Making Liliha Street and Nuuanu Avenue more Multimodal
Project Team

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10) BJ Brown, SSFM International, Design Engineer, CAD Specialist
01 Complete Streets Program Overview
What Are Complete Streets?

- Safe and accessible 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
  - Equity
  - Sustainability
  - Economic Development
Complete Streets Solutions: Design/Target Speed

A goal of complete streets is to establish a target speed that creates a safe environment for motorists, people on foot, and people on bicycles. Streets should be designed for the target speed, which aims for the desired speed at which we want motorists to operate.

Target speed should be based on the street context and typology. Most City streets should be designed to a target speed that does not exceed 25 mph.

Nuuanu Avenue
Liliha Street
Complete Streets Solutions: Roadway Design
Complete Streets Solutions: Road Diets

**WHY Road Diet?**

- **Improved Safety**
  Road Diets reduce vehicle-to-vehicle conflicts that contribute to rear-end, left-turn, and sideswipe crashes.

- **Operational Benefits**
  1. **Separating Left Turns.** Separating left-turning traffic has been shown to reduce delays at signalized intersections.
  2. **Side-street Traffic Crossing.** Side-street traffic can more comfortably enter the mainline roadway because there are fewer lanes to cross. This can reduce side-street delay.
  3. **Speed Differential Reductions.** The reduction of speed differential due to a Road Diet provides more consistent traffic flow and less "accordion-style" slow-and-go operations along the corridor.

- **Pedestrian and Bicyclist Benefits**
  The space released by removing one lane can be converted to other uses such as bike lanes, sidewalk extensions and/or wider vehicle lanes.
Complete Streets Solutions: Pedestrian Safety

- Rapid Flashing Beacons
- Corner Bulbouit
- All-Way Pedestrian Crossing
- Raised Crossing with Landscaped Median
Complete Streets Solutions: Bikeways

Two-Way Protected Bike Lane

Bike Lane and Box

Bike Lane

Bike Boulevard
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 Program Administrator Hired

Planning
- Oahu Bike Plan Update
- Oahu Pedestrian Plan

Initiatives
- Bike Network 2020
- Bike Share

Implementation
- South Street Protected Bike Lane
- McCully Street Bike Lanes
- Kamehameha IV Road Diet
- Downtown/Chinatown Complete Streets
The Opportunity: Urban Honolulu is Transforming

✓ Rail
✓ Transit Oriented Development
✓ Housing Crisis
✓ Increased Density
✓ Infrastructure Improvements
✓ Bike Share
Project Overview

- **Project Area:**
  - Nuuanu Ave. between School St. and Pali Hwy.
  - Liliha St. between School St. and Wyllie St.

- **Purpose:**
  Identify and implement complete streets solutions that are context sensitive and make the area more safe, inviting, and accommodating to all users. This will be done using current data, modeling, technical expertise, and community input.
**Project Tasks**

**TASK 1**  
DATA COLLECTION & MULTIMODAL ASSESSMENT  
- Review prior studies  
- Data Collection  
  - Ped/Bike/Vehicle Counts at 13 intersections  
  - Collision Data  
- Multimodal Analysis  
- Recommendations Report  

June 2017-January 2018

**TASK 2**  
CONTEXT SENSITIVE SOLUTIONS  
- Neighborhood Boards Presentations  
- Advisory Group  
- Stakeholder Outreach  
- Walking Audits  
- Community Meetings  
- Website & E-mail list  

May 2017-February 2018

**TASK 3**  
ENVIRONMENTAL REVIEW & CONCEPTUAL DESIGNS  
- Topographic Survey  
- Conceptual Designs  
- 30% Design Plans  
- Environmental Review and Compliance  

September 2017-April 2018
Advisory Group, Public Outreach and Walking Audits
Public Process

Community Events
Advisory Group Input
Walking Audits
Stakeholder Meetings
Neighborhood Board Presentations
Getting the Word out: Stakeholders

- Homes
- Condo Owners/Associations
- Senior Living
- Preschools & Childcare
- Public / Private Elementary and Secondary Schools
- Shopping centers
- Small businesses
- Commercial office buildings
- Medical Centers
- Social Services
- Churches
- Cemeteries

