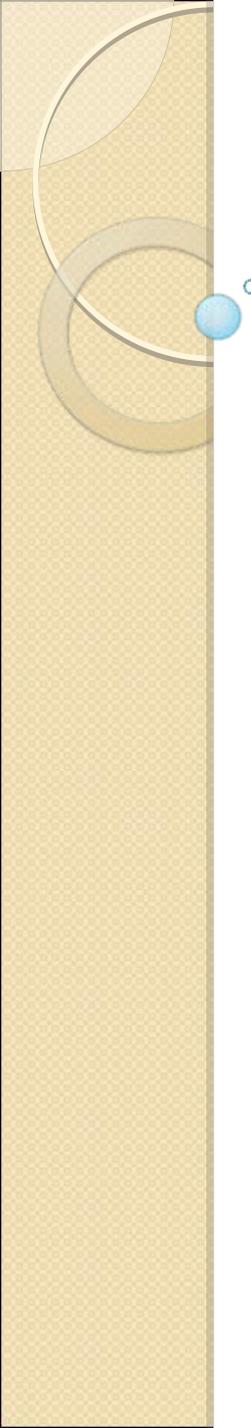


# Rail Alignment Wastewater Capacity Issues

August 10, 2012





# Background

## **Enterprise Based Department**

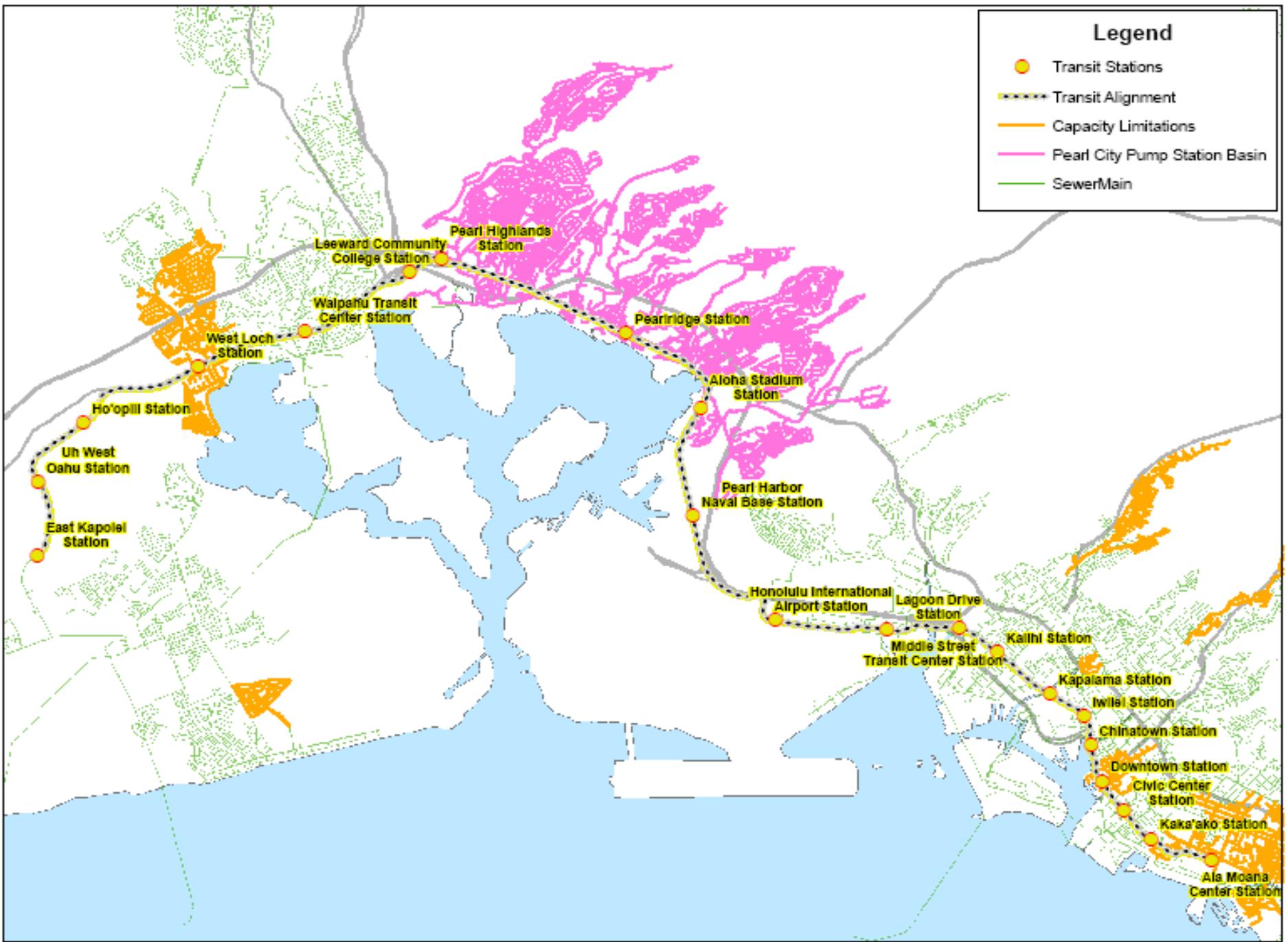
Operations and Construction Fully Supported by the Sewer Service Fee

Capital Projects are Paid by the Issuance of 30 Year Revenue Bonds

Neither Property Tax nor GET tax subsidizes or supports the sewer program

# Background

- **POSITION**
  - Existing Assets vs New Pipe to Support Development
  - Consent Decree Requirements
- **WHY EARLY NOTIFICATION**
  - Notification of Restrictions Provides Developers a “heads up”
- **TECHNICAL ISSUES**



### Legend

- Transit Stations
- Transit Alignment
- Capacity Limitations
- Pearl City Pump Station Basin
- SewerMain

**Transit Stations:** East Kapolei Station, Uh West Oahu Station, Ho'opili Station, West Loch Station, Leeward Community College Station, Walpahu Transit Center Station, Pearl Highlands Station, Pearlridge Station, Aloha Stadium Station, Pearl Harbor Naval Base Station, Honolulu International Airport Station, Lagoon Drive Station, Middle Street Transit Center Station, Kailhi Station, Kapalama Station, Iwilei Station, Chinatown Station, Downtown Station, Civic Center Station, Kaka'ako Station, Ala Moana Center Station.

**Capacity Limitations:** West Loch Station, Ho'opili Station, Uh West Oahu Station, East Kapolei Station, Kailhi Station, Kapalama Station, Iwilei Station, Chinatown Station, Downtown Station, Civic Center Station, Kaka'ako Station, Ala Moana Center Station.

**Pearl City Pump Station Basin:** Pearl Highlands Station, Pearlridge Station, Aloha Stadium Station, Pearl Harbor Naval Base Station.

**SewerMain:** Various green dashed lines throughout the map.

# Long Range Planning Efforts

- Facility Plan start Jan 2010 East Oahu – WWTP and Pump Stations
- Options for increasing capacity are investigated
- New Pump Station locations
- Best alternative for transport of WW
  - Beachwalk Force Main
  - Kailua – Deep Gravity Tunnel

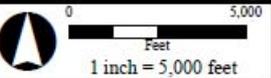
# Long Range Planning Efforts

- Facility Plan start Jan 2008 for West Oahu – WWTP and Pump Stations
- For Waipahu/Pearl City, 10 options for increasing capacity were investigated
- New Force Main selected as the best alternative
- The “Project” was budgeted for FY 12
- New Force Main project starting July 2012

# City and County of Honolulu

## HONOLULI/ WAIPAHU/ PEARL CITY WASTEWATER FACILITIES PLAN

- Legend**
-  Pump Station
  -  Interstate Highway
  -  East Interceptor
  -  Force Main
  -  Major Sewer Main

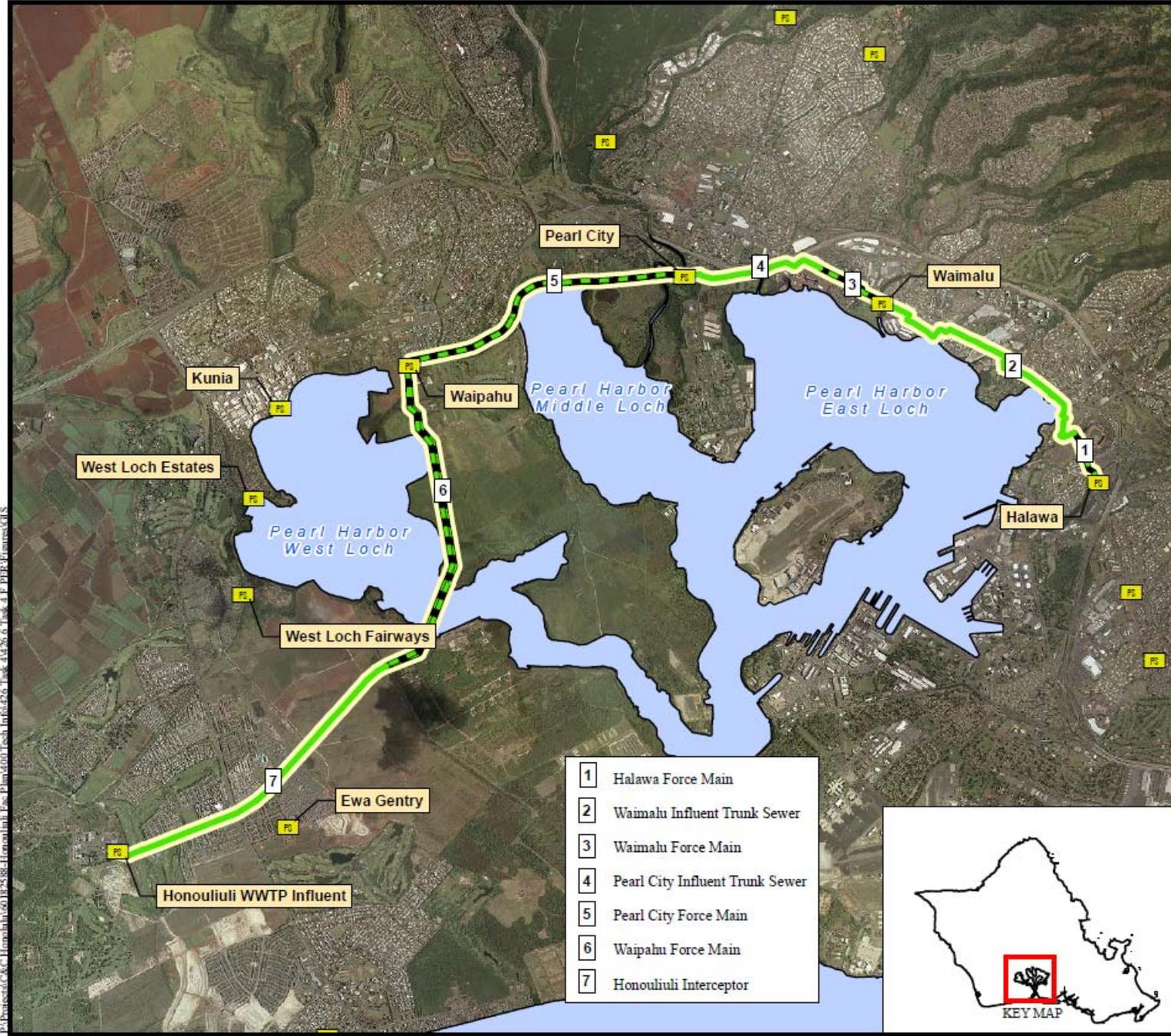


*Task 4.F Pre-Draft  
Honolulu Wastewater Conveyance  
and Treatment Facilities  
Preliminary Engineering Report*

**FIGURE 2-3  
HONOLULI  
FOCUS AREA**

May 2011

**AECOM**  
1001 BISHOP ST. STE 1600  
HONOLULU, HAWAII 96813

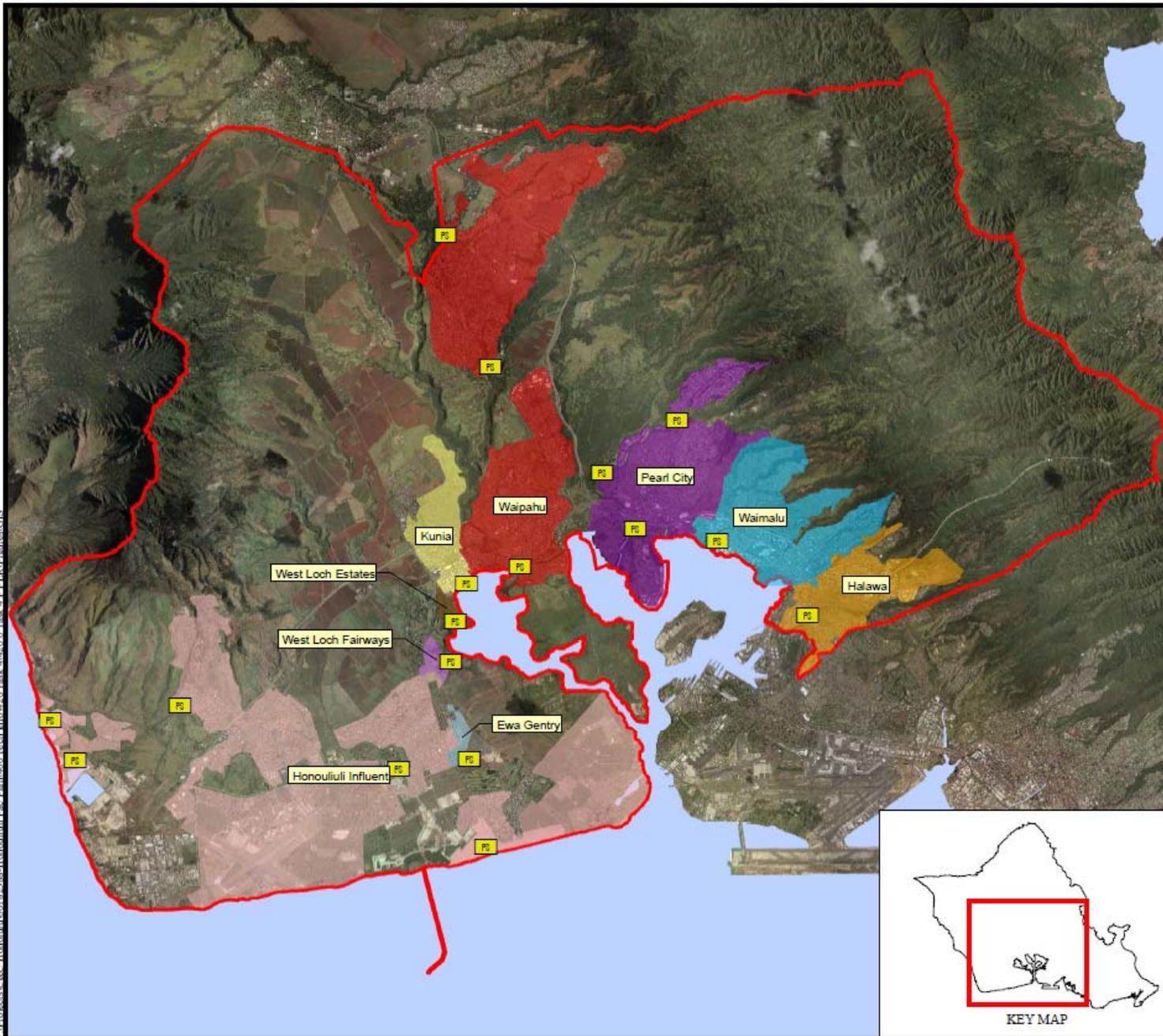


- 1 Halawa Force Main
- 2 Waimalu Influent Trunk Sewer
- 3 Waimalu Force Main
- 4 Pearl City Influent Trunk Sewer
- 5 Pearl City Force Main
- 6 Waipahu Force Main
- 7 Honouliuli Interceptor



D:\Documents\City of Honolulu\160118-0558-Honolulu\_Ewa\_Plans\001\_Tech\_Info\620\_Tank\_415%\_6\_Tank\_41\_P\_001311.mxd

P:\Projects\060a\_Honolulu\060118\9588\_Honolulu\_Eis\_Plan\001\Tech\_Info\026\Task\_4\26\_6\_Task\_4\_PPR\Figures\GIS

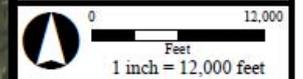


# City and County of Honolulu

## HONOULIULI/ WAIPAHU/ PEARL CITY WASTEWATER FACILITIES PLAN

### Legend

-  Pump Station
-  Honolulu Boundary



*Task 4.F Pre-Draft  
Honouliuli Wastewater Conveyance  
And Treatment Facilities  
Preliminary Engineering Report*

**FIGURE ES-1**

**WWPS TRIBUTARY  
AREAS**

May 2011

**AECOM**

1001 BISHOP ST. STE 1600  
HONOLULU, HAWAII 96813



KEY MAP

# Kunia WWPS Issues

- Current WWPS capacity limitations being evaluated.
- Flow model development on-going, in accordance with consent decree schedule.
- Preliminary report due to EPA at end of 2012.
- Alternative solutions being studied.

# Established Task Teams

- **First 30 days:**
  - Task Team 1, Waipahu Force Main (New)
  - Task Team 2, Waipahu Assessment
  - Task Team 3, Mitigation Alternatives
- **Members**
  - Experts from three city departments and three consulting firms

# Task Team I: Waipahu Force Main (new)

- In Progress
  - Design consultant contract drafted and submitted to BFS
  - Discussed permitting and easement issues
  - Contacted the Navy
- Next steps
  - Develop a detailed management schedule for initial work

# Task Team 2:

## Waipahu Assessment

- Should connection in the Waipahu basin be restricted?
  - Technically yes, because:
    - The shared force main downstream of the Waipahu WWPS is the constriction.
    - High flows at Waipahu and Pearl City at the same time could cause a spill.

# Task Team 3:

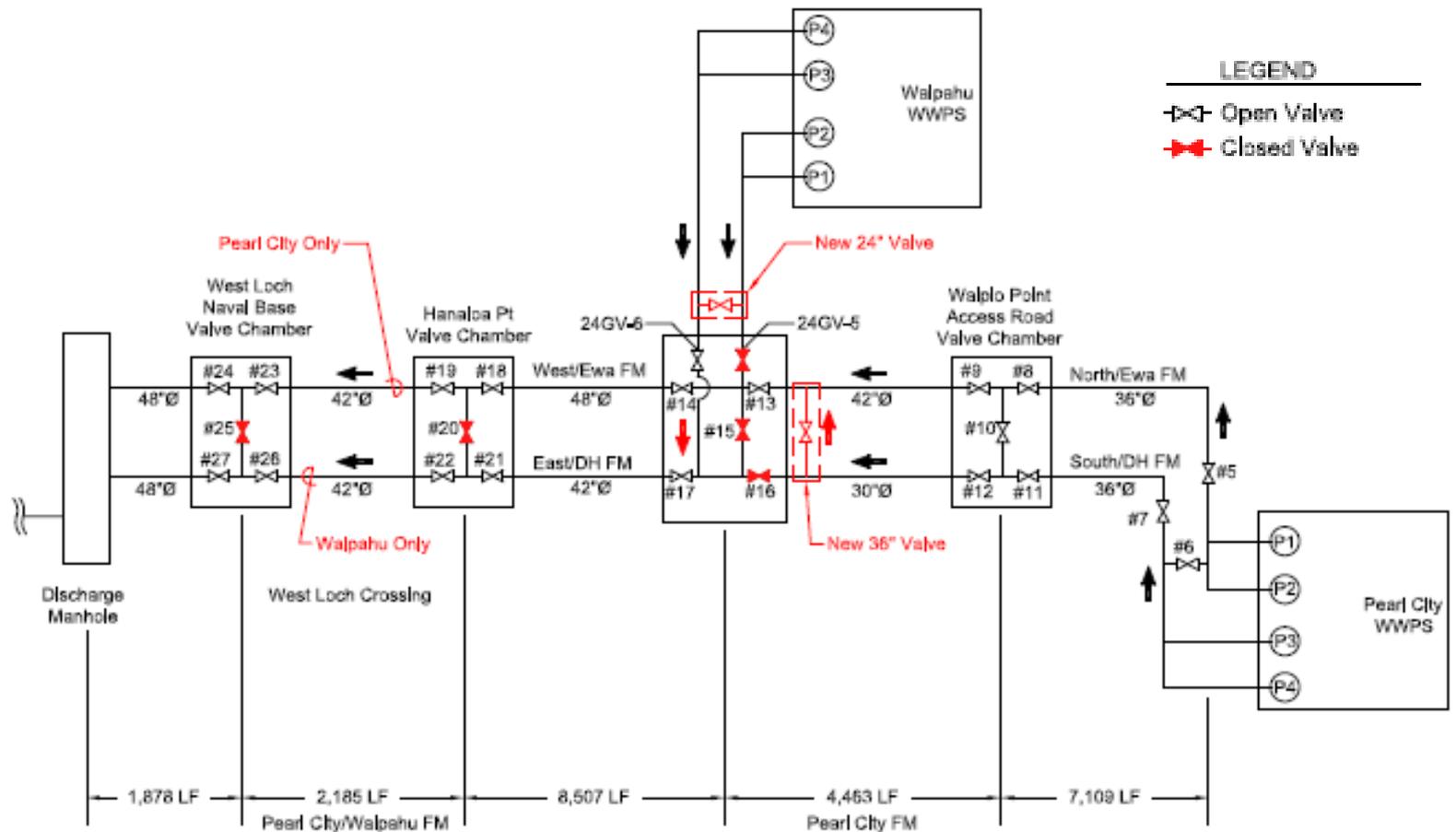
## Mitigation Alternatives

Concept	Status	Reason
Dedicated force main operations	Pursue	Provides short-term capacity
Increase pump size at Pearl City	Drop	High pressures could break FM
Temporary Pipeline (Black Noodle)	Drop	No time savings, not cost effective
Storage at Pearl City or Waipahu WWPSs	Drop	No time savings, difficult to site, operationally difficult
Storage provided within developments	Last Resort	Operationally risky, costly for temporary solution
Allow septic systems in areas with sewers	Drop	Not allowed State DOH, plus takes land, systems can fail
Allow private on-site treatment plants	Drop	Involves State, not cost effective for developers, city system would be required for back up.

# Dedicated Force Main Operations



# New valves allows dedicated operations of both pump stations



# Dedicate a force main to each pump station

- Need two new valves for dedicated FM

	Pearl City	Waipahu
<b>Capacity with dedicated FM</b>	34.9	43.5
<b>Forecasted Demand</b>		
2010	28.4	23.4
2018	30.8	25.3

# What's Next

- Waipahu Force Main (new) project
  - Continue project startup
  - Select project delivery method
- Add valves at Waipahu WWPS for dedicated FM operations
- Once valve installation is scheduled release permits for development to come on-line after valve installation
- Lessons learned evaluation

# Project delivery options

- Normal Delivery – 7 years
- Accelerated Design/bid/build – 5 years
- Alternative Delivery – 4 years
  - Construction Management at Risk
  - Design/Build
- Next steps
  - Decide alternative delivery
  - Fine tune the schedule based on delivery decision

# Questions

