

BOARD OF WATER SUPPLY  
COUNTY OF MAUI  
  
REGULAR MEETING MINUTES  
OF JUNE 15, 2017

The regular meeting of the Maui County Board of Water Supply was held at the Department of Planning Conference Room, 250 South High Street, Wailuku, Maui, on Thursday, June 15, 2017.

CALL TO ORDER

The meeting was called to order by Chair Lyons at 9:03 a.m.

ATTENDANCE

Members present: Anders Lyons, Chair  
R. Raymond Cabebe, Vice Chair  
Shay Chan Hodges  
Norman Franco  
Cyrus Kodani  
Michael Nakashima

Staff present: David Taylor, Director  
Jennifer Oana, Deputy Corporation Counsel  
Eva Blumenstein, Planning Program Manager  
Agnes Nolan, Private Secretary

APPROVAL OF MINUTES

Minutes of May 18, 2017

Motion: Member Kodani moved to approve the minutes of May 18, 2017

Second: Member Chan Hodges

Discussion: None

Vote: Unanimous. Motion carried. The minutes of May 18, 2017 were approved as submitted

TESTIMONY FROM PUBLIC

There was no public testimony.

OTHER BUSINESS

Maui County Water Use and Development Plan (WUDP) Update

Eva Blumenstein, Water Resources and Planning Program Manager, gave a power point presentation on the update. A copy is attached (Attachment A). Board members received the 236 page WUDP document via email on June 7, 2017. During this meeting Ms. Blumenstein reviewed Part I of the draft which covered the Technical Approach (Regulatory Framework, Issues and Concerns, Planning Objectives, Existing and Future Water Use).

Chair Lyons asked if any action from the Board was needed at this time. Ms. Blumenstein replied that there was no action necessary, but that the plan gets reviewed by the Board over several meetings beginning with the regional plans.

Member Franco asked if there was correlation between the WUDP and the community plans already set in place. Ms. Blumenstein confirmed that it is and that a matrix is provided in the appendices that compares the Maui Island Plan, WUDP, and each community plan objectives, goals, and action items. This plan will address any conflicts of each adopted community plan and will also help frame future updates as the Department works closely with the Long Range Planning Division.

Member Franco stated that it is funny that they (Planning Department) did planning without consulting the water usage component, you'd think that they would do that in the initial process of planning all these regional plans. Ms. Blumenstein stated that it was her understanding that the last WUDP update is from 1990 and a lot of the community plans are from the 90's, so there was a WUDP adopted then to guide the community plans.

Director Taylor interjected to add some clarifications to the Board regarding the community plans. He stated that the general plan is done under the Planning Department. The General Plan is made up of 11 individual plans, there's the Countywide Policy Plan, the Maui Island Plan and then all the other community plans. All together all those documents are called The General Plan. They are all on different timelines, so some of them are always old because they are not all done the same day. There's not a start date where they all start this date and all end this date. They are all constantly being changed in the usual 20 year time cycles. When the Maui Island Plan was done, the Planning Department worked with all the different utilities about the latest best information at the time to make the Maui Island Plan. We're now a few years removed from that so we have some updated information, so there's this constant effort to try to

keep these aligned, but the reality is because the time frames are all different, there is always some misalignment. We'll never have a point where they are all exactly aligned because there is no way to get the times on the same time frame.

Member Nakashima asked how often is the WUDP reviewed and redone. Ms. Blumenstein stated that it is 25 years overdue. The state water code language says the plan should be updated regularly, meaning more often than 20 years. Next update should be a lot simpler because we did a lot this heavy lifting now so the next update can focus on just regional portions and changes.

Director Taylor stated that the challenge we have is making a plan that lasts versus other people saying we should be making a plan that's detailed. We are trying to get this plan with the right level of detail that is enough detail for people to know what's going on and make decisions, but enough flexibility that it will last a long time and still be valid 10-20 years from now.

Member Chan Hodges referred to #2 on slide 5 of the presentation in regards to BWS holding one or more public hearings on the proposed update. She pointed out that the department held public hearings so are these separate public hearings that the Board is supposed to hold within the 180 days? Ms. Blumenstein explained that the Department does not hold public hearings but hold open public meetings. Therefore, the public hearings referred to in the process is the Board's responsibility.

