Department of Water Supply
County of Maui

MAUI ISLAND
WATER USE & DEVELOPMENT
PLAN UPDATE

March 10, 2016
Presentation Topics

- Water Use & Development Plan - Purpose and Requirements
- Background: Hawai’i Water Plan Update Status
- Maui Island WUDP approach
- Regional Issues: Central, Wailuku, South areas
- Next Steps
WUDP Purpose & Requirements

- 20-year plan
- Assist county in conservation, development, use of its water resources
- Provide guidance to Commission on Water Resource Management
- Meet future needs of County, Dept. of Hawaiian Homelands, State
- Allocate water to land use consistent with Maui Island Plan
- Plan by groundwater aquifers, surface water hydrologic units
- Consistency with Hawai’i Water Plan and County land use plans

HRS § 174C-31, HAR § 13-170-30 – 32, Maui County Code Chapter 14.02
WUDP Purpose & Requirements

Allocate water to land use in Maui Island Plan by aquifers

Consider and Protect Public Trust Uses
Adopt Water Resources Trust Principles

Legend
- Urban Growth Boundary
- Rural Growth Boundary
- Country Town
- Rural Service Center

SECTOR
- CENTRAL
- HANA
- KAHIKINUI
- KOOLAU
- LAHAINA
- WAILUKU

- Kuleana rights
- Maintenance of waters in their natural state ("resource protection")
- Domestic use (primarily drinking water)
- Hawaiian traditional and customary practices, including appurtenant rights
- DHHL water reservations for future reasonable-beneficial use
Hawai‘i Water Plan Status

County Plans
Hawai‘i- adopted Maui, Kuau‘i, O‘ahu in progress

Water Resource Protection
Water Quality
State Water Projects
Agricultural Plan

Hawai‘i Water Plan

MAUI COUNTY WUDP

2011

2016...

2016

- 2010 Central Maui Plan on DWS system only
- Not approved by CWRM
- Revised Scope 2012
How Does the WUDP Affect Me?

- It considers how water can be managed in a way that protects the sustainability of water resources for the future.
- A plan to meet future water needs protects your investment in property and in the community.
- Your involvement in the WUDP process helps ensure that a wide range of views, scenarios and options are considered.
- Through the process, we can seek real solutions to conflicts.
- A plan vetted by the community and adopted by the county and state provides a sound foundation for decision making and action.
The WUDP will:

- Support and implement Maui Island Plan as technical document
- Use integrated resource planning based on hydrologic units
- Include all water systems and water users on Maui Island
- Apply updated data, scientific studies, climate models
- Recommend water allocation policies

The WUDP will not:

- Propose growth rates or locations different from Maui Island Plan
- Contain CIP level detail
- Be DWS centric

Uncertainties:

- Court cases- Na Wai ‘Eha & East Maui Streams
- Future agricultural use of HC&S Lands
Integrated Planning Process

Planning Objectives

Evaluation Criteria

Public Process

Coordinate with other Plans

Demand Forecast
Base year 2014
Planning horizon to 2035

Identify and Prioritize Options and Strategies

Recommend Water Allocation Policies

Land use based, full build-out, County zoning & DHHL

20 year population based scenarios

Resource Assessment

Studies, Previous WUDP chapters, Modeling, Legal Decisions

State Plans
Multi-Year *Foundation*:

- Focus Maui Nui
- General Plan Committee
- Past WUDP Public Meetings
- Policy Board Meetings

*Ongoing Public Process*:

- Public input, targeted meetings
- Opportunities at each draft Plan stage
- Regional Public Meetings
- Board of Water Supply
- County Council
- CWRM
Planning Objectives

Derived from:
- Maui Island Plan
- State Plans
- WUDP public process
- Policy board meetings

More input is welcome!

<table>
<thead>
<tr>
<th>Objective</th>
<th>Description</th>
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<tbody>
<tr>
<td>Availability</td>
<td>Provide Adequate Volume of Water Supply</td>
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<tr>
<td>Quality</td>
<td>Maximize Water Quality</td>
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<tr>
<td>Reliability</td>
<td>Maximize Reliability of Water Service</td>
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<tr>
<td>Efficiency</td>
<td>Maximize Efficiency of Water Use</td>
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<td>Cost</td>
<td>Minimize Cost of Water Supply</td>
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<tr>
<td>Viability</td>
<td>Establish Viable Plans</td>
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<td>Conformity</td>
<td>Maintain Consistency with General &amp; Community Plans</td>
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<tr>
<td>Equity</td>
<td>Manage Water Equitably</td>
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<tr>
<td>DHHL</td>
<td>Provide for DHHL Needs</td>
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<td>Provide for Agricultural Needs</td>
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<td>Culture</td>
<td>Protect Cultural Resources</td>
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<td>Sustainability</td>
<td>Maintain Sustainable Resources</td>
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<tr>
<td>Environment</td>
<td>Minimize Adverse Environmental Impacts</td>
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<tr>
<td>Resources</td>
<td>Protect Water Resources</td>
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<tr>
<td>Streams</td>
<td>Protect and Restore Streams</td>
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Multiple Resource Assessment & Planning Boundaries

