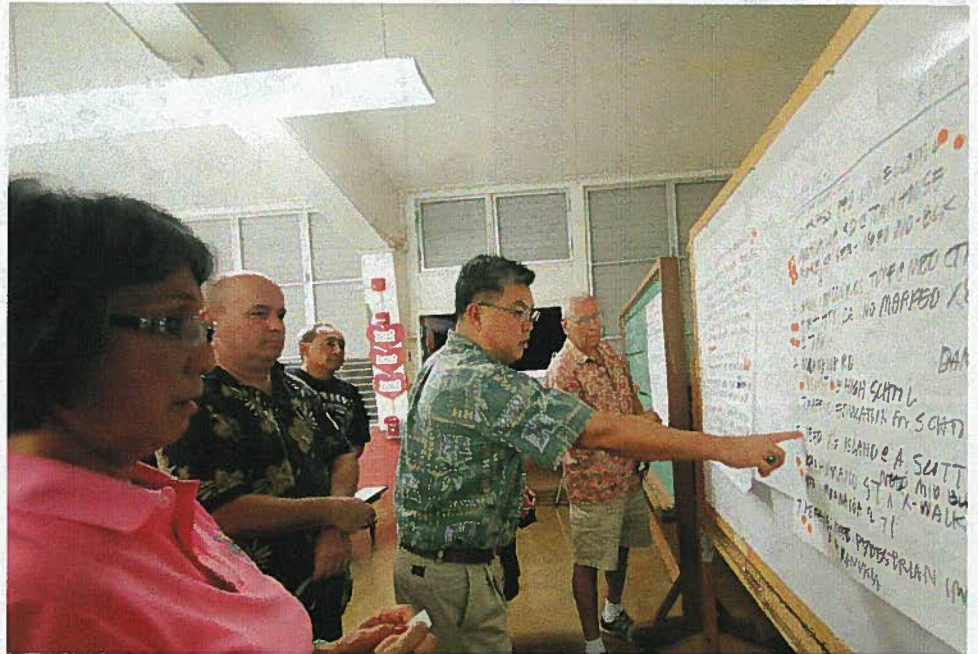
*Dan Burden, Co-Founder, Director of Inspiration and Innovation
Samantha Thomas, Project Coordinator*

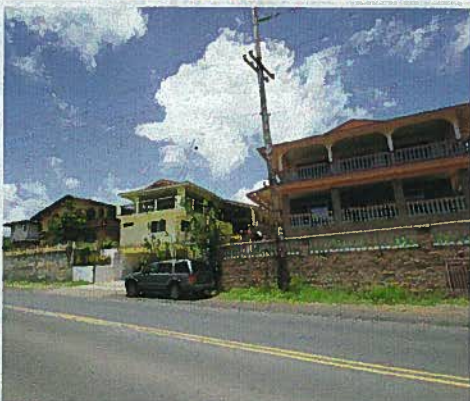
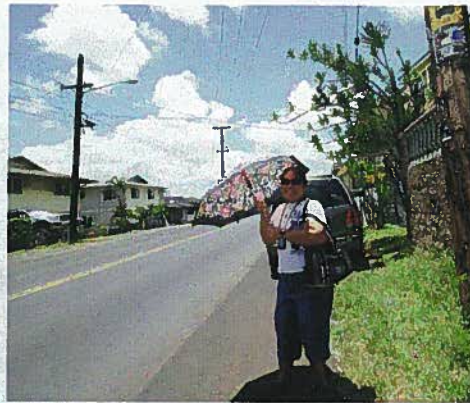


The following table lists the observations and recommendations for the Aiea area. The observations are based on the field visits and the community meetings. The recommendations are based on the observations and the community input.

Observations & Recommendations

Aiea





Aiea

Aiea has traditional suburban form. Aiea is divided from the shore of Pearl Harbor by Kamehameha Highway. The other major parallel highway, H-1, further bisects the town by dividing Aiea's main commercial districts and residential districts.

In many places in Aiea pedestrian and bicycle connections and infrastructure are missing. This includes sidewalks, safe crossings and marked bike lanes. Aiea has a beautiful 10 mile bike path, Pearl Harbor Bike Path, that runs along the shore of Pearl Harbor. Due to the lack of infrastructure to create more inclusive and safe streets many people have access to the park only by car.

Aiea is ready for transformation. Councilmembers Breene Harimoto and Carol Fukunaga are strong leaders advocating for improvements, as well as, residents including the fire department, police, Aiea Heights High School and Alvah Scott Elementary School principals. All who attended the community workshops addressed the need to create more accessible and safer streets for all people and all modes of transportation, understanding the value and benefits in completing the streets.