Chair Lyons concurred with Ms. Blumenstein that the Board will review Part II of the WUDP in another meeting.

## DIVISION REPORTS

### May Division Operational Reports

Director Taylor stated that he had nothing out of the ordinary to report and was open to answer any questions.

Chair Lyons addressed a question from the public.

Tom Blackburn Rodriguez from Kihei. His question was to clarify as to when the 180 day review would even start.

Director Taylor responded to the question by explaining that there will be something on letterhead signed by him to Chair Lyons which says, "We are hereby as per county code, etc....transmitting to you for your approval..." We will start the clock ticking when we formally send the entire document and say here it is you have X number of days. We'll make that very formal, it won't be vague, it will be very clear that we're starting the clock.

Receipt of Board Member request for agenda items to be placed on future agendas

Member Franco requested that we should look at the process of catching water more thoroughly. Look at possibilities where catchment processes can be incorporated in the overall water usage.

Discussion and possible action in the matter of Board Members receiving documents electronically

Chair Lyons asked the members how is the paper reduction effort going. So far it is working out well for the members.

ADJOURNMENT

There being no further business the meeting adjourned at 10:05 a.m.

Prepared by:

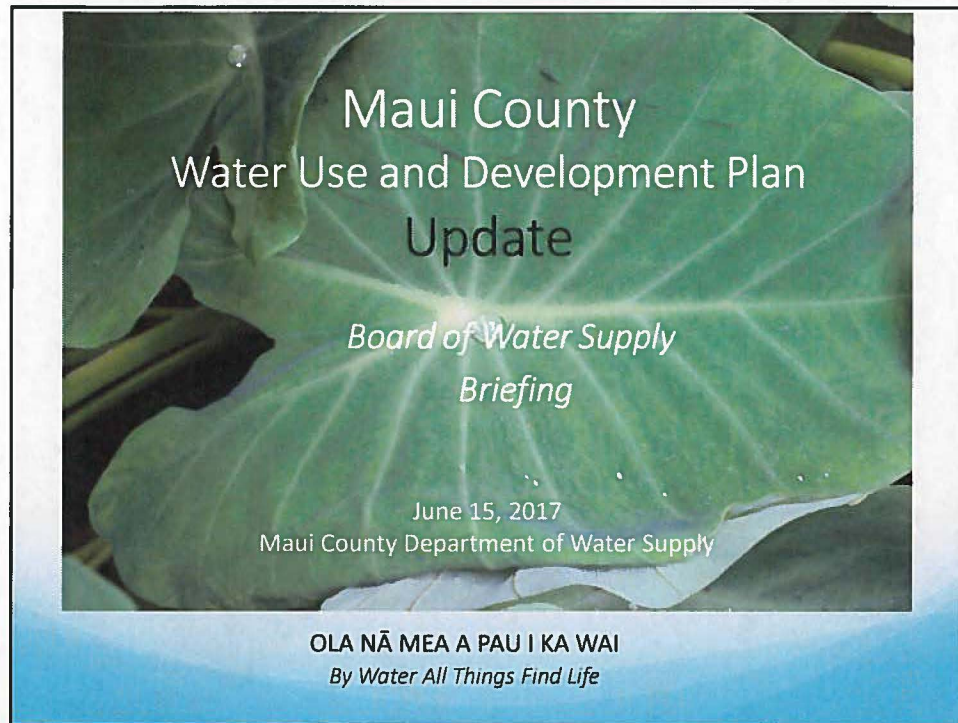
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Agnes Nolan  
Private Secretary

Approved for distribution:

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David Taylor  
Director



## Presentation Outline

- Status & Timeline
- Board of Water Supply Process
- Review Part I: Introduction and Technical Approach
- Summary Part II: Water Resource Management, Strategies and Recommendations
- What's Next

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## Background and Timeline

<p><b>Maui Island</b></p> <p>WUDP public process reignited</p> <p>Public meetings, Targeted Stakeholder Meetings</p> <p>Public Workshops.....</p> <p>Brief CWRM/Board of Water Supply.....</p> <p>3<sup>rd</sup> Round Public Meetings Preliminary Strategies</p> <p>Draft Plan Sections Brief Board of Water Supply</p> <p><b>Final Draft Board of Water Supply Review/Public Hearings</b></p> <p>County Council/CWRM Final Plan Approval.....</p> <p><b>Moloka'i</b></p> <p>Commence process.....</p>	 <p>Winter 2015</p> <p>Spring 2016</p> <p>Spring 2016</p> <p>Summer 2016</p> <p>Fall/Winter 2016</p> <p>Spring 2017</p> <p>Summer – Fall 2017</p> <p>Fall 2017 - 2018</p>
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## Where we left off

- **Part I:** Technical Approach (Regulatory Framework, Issues and Concerns, Planning Objectives, Existing and Future Water Use)
- Incorporate findings from final round of public workshops



**Part II:** 62 Island Wide Strategies and Policies that support planning objectives and reflect guiding principles

- **Part III:** Refined regional strategies for source development (Regional Plans)



**MAUI ISLAND  
WATER USE &  
DEVELOPMENT PLAN  
DRAFT**

<http://co.maui.hi.us/2051/Maui-Island-Water-Use-Development-Plan>

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## Board of Water Supply Process



1. DWS transmits proposed updates to BWS and CWRM for review.
2. BWS to hold one or more public hearings on the proposed update in the affected district, transmit the proposed update with its findings and recommendations to the department within 180 days
3. The department to review BWS recommendations and if deemed necessary by the director, make revisions. The director to transmit the proposed update to County Council within 60 days of receipt of BWS recommendations
4. County Council to pass the proposed update by ordinance within 180 days (may extend by resolution)
5. County Clerk to transmit the ordinance to the CWRM for final review, acceptance, and incorporation into the Hawaii Water Plan.

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## Review Part I: CONTENTS

1. Regulatory Framework: State, County and other policy plans
2. Integrated Planning Process: Community interests and participation
3. Management Framework: Issues and concerns, values and principles, planning objectives
4. Planning Scenarios: Alternative scenarios to project demand and account for uncertainties
5. Physical Setting: Water resources, hydrology, drought and climate change effects, water resource availability
6. Settlement patterns and cultural resources
7. Existing Land Use: Maui Island Plan, Department of Hawaiian Homelands Plan
8. Existing Water Use: By type and resource, alternative water resources
9. Future Water Needs: Demand projections based on land use and population growth, agricultural, DHHL and drought scenarios

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### Review Part I: State Regulatory Framework

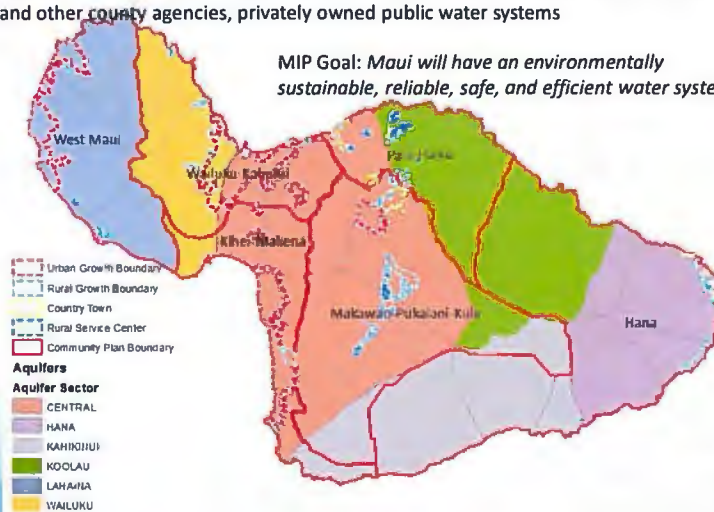
- The WUDP is part of the Hawai'i Water Plan, a long-range planning guide for use by CWRM for the protection, conservation, and management of Hawai'i's water resources.
  - Based on hydrologic units
  - 20 year planning horizon



### Review Part I: County Regulatory Framework

- Set forth allocation of water to land use by identifying water supplies (and conservation strategies) for planned growth per the Maui Island Plan
- Consistent with Maui General Plan, Community Plans, DHHL
- Long range strategic water resource plan to inform and guide the DWS capital improvement program
- Applies to DWS and other county agencies, privately owned public water systems

MIP Goal: Maui will have an environmentally sustainable, reliable, safe, and efficient water system.





## Review Part I: Community Participation Program

2004 - 2009: Limited scope: DWS Central and Upcountry districts, community workshops and meetings, technical studies

2012: Revised WUDP Project Description accepted by CWRM

2013: Initial round of community meetings

2015 – 2016:

- Community meetings (12) were held regionally: Round 1 - Issue identification, Round 2 – Profiles, Objectives and Strategies, and Round 3 – Strategies to Address the Key Issues
- Target interest group meetings (7): Group of diverse interests, Aha Moku O Maui and regional moku, agricultural, realtors, Kaupo community.
- Ka Pa'akai consultation process conducted
- WUDP Survey distributed at meetings and online
- All materials placed online
- Progress reports provided to the Board of Water Supply (2), the Council's Water Resources Committee (2), and CWRM (2)

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## Review Part I: Management Framework

### Issues and Concerns:

- Impacts of water transport from wet areas on the ecosystem and public trust and other local uses
- Streamflow diversions have abused water rights
- Conventional landscaping is an irresponsible use of water resources
- Lack of aquifer information in regions that are not designated groundwater management areas
- Availability of water for affordable housing, farming, residential and business use
- Concern for brackish wells becoming saltier
- Disrepair and maintenance of plantation conveyance and irrigation systems
- Inadequate reporting of private wells
- Impact on water resource from extended droughts

### Values and Principles

- Ecologically holistic and sustainable
- Based on ahupua'a management principles
- Legal, science and community-based
- Action-oriented

### Planning Objectives

- ✓ Maintain Sustainable Resources
- ✓ Protect Water Resources
- ✓ Protect and Restore Streams
- ✓ Minimize Adverse Environmental Impacts
- ✓ Manage Water Equitably
- ✓ Provide for Department of Hawaiian Homelands Needs
- ✓ Provide for Agricultural Needs
- ✓ Protect Cultural Resources
- ✓ Provide Adequate Volume of Water Supply
- ✓ Maximize Water Quality
- ✓ Maximize Reliability of Water Service
- ✓ Maximize Efficiency of Water Use
- ✓ Minimize Cost of Water Supply
- ✓ Establish Viable Plans
- ✓ Maintain Consistency with General and Community Plans

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### Review Part I: Management Framework

Criteria	Planning Objectives							
	Sustainability Resources Streams Environment	Ag	Equity DHHL Culture	Availability	Quality	Reliability	Efficiency Cost	Plan Viability Conformity
Groundwater sustainable yield levels are maintained over time	X			X				X
Stream flows restored to level to support stream ecosystems	X		X	X				X
Watersheds protected from invasive animals and plants	X			X				
Interim flow standards adopted for watersheds	X		X					
Scientific studies for aquifer systems complete (support science-based SY)	X							
Water resources and water system use is based on aquifer recharge and stream flows under drought conditions	X		X		X	X		
Chloride levels in wells remain stable (salt water intrusion)	X	X		X	X	X	X	
Use of recycled water increased	X			X		X		
Graywater and catchment systems installed	X			X				
Infrastructure projects increase recycled water use and stormwater capture	X			X				
Watershed collaboration increased	X			X				X
Native Hawaiian community consultation process instituted			X					X
Per capita water use decreased	X			X		X	X	11
MDWS prioritize DHHL needs over lower priority users			X					

### Review Part I: Planning Scenarios

Evaluate future water resources and demands over the planning horizon 2015-2035

**Population Based Water Demand Scenario:** Based on the population growth rates by community plan area in the Maui Island Plan (2014 Socio-Economic Forecast Update). Excluding agricultural demands which are not correlated with population growth. High and Low Cases are generated based on Socio-Economic Forecast.

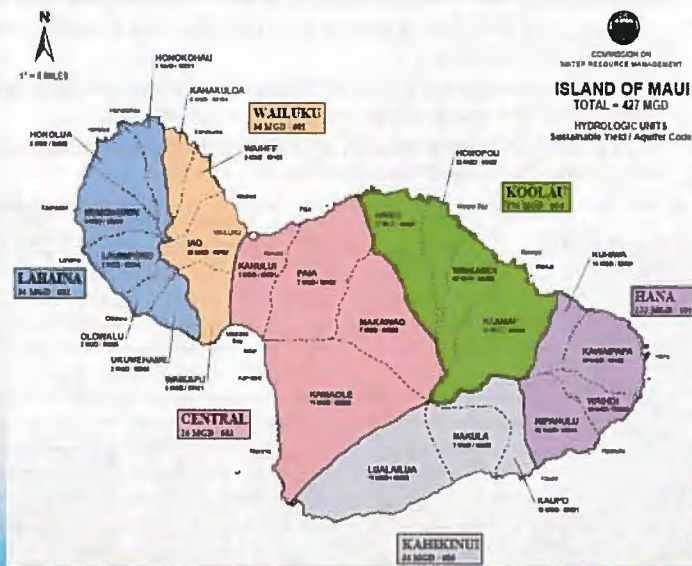
**Land Use Full Build Out Scenario:** An alternative scenario projects water demand based on full development of the County General Plan, County Zoning and DHHL land use plans over an undetermined period

**Drought and Climate Change:** Impact on stream base flows, recharge and salinity. Uncertainty make regional and long-term predictions very complex. *Climate Change Adaptation Priority Guidelines* incorporated to increase resilience and reduce vulnerability to risks related to climate change.

**Agricultural Water Demand Scenario:** Uncertainty about agricultural products market and regional crop water demand, the transition of sugarcane lands to other crops, potential future use of kuleana lands, and associated legal issues relating to water rights and priorities of use. Scenarios rely on stated assumptions and best data available. Added as a separate component for a comprehensive assessment of water demands

## Review Part I: Physical Setting: Groundwater Resources

- Groundwater is the primary source of supply for the majority of water users
- The amount of groundwater that can be developed is limited by the amount of natural recharge
- The groundwater sustainable yield is the maximum rate that groundwater can be withdrawn without impairing the water source



## Review Part I: Physical Setting: Groundwater Availability

- Sustainable yield of basal aquifers represents the maximum aquifer pumping rate assuming optimal placement of wells and pump sizes
- Drought conditions significantly impact recharge compared to average climate conditions, with a projected mean 23% decrease in annual recharge
- Withdrawals are also limited by:
  - Water use permit allocations in water management areas
  - Water quality/groundwater contamination
  - Development cost and risk

Aquifer Sector	2008 SY	Drought Recharge Reduction (%)
Wailuku	36	29%
Lahaina	34	24%
Central	26	25%
Ko'olau	175	21%
Ha'ena	122	19%
Kahikinui	34	37%
<b>Total</b>	<b>427</b>	



## Review Part I: Physical Setting: Surface Water Availability

- There are 90 perennial streams in Maui, 82 of which have been diverted to some extent
- Supplies a small proportion of drinking water island-wide but is a significant source of supply in West Maui and Upcountry.
- Availability is uncertain due to multiple factors effects of diversions on the ecosystem, lack of numerical instream flow standards, lack of gages and legal issues.
- The CWRM's mandate is to establish instream flow standards (IFS) that will protect instream uses while allowing for reasonable and beneficial offstream use

AQUIFER SECTOR	Median Flow/Q50	Low Q70	Drought Flow/Q90	Potential IFS	2009 – 2015 Average Diverted	1990 and Prior Diverted *
WAILUKU	67.83 <sup>b</sup>	51.7 <sup>b</sup>	40.2 <sup>b</sup>	N/A	41-60	107.3
Na Wai Eha (excl Kahakuloa Stream)	62.66	48.69	37.34	35.4 <sup>c</sup>	41-60	107.3
KO'OLAU	59.7	35.72	20.23	N/A	114-167	169.6
East Maui Streams in Contested Case	44.17	25.17	14.45	39.99 <sup>d</sup>		N/A
LAHAINA	40	31	22.44		20.21	56.2
CENTRAL	0	0	0	0	0	0
HANA	N/A	N/A	N/A	N/A	N/A	0.1
KAHIKINUI	N/A	N/A	N/A	N/A	N/A	0.1
MAUI