- Maui Island Plan
- Aquifers, Watersheds
- Community Plans
- Moku, Ahupua’a
- Water System Areas
Surface Water Use Assessment

Na Wai ‘Eha
- CWRM provisional order of appurtenant rights; amendments to IIFS
- Surface water use permitting phase
- Petition to amend IIFS, re: HC&S closure

East Maui
- Contested Case Hearings Officer’s Proposed Findings of Fact, Conclusion of Law & Decision and Order, Jan. 15, 2016

West Maui
- USGS Study of Low-flow Characteristics of Streams completed, June 2014
- CWRM staff begin preparing instream flow standard assessments, early 2016
Groundwater and Projected Demand

Existing regional groundwater transfer by aquifer system
Population Growth Based Water Demand

Maui Island, 2010-2035 (MGD)
Does NOT Include AG Use

- Total
- County DWS
- Private Public Systems

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Identify, Evaluate & Prioritize Strategy Options

Planning Objectives

Resources
options, alternatives policies, programs

Viability
legal issues, scarcity, use restrictions, other constraints

Relative cost comparison
Focus Issues
Competing Interests
Uncertainty

- Native Hawaiian rights
- Water allocation policies
- Agricultural needs
- Conventional vs. alternative water sources
- Resource efficiency & protection
- Drought and climate change
- Other issues!

- Differing planning boundaries
- Conflicting planning objectives
- Policy guidance lacking or unresolved
- Multiple stakeholders
- Issues differ geographically
- DWS vs other systems
- Contingencies (court cases) and uncertainty (future ag)
What are the kuleana needs? Kuleana- native tenants- highest priority

No absolute priorities between broad categories of public trust uses (environmental protection, native Hawaiian T & C practices including appurtenant rights, DHHL, domestic uses)

Balance public and private purposes with a presumption in favor of public use, access, and enjoyment

Accommodate uses inconsistent with the mandate of protection, promote the best economic and social interests of the people of the State

HRS 174C, Supreme Court of Hawai‘i, Wai‘āhole Ditch Combined Contested Case No. 21309)
“Enhance vitality and functioning of streams, balance multiple needs of community”

- How can resource protection extend to entire ahupua`a (mauka to makai) and not limited to upper forested watersheds?
- Restrict uses that pose a risk to water quality around drinking water wells (wellhead protection)?
- What is the community’s role in resource protection?
Water Allocation Policies: Central Maui

Urban growth areas, population centers and visitor industry in dry regions

- Increase groundwater transfers to directed growth areas?
- Adapt to regional climate and conditions?
- Maximize alternative resources (recycled, brackish, desal) even if less cost effective?
- Use most cost effective option?
Resource Efficiency

Maui County’s Landscape and Gardening Handbook

Water Conservation in the Landscape

Department of Water Supply
210 South High Street
Wailuku, HI 96793
www.mauiwsp.org

By Water All Things Find Life

METERS AND DEMAND 1994-2014

Annual CNSM per Service

Services
Reliability

“Adequate water quantity and quality, pressure and response”

Generally, surface water, recycled, storm-water reuse and catchment are less reliable

- Full groundwater backup for maximum reliability and longer droughts?
- Continue to rely on surface water seasonally?
- Increase surface water use and build raw water storage?
- Diversify to a combination of groundwater, surface water, recycled water & alternative sources as long as cost effective?
### Next steps...

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<thead>
<tr>
<th>UPCOUNTRY DISTRICT</th>
<th>CENTRAL DISTRICT</th>
<th>HANA DISTRICT</th>
<th>WEST MAUI DISTRICT</th>
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<tbody>
<tr>
<td>Eddie Tam Memorial Center</td>
<td>Wailuku Velma-McWayne Community Center</td>
<td>Hana Community Center-Helene Hall</td>
<td>Lahaina Civic Center</td>
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<td>March 10, 2016 6:00 - 8:30 p.m.</td>
<td>April 19, 2016 6:00 - 8:30 p.m.</td>
<td>March 17, 2016 6:00 - 8:30 p.m.</td>
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<td>April 30, 2016 10 a.m. - 1:00 p.m.</td>
<td>May 21, 2016 10 a.m. - 1:00 p.m.</td>
<td>May 7, 2016 10 a.m. - 1:00 p.m.</td>
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In sum...

- “Sister” document to Maui Island Plan
- Resource based, not DWS centric
- Use previous studies & data
- Continuation of extensive public process
- It’s Maui’s plan - address local conflicts
- Plan for uncertainty

www.mauiwater.org

* * *

Maui County DWS
Water Resources & Planning

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