The following pages capture opportunities and recommendations based on observations made by Dan Burden and the Walkable and Livable Communities Institute along with input from Department of Transportation Staff and community residents who participated in the workshops.



Complete Streets

City and County of Honolulu
City Council
Transportation Committee

City and County of Honolulu
Department of Transportation Services

State of Hawaii
Department of Health

Walkable and Livable Communities Institute

SSFM International, Inc

Alae Neighborhood Study Area

Legend

-  Existing Pearl Harbor Historic Trail Shared Use Path
-  Proposed Bike-Path
-  Proposed Bike Lane
-  Proposed Sharrow
-  Intersection Opportunity Sites

Demonstration Project - Ulune Street

Ulune Street Existing Conditions



The pedestrian crossing across Ulune is 100 feet wide. A pedestrian would be exposed to traffic for over 22 seconds, while holding back motorists, where as a more compact design brings the exposure time down to 10 seconds.



Parking needs to be enforced through design so that vehicles cannot park in between the advance stop bar and marked crossing to improve sight lines for both motorists and pedestrians.

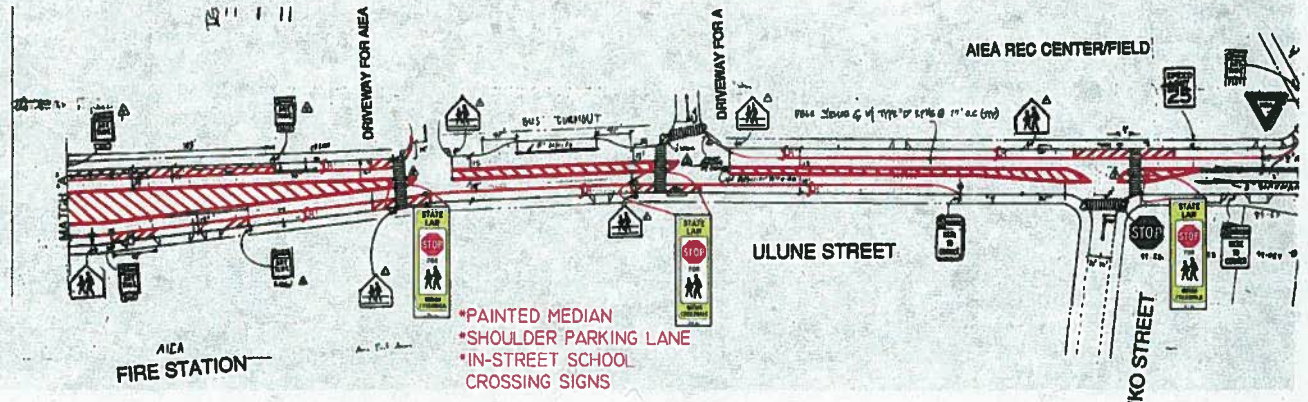
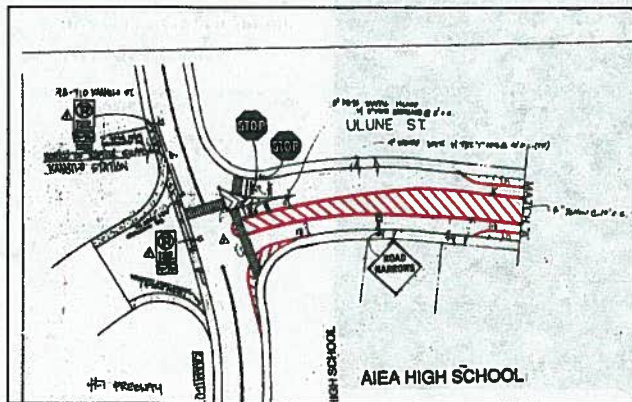


Williko Street crossing is located on the top of a steep downhill, causing many motorists to roll past the stop sign in order to see and make their turn onto Ulune Street. Williko Street is a short cut route to Alea Heights Drive that many students use at the end of the day.



The intersection of Ulune Street, Alea Heights Drive, and Honohono Street create a complex five-point intersection.

Proposed Changes



Demonstration Project - Ulune Street

Opportunities: Enhance Medians, Install Curb Extensions, Build Roundabouts, & Add Head-out Angled Parking

1 Enhance Medians

Painting the medians is a good first-step, as the demonstration project illustrates. However, at the intersection of Ulune Street and Kaamilo Street it was observed that many motorists ignore the paint as vehicles continuously went over the painted pork-chop island. In the short-term, paint colorized medians. Another short-term solution is to get planters and place them in the center of the painted median to further alert motorists that they are not to drive on these areas. Planters will also create vertical height and a sense of enclosure that will help bring down vehicle speeds. Mid- to long-term build landscaped median islands.

