Concept Designs for State Parcels in Pouhala TOD (Waipahu, HI)

University of Hawaiʻi at Mānoa
Courses: Environmental Planning & Site Planning (Fall 2017)
Proof of Concept Research, Planning, and Design Study
Graduate Student Work
Scope of Work

PLAN 620: Environmental Planning and Policies
Hazards assessment: past, present, future conditions of Waipahu

PLAN 678: Site Planning
Site analysis, stakeholder interviews, conceptual plans for state owned lands

Three Conceptual Plans for 6 State owned lands in Pouhala TOD Station

PLAN A: FLOW

PLAN B: W.A.I.

PLAN C: Health & Wellbeing
Pouhala Station & State Parcels Field Visits
Waipahu
In Context
Analysis: Waipahu’s Past 1897 - 1995

Hawaii Plantation Immigration 1850s - 1940s

400,000 immigrants arrive in Hawaii, including

- 180,000 Japanese
- 25,000 Filipino
- 180,000 Chinese

Waipahu Population Timeline

- 977 pre-plantation
- 7,169 mid-plantation
- 51,295 at mill closure

Sources: Historic Hawaii Foundation, Tina Quizon
## Analysis: Waipahu Today

<table>
<thead>
<tr>
<th>Waipahu</th>
<th>Honolulu County</th>
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<tbody>
<tr>
<td>41,000 residents</td>
<td>1,000,000 residents</td>
</tr>
<tr>
<td>46% non-native English speakers</td>
<td>25% non-native English speakers</td>
</tr>
<tr>
<td>$530,000 median property value</td>
<td>$630,000 median property value</td>
</tr>
<tr>
<td>4 cars per home</td>
<td>2 cars per home</td>
</tr>
<tr>
<td>54% drive to work</td>
<td>64% drive to work</td>
</tr>
<tr>
<td>20.9% use public transit</td>
<td>8.4% use public transit</td>
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</tbody>
</table>

Dataset: ACS 5-year Estimate, 2015 Source: Census Bureau
Analysis: Waipahu Future
Analysis: Pouhala Station Study Area

**Area Overview**

1. Project Site (Civic Center)
2. Wailani Canal
3. Waipahu Transit Station (Pouhala Station)
4. Waipahu Depot Street
5. Waipahu Sugar Mill (YMCA)
6. Hawai‘i’s Plantation Village
7. Hans L’Orange Park
8. Waipahu District Park
9. Pearl Harbor Historic Trail

**Legend**

- Existing Pedestrian Path
- Proposed Pedestrian Path
- Bike Path/Route
- Bus Route
- Vehicular Road
- Land Use
  - Landmark
  - Project Site
  - Parks/Museum
  - Existing Commercial

Map annotations include distances in 1/4 Mile and 1/2 Mile increments.
Waipahu: Planning for TOD

Site Type: Mixed-Use Village

- Village Level: lower-density mixed-use
- Transit center node: higher-intensity
- Walkable
- Neighborhood retail
- Commercial or educational core
- Historic character retained and strengthened

Source: City and County of Honolulu TOD Report Aug 2017
Pouhala TOD Study Area

Core Themes

- Preservation of social services
- Increasing walkability
- Interactive community engagement
- Access to open space
- Addressing flooding
- Increasing or maintaining affordable housing

Source: Google Maps
Study Area Parcels

DLNR/DAGS
- Civic Center
- Waipahu Library

HHFDC
- Bus Station
- Parking Lot

HPHA
- Open Space/Canal Fence
- Elderly Housing
Plan A: Flow

Source: https://thinkinginsomniac.wordpress.com/2011/04/07/architecture-sketch-museum-of-contemporary-art-helsinki/
Plan A: Flow

**Intergenerational Interaction**

- Flood Mitigation
- Preservation of Social Services
- Parking
- School Accommodation
- Density
Hawaii Exploratorium

**Intergenerational Interaction**

- Signature building
- Recreation venues
- Creates jobs

Source: https://img.grouponcdn.com/deal/w3fXkRG95QGxoTjt8RSf/Yz-440x267/v1/c700x420.jpg
School Accommodation

Intergenerational Interaction

- Hawaii Exploratorium is an adaptable building
- Vertical school possibility
- Built with the present in mind, but capable of handling the future

Plan B: W.A.I.

Wailani Place celebrates the intertwining of water, history, and culture by providing a free-flowing green space to connect and rejuvenate the community.

Placemaking

<table>
<thead>
<tr>
<th>Place Names</th>
<th>Street Names</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waipahu: Bursting water</td>
<td>Hikimoe: Place to rest</td>
</tr>
<tr>
<td>Waikele: Muddy water</td>
<td>Mokuola: Island of health</td>
</tr>
<tr>
<td>Wailani: Heavenly water</td>
<td>Moloalo: Main stream into which branches enter</td>
</tr>
<tr>
<td>Pouhala: Hala (pandanus) posts</td>
<td>Kau: Summer</td>
</tr>
<tr>
<td></td>
<td>Olu: Cool, refreshing, comfortable, pleasant, Kailualani: Site of Heaven</td>
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</table>

Walkable

Coordinating a seamless pedestrian experience connecting transit and community resources.