Residents

Schools

Businesses

Services/Destinations
Project Advisory Group

- Hawaii Baptist Academy
- Kawananakoa Middle School

- Hoopono Service for the Blind
- Lanakila Pacific
- We are Oceania

- Nuuanu Neighborhood Security Watch
- Senior Population
- Craigside residents
- Nuuanu and Liliha Residents

- Nuuanu Neighborhood Board
- Liliha Neighborhood Board

- Kuakini Medical Center
- St. Francis
- Finance Factors
- Rehabilitation Hospital of the Pacific

Hono(hu)/Liliha&Nuuanu
COMPLETESTREETS
Walking Audits: September 6, 2017

Participants: Representatives of 16 Community Organizations

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5. Comments - At Liliha segment mauka of School:

<table>
<thead>
<tr>
<th>Negative features*</th>
<th>Positive features*</th>
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<tbody>
<tr>
<td>Crazy left turn</td>
<td>+ Awnings</td>
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<tr>
<td>Bad access into corner shopping</td>
<td>+ Variety of businesses/ destinations</td>
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<tr>
<td>Abandoned stores, feels like it’s dying, not active</td>
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<tr>
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<tr>
<td>A lot of traffic turning from Kuakini to Nuuanu</td>
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<tr>
<td>A lot of driveways</td>
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<tr>
<td>Parked cars encroach on sidewalk</td>
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<td>No curb</td>
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CompleTestreets
Stakeholder Outreach

Meetings & Correspondence with Elected Officials
- Councilmembers Fukunaga, Manahan
- Representative Ohno
- Representative Luke
- Senator Rhoads
- Former Senator Chun Oakland

Neighborhood Board Presentations
- Nuuanu/Punchbowl No. 12 (May & November)
- Liliha No. 14 (May & November)

Meetings with Community Organizations
- Kawananakoa Middle School (11/3)
- Hoopono Services for the Blind (11/21)
- Lanakila Senior Center (11/1)
- Lunch and Learn with Churches/Preschools (12/5)
- Nu’uanu Condo Associations & Owners Meeting (12/5)
# Business Outreach

## Liliha Street

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<tr>
<th>Business or Building</th>
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<tbody>
<tr>
<td>McDonald's Liliha</td>
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<tr>
<td>Vapors Paradise</td>
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<tr>
<td>Jay's Café</td>
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<tr>
<td>New Mui Kwai Restaurant</td>
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<tr>
<td>Chinese Lutheran Church of HNL</td>
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<tr>
<td>Liliha Bakery</td>
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<tr>
<td>Longs Pharmacy</td>
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<tr>
<td>Kongko Mission Church</td>
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<tr>
<td>Honolulu MED Spa</td>
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<tr>
<td>Foodland</td>
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<tr>
<td>Jalea</td>
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<tr>
<td>Always Flowers</td>
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<td>Naka Travel</td>
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<tr>
<td>State Farm</td>
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<tr>
<td>Kuakini Medical and Dental FCU</td>
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<td>Cyber Life PC</td>
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<td>Creations By You</td>
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<td>Finance Factors</td>
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## Nuuanu Avenue

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<th>Business or Building</th>
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<tbody>
<tr>
<td>Nuuanu Shopping Plaza / Starbucks</td>
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<tr>
<td>Walgreens</td>
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<tr>
<td>Nuuanu Laundry</td>
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<tr>
<td>7/11 Nuuanu – both locations</td>
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<tr>
<td>Bangkok Chef</td>
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<tr>
<td>Aloha Sushi Nuuanu</td>
</tr>
<tr>
<td>Tohoku Travel Service</td>
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<tr>
<td>Yagura Restaurant</td>
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<tr>
<td>L&amp;L Hawaiian BBQ</td>
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</table>
Purpose of the first community meeting: to share preliminary concepts.

Purpose of the second community meeting: to share the revised designs and describe how input informed the revisions.
Plan Review & Comments

• Residents encouraged to share their comments – and to let us know what they like, and what still needs to be addressed
• Plans for 2-3 alternatives were presented
03 Multimodal Assessment
Multimodal Assessment
- Review of Prior Studies
- Data Collection/Analysis
  - Vehicle/Pedestrian/Bicycle Counts
  - Crash Data
  - Transit Data
  - Level of Service Analysis
    - Bicycle
    - Pedestrian
    - Vehicle
    - Transit
- Community Input
  - Walking Audits
  - Advisory Group Input
## What We Heard: Community Input

### EVERYONE
- Sentimental attachment to the traditional old feel of the neighborhood.
- Concern about “cut through” traffic from other areas.

### Schools
- Safety for students walking.
- Traffic flow during drop-off and pick-up hours.
- Parking during school events.

### Social Services
- Pedestrian safety for elderly and visually impaired users, on sidewalks and at crossings.
- Transit access.

### Businesses
- Availability of street parking for customers.
- Revitalization and beautification of Liliha Street.
- Need for employee parking.

### Medical Centers
- Pedestrian safety for patients, some of whom are mobility challenged.
- Need for traffic calming.

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## What We Heard: Community Input

### Neighborhood Boards
- Support for multimodal improvements and bike lanes on Liliha Street.
- Concern about removing street parking on Nuuanu.
- Prioritize pedestrian and traffic flow improvements on Nuuanu.
- Retain the large tree on the Nuuanu Stream bridge, route the sidewalk around it.
- Coordinate planned road work to minimize traffic impacts.

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### Senior Population
- Safer crossings with beacons or signals.
- Crossings and bus stops conveniently located.
- Improve sidewalk quality, remove obstructions.
- Homeless population under bridge on Nuuanu. Area is dark and unsafe at night.

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### Condominium Associations
- Retain street parking.
- Some buildings do not provide visitor parking or loading areas on site.
- Retain access by emergency vehicles.
- Address morning peak-hour traffic congestion.

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### Other Residents
- Address speeding during off-peak hours.
- Lanes too narrow for buses in some places.
- Need wide and consistent sidewalks with more buffer from cars.
- Improve visibility of intersections and slow turning cars.
- Provide more shade, especially on Liliha.
- Biking is dangerous, would be improved by a lane or route.
- Bring bike share to business zones and around condos.
- Address visibility hazards created by on-street parking.

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Liliha Street Preliminary Findings & Draft Concepts
Issues & Concerns

- Degraded sidewalks with uneven pavement
- Narrow sidewalks
- Encroachment by walls and fences
- Changing materials and varied textures
- Utility and sign poles take up already limited sidewalk space
Overgrown vegetation

Blockage by trash cans
Issues & Concerns

Unprotected street crossing endangers pedestrians
Lack of Green Space, no shade

Vehicle capacity is higher than auto demand

Utility poles and wires are a dominant and unattractive feature of the view
Vehicles have narrow lanes, especially on Mauka end.

Lanes are not even wide enough for buses, they reportedly knock down trash cans with their rear view mirror.
Issues & Concerns

Unpredictable parking:
Drivers are unsure when or whether they can use the outer lanes

Vision is blocked by hedges, trees, fences and cars parking on street
Bicyclists feel unsafe and are biking on the sidewalk.
**Demonstration section (Existing)**

- 5’ sidewalk with 2’ space for Utility poles
- 10’ Parking lane/Through Lane
- 10’ Through Lane
- 10’ Through Lane
- 18’ Parking lane/Through Lane
- Existing Parking Spots

**Curb extensions with street trees to retain parking**

- Extend sidewalk 2’-3’
- 8’ Parking
- 10’ Through Lane with sharrow
- 10’ Two-way left turn lane
- 10’ Through Lane
- 5’ bike lane
- Add street trees and landscape stripe
- Pull out area for buses to get out of traffic flow

**Curb extension to shorten pedestrian crossing distance**

- Refuge island to provide protection for crossing pedestrians

**Refuge island to provide protection for crossing pedestrians**

**Curb extensions with street trees to retain parking**

**Demonstration section (Proposed)**

- 5’ sidewalk with 2’ space for Utility poles
- 10’ Parking lane/Through Lane
- 10’ Through Lane
- 10’ Through Lane
- 18’ Parking lane/Through Lane

**Curb extensions with street trees to retain parking**

- Extend sidewalk 2’-3’
- 8’ Parking
- 10’ Through Lane with sharrow
- 10’ Two-way left turn lane
- 10’ Through Lane
- 5’ bike lane
- Add street trees and landscape stripe
- Pull out area for buses to get out of traffic flow

- Curb extension to shorten pedestrian crossing distance
- Refuge island to provide protection for crossing pedestrians

- Curb extensions with street trees to retain parking
Nuuanu Avenue Preliminary Findings & Draft Concepts
Sidewalks are blocked by trees and other obstructions.
Multi-lane mid-block street crossings need safety enhancements.
Issues & Concerns

On street parking is in demand

On street parking impedes sightlines for vehicles exiting Craigside Place
Issues & Concerns

Pavement condition is poor
Bicyclists sometime use the sidewalk.

Lack of bike facilities, two crashes occurred 2014-2016, one fatal and one serious injury.
Issues & Concerns

Utility poles and lines are a dominant and unattractive feature.

Sidewalks, especially at the Mauka end, are narrow, missing in long segments.
There are no sidewalks on Judd St

Missing sidewalk increases pedestrian exposure to turning vehicles
Issues & Concerns

The intersection of N Kuakini St has heavy traffic use and high pedestrian use by school children.
Draft Concepts

Demonstration section (Existing)

- 6’ sidewalk with 2’ space for Utility poles
- 10’ Through Lane
- 10’ Through Lane
- 10’ Turn Lane
- 12’ Through Lane

Existing Parking Spots

Demonstration section (Proposed)

- Refuge island to provide protection for crossing pedestrians
- Extend sidewalk 2’-3’
- Add street trees and landscape stripe
- 10’ Turn lane
- 10’ Through Lane with sharrow
- 10’ Turn lane
- 10’ Through lane
- 10’ Bus/Bike only lane

10’ Parking/Travel lane (Parking except 7-9am)
Draft Concepts

Intersection alternatives

Alternative 1 (Roundabouts)

Nuuanu Ave/Pauoa Rd

Nuuanu Ave/Judd St

Nuuanu Ave/Wyllie St

Alternative 2 (Signalized intersections)

Nuuanu Ave/Pauoa Rd

Nuuanu Ave/Judd St

Nuuanu Ave/Wyllie St
04 Recommended Application of Complete Streets Concepts
Speed and Pedestrian fatalities

Hit by a vehicle traveling at 20 MPH
9 out of 10 pedestrians survive.

Hit by a vehicle traveling at 30 MPH
5 out of 10 pedestrians survive.

Hit by a vehicle traveling at 40 MPH
only 1 out of 10 pedestrians survives.
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**Street Name**
- **Nuuanu Ave**
  - **Direction**: East Bound
  - **Percentiles**:
    - 15th: 26
    - 50th: 31
    - Average: 31
    - 85th: 35
    - 95th: 39
  - **ADT**: 3976

- **Nuuanu Ave**
  - **Direction**: West Bound
  - **Percentiles**:
    - 15th: 26
    - 50th: 32
    - Average: 32
    - 85th: 38
    - 95th: 40
  - **ADT**: 5298
Sidewalk extension with street trees and landscape strip

Curb extension to shorten pedestrian crossing

Retain on-street parking

Install raised median island for improving crossings

Mauka-bound bike lane

Center left turn lane

Travel lane with sharrow
Nuuanu Ave Proposed Improvements Alternative 3

Legend:
- Signalized Intersection
- Stop Sign
- Bus Stop
- Fire Hydrant
- Retain existing parking spot
- Removed existing parking spot
- New parking spot
- Existing Curb Line
- Roadway (Gray) with Crosswalk and Stop Lines (Bold White)
- Bike Lane
- Bike Sharrow
- Raised Median with Landscaping
- Sidewalk (Orange) with Driveway (Redlines)
- Landscape strip (green) with street tree
- Street tree with tree well
- Existing Tree
Sidewalk extension with street trees and landscape strip

Curb extension for pedestrian to go around the tree and to shorten pedestrian crossing

Install raised median island for improving crossings

Retain on-street parking
Questions?
MAHALO

ADDITIONAL INFORMATION

completestreets@honolulu.gov
slebrun@ssfm.com