2 Install Curb Extensions

An important student crossing is at Ulune Street and Williko Street, over 50 students were observed crossing here during school release. It is important to build curb extensions to reduce the crossing distance for students and to narrow the road for vehicles, which will help motorists and pedestrians be more vigilant to one another. Curb extensions on the Williko Street side will also help better align motorists onto Ulune Street because the approach on Williko Street to Ulune Street is a short but steep grade, and currently many vehicles have to block the pedestrian crossing in order to see oncoming traffic.

3 Build Roundabouts

The intersection of Kaamilo Road and Ulune Street is overly wide and is up on a hill causing high vehicle speeds down Ulune Street. Ulune Street is 100 feet wide, causing long exposure time for students and people walking here. A roundabout will help create a safer intersection for all users.

Ulune Street/Alea Heights Drive/Honohono Street/Hakina Street all make up another complex intersection near Alea Heights High School. Many children were observed walking through this intersection on their route home from school. A roundabout should be studied at this five-point intersection.

4 Add Head-Out Angled Parking

Ulune Street widens near Kaamilo Road. The extra asphalt should be reallocated for head-out angled parking. Also called "back-in" or "reverse" angled parking, and it is proven the safest form of on-street parking. It offers multiple benefits, including creating a sight line between the driver and other road users when "un-parking." Additionally, head-out parking allows the driver to load their trunk from the curb, instead of adjacent to the travel lane. And for drivers with young children, seniors or others who need extra help, the open car doors direct passengers to the safety of the sidewalk behind the car, not into traffic. Getting into a head-out angled spot is simple—a driver signals their intention, slows, pulls past the spot and then backs into it, which is roughly equivalent to making only the first maneuver of parallel parking. (Watch a brief video about head-out angled parking at www.walklive.org.)



Priority Area Opportunities

*Choose Safer Intersection Treatments
Create Safe Routes to School
Complete Streets for All Modes*

Choose Safer Intersection Treatments:

The Modern Roundabout



- 1 The Keeaumoku Street roundabout in Honolulu is a local example of a roundabout that the City and County of Honolulu Department of Transportation Services has implemented.
- 2 This roundabout creates a gateway into the community with the sculpture in the center.
- 3 This roundabout creates a safer intersection treatment not only for the motorists, but also people on foot because the crossing distance is reduced, minimizing the time pedestrians are exposed to conflict.

The Federal Highway Administration and many state departments of transportation recognize the operational and safety benefits of utilizing modern roundabouts for intersections.

Studies show that roundabouts provide:

- 90% reduction in fatal crashes
- 75% reduction in injury crashes
- 30-40% reduction in pedestrian crashes
- 10% reduction in bicycle crashes

Increased Capacity & Reduced Delay:

- 30-50% increase in traffic capacity
- Because drivers can take advantage of any gaps in traffic flow, there is less overall delay

Lower maintenance costs:

- No signal equipment to install, repair and rebuild, which has a saving of \$13,000 to \$20,000 per year for every signalized intersection
- When storms or human error cause power outages, roundabouts still function

Environmental benefits:

- There is a reduction in pollution and fuel use
- There is less noise due to fewer stops and starts

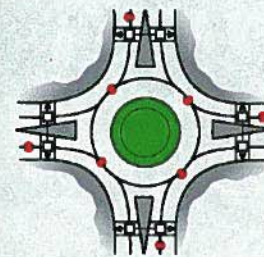
Aesthetics:

- Roundabouts can improve the visual quality and character through landscaping, sculptures and other gateway features that celebrate place

Vehicle speeds (under 25 mph):

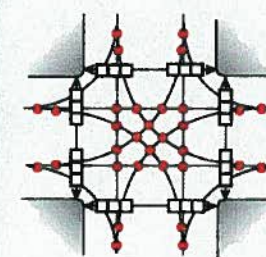
- Drivers have more time to judge and react to other vehicles and pedestrians
- Conditions are easier for older and novice drivers
- Businesses have more exposure
- There is a reduction in the severity of accidents if they do occur
- All modes are safer and integrate better
- A gateway is formed which establishes place and provides traffic calming benefits

To learn more, visit the Federal Highway Administration's Proven Safety Countermeasures website at: http://safety.fhwa.dot.gov/provencountermeasures/fhwa_sa_12_005.htm



- Conflicts at a single-lane, modern roundabout
- 8 vehicle-to-vehicle conflicts
 - 8 vehicle-to-person conflicts

The Whitehurst/Leahy Commuter Institute and Alameda Street Design



- Conflicts at a conventional intersection with single lanes in each direction
- 32 vehicle-to-vehicle conflicts
 - 24 vehicle-to-person conflicts

The Whitehurst/Leahy Commuter Institute and Alameda Street Design

Choose Safer Intersection Treatments

Ulune Street & Alea Heights Drive Street Existing Conditions



Alea Heights Drive has four travel lanes in total. This section above the H-1 has a nice buffered landscape sidewalk zone.



The new Alea Heights Library is currently under construction at this location. Choosing safer intersection treatments, such as a roundabout (envisioned below), has many benefits, including creating a gateway into the library.

Given the operational difference and benefits between a roundabout and a signalized intersection, consider a roundabout at this intersection of Alea Heights Drive. Alea Heights drive is an important corridor in Alea and will continue to become a community hub with the new library that is being built here, and will become an even more highly used route for students after school.

Recommendation



To further support a roundabout at the Alea Heights Drive intersection at the site of the new library, the segment of Alea Heights Drive from this intersection to Moanalua Road should undergo a road diet. A road diet would help create a more compact street and allow for lanes to be converted into bike lanes or on-street parking with tree wells to help cool and calm the street. It is also important to note that a curb cut has been made on the bridge over the H-1 on the Olopana Street side, but there is no marked crossing. This is an issue because many students use this as a sign that it is okay to cross here and then many cars set up a multiple threat crash when they stop to let children cross. This is a great opportunity for a partnership with the Hawaii State DOT to work on a complete streets project together.

Create Safe Routes to School

Mid-Block Crossing

There is a need to establish safer crossing environment for pedestrians and cyclists across Moanalua Road. High visibility markings and pedestrian refuges on medians are a first step. Where pedestrians demonstrate a need for mid-block crossing along Moanalua Road, near Alvah Scott Elementary School is a great place to start and needs to be a priority area for making these improvements.

Mid-block crossings are used between intersections, typically when blocks are long, or in other locations where speeds are higher than desired, or where sight distances are poor. Pedestrian crossing islands are one of the best tools to simplify crossing wide streets. Used with curb extensions, they get pedestrians out beyond parked cars and other visual obstructions. Crossing islands are used on all categories of streets, and they have their highest return on investment when they create more courteous yielding behaviors by motorists. The basic principle behind a median island is the pedestrian crosses half the roadway at a time, simplifying the task of assessing an adequate gap, making the crossing much safer. Pedestrian looks left, crosses to the island, looks right, crosses 2nd half. Much easier than finding a gap long enough to cross all at once. Well designed crossing islands achieve yielding rates above 80 percent.



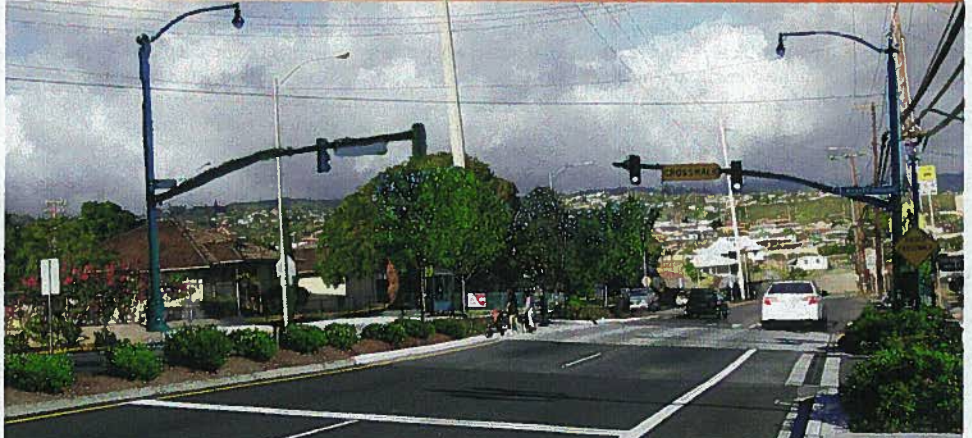
- 1 On Bridgeport Way in University Place, WA a mid-block crossing breaks the crossing distance for pedestrians into two segments, reducing exposure time.
- 2 A mid-block crossing on La Jolla Boulevard in Birdrock, CA uses pedestrian activated signals to notify motorists that a pedestrian is present and ready to cross.
- 3 A mid-block crossing in Honolulu, HI creates safer crossing distances outside a school.

Moanalua Road Existing Conditions



Many individuals and families were observed running across Moanalua Road. This is a difficult crossing for someone on foot, five travel lanes need to be crossed and with not advance stop bar if a motorist stops too closely to the crosswalk a multiple threat crash is set up.

Recommendation



This conceptual photo vision illustrates the potential to enhance this mid-block crossing with a landscaped median that provides a pedestrian refuge, advanced stop bars and a pedestrian activated signal.

Complete Streets to Support All Modes

Cycle Tracks & Bike Lanes

Moanalua Road has wide travel lanes. Right-size the lanes by moving paint. In phase one add buffered bike lanes to both sides of the street.

One of the most cost effective ways to reduce speed—while improving overall vehicular flow and creating improved conditions for bicycling and walking—is the conversion of overly wide roads to bike lanes. Generally, travel lanes can be reduced to 10 feet. Narrower travel and storage lanes are proving to be slightly safer. Motorists appear to become more attentive when lanes are narrowed from 11-12 feet to 10 foot travel lanes. Bike lanes should be at least 5 feet wide and seamless. Thick striping and regular markings remind drivers to anticipate bicyclists. Two foot painted buffers can also be used to enhance driver vigilance and create more space between bicycles and vehicles. Bike lanes have an added benefit to pedestrians in that they provide a buffer to moving traffic.

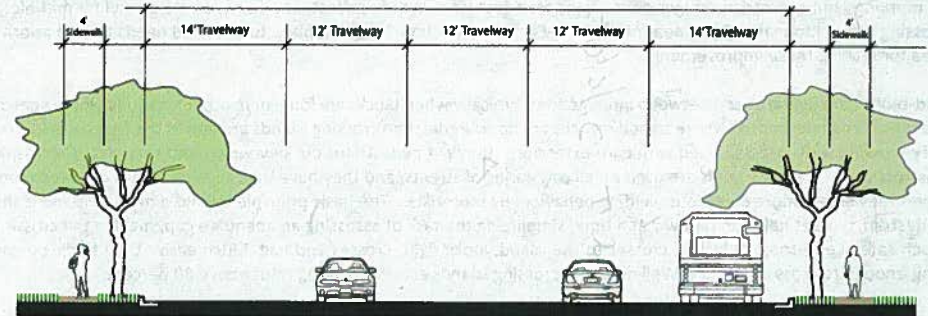
Then a second phase project can be to add a cycle track to the mauka side.

A cycle track is a bike-only separated facility that runs alongside a street and is physically separated from vehicles and distinct from the sidewalk. Unlike bike lanes, cycle tracks are typically separated from automobile traffic by a physical barrier, such as parked cars, bollards, a landscaped buffer or a curb.

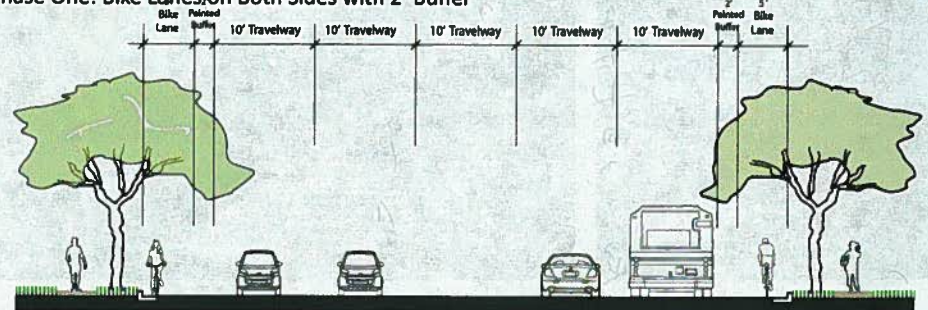
Cycle tracks may be one-way or two-way, at street level or raised to sidewalk level. If a raised cycle-track at sidewalk level, a curb or median typically separates them from traffic, while different pavement color and textures separates the cycle track from the sidewalk and points of conflict, such as driveways or street crossings. The separation of bicyclists from vehicles with a cycle track helps make riding a bike more comfortable part of daily life for everyone. Cycle tracks help eliminate perceived risk and fear of collisions of bicyclists; reduce the risk of dooring crashes; and add a level of predictability making streets safer for everyone.

To learn more, visit the Federal Highway Administration's Bicycle & Pedestrians website at: http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/sidewalk2/sidewalks214.cfm, the [NACTO Urban Bikeway Design Guide](#), and [ASSHTO Guide for the Development of Bicycle Facilities 2012](#).

Existing Condition



Phase One: Bike Lanes, on Both Sides with 2' Buffer



Phase Two: Raised Cycle Track on Mauka Side of Moanalua Road