- 3,500 feet of Bicycle and Pedestrian Pathways
- 100,000 square feet of Street Level Marketspace
- 350 Housing Units Accessible to Transit
- 230 Jobs Accessible to Transit

Adaptable

Creating community resources designed to keep pace with our rapidly changing island.

- 700 Parking Spots in Green Rooftop Parking Structure
- 5 Floodable Features Along Wailani Canal Walk
- 1,584 feet of Wailani Canal De-channelized for Flood Mitigation

Interactive

Connecting the community to its past through experiential education and family recreation.

- 78% Open Space
- 20,000 square foot Public Library
- 90,000 square feet of Office Space for Service Providers
- 11,520 square feet of Maker’s Space for Community Use
SITE OVERVIEW

1. Hikimo Street - Neighborhood Retail/Restaurants
2. Hikimo Street - Complete Street
3. Pedestrian & Bicycle Pathway
4. Pedestrian & Bicycle Bridge
5. Multi-use Community Plaza
6. Maker’s Space & Community Kitchens
7. Public Library
8. State Social Service Providers
9. Wailani Canal Softening & Widening
10. Wailani Canal Walk
11. Waihau Floodable Fountain Feature
12. Interactive Floodable Spaces
13. Adaptable Parking Structure & Rooftop Gardens
15. Senior Housing Consolidation & Improvement
16. Mokuola Vista Apartments

Rail station

Square Footage: 432,500
Stories: 5
Walk time to Station: 4-6 min
Features: Rooftop community garden space, adaptable garage design, park headquarters, facilities and storage for groundskeeping, maintenance, and security.

Square Footage: 11,520
Stories: 2
Walk time to Station: 2-3 min
Features: Farm to table initiative tied to community gardens, classes and lessons which interest the community, intergenerational activities, and trade skills.

Square Footage: 126,000
Stories: 1 for library, 6 for services
Walk time to Station: 2-3 min
Features: High-speed Internet access, trainings that will interest the community, reading and writing space, open concept deck, multi-level public space, and increased space for social services.
Hikimoe complete street (Bus only)
1. Increased volume of flow

2. Secondary line of defence against Flooding

3. Natural walkable landscape for recreational use

(with additional floodable spaces)
Adaptable parking modules with solar roof for shuttle charging

Parking/Charging space for 12-15 passenger Autonomous transit shuttle

Future proofing
Adaptable parking modules with solar roof for shuttle charging

Parking/Charging space for 12-15 passenger Autonomous transit shuttle

Future proofing
Plan C: Health & Wellbeing

Health & Wellbeing → Meets Basic Needs, Supports Livelihoods, and Ensures Public Health Services

- Flood Mitigation
- Preservation of Social Services
- Parking
- School Accommodation
- Density
Restoring the Health and Wellbeing of Wailani Stream

Current Conditions & Issues:

- Uninviting
- Connectivity Barrier
- Channelized
- Urban Runoff
- Poor Water Quality
- Lack of Natural Habitat
- Minimal Groundwater Recharge
Restoring the Health and Wellbeing of Wailani Stream

Precedence

Seoul

Kapalama

Wailani Stream

Waipahu

Singapore

San Antonio
Programing to Support Health and Wellbeing

- No parking → increase the number of housing units and lowering their costs, making it more pedestrian friendly
- Keeping Civic Center and its services but stacking it on the library while adding spaces for adult/child day care as well as after school programs
- Recreation Center (gym, dance studio, boxing/MMA space)
- Businesses → insurance offices, sporting good store, medical offices, pharmacy, urgent care
- Pedestrian/bike path along Wailani Stream
- Outdoor fitness stations along the banks
Four Takeaways - Pouhala Station Specific

PLAN A: FLOW

PLAN B: W.A.I.

PLAN C: Health & Wellbeing
Takeaways - Concept Designs for State Parcels in Pouhala TOD

1. The Six State Held Parcels Are An Opportunity For Change.
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4. Examining Transportation Priorities - How Will Rail Impact These Priorities?
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Current and Future Activities

PLAN 750: Planning Practicum
● Waipahu as a model for future TOD, mixed use urban village
● Civic engagement workshop with community to share ideas, visions (April 2018)

PLAN 642: Urban Infrastructure Planning
● Infrastructure capacity analysis
● Constraints and opportunities for multi-modal transportation and green infrastructure in Waipahu

Additional UH efforts
● Facilitated planning/analysis State CIP prioritization (UH Public Policy Center)
● Preliminary housing needs assessment (UH CDC)
● Ecological conditions assessment (UH CDC)
● Housing block criteria and prototype design concept (UH CDC)
Mahalo!

Questions?

Environmental planning students at Pouhala Marsh

Site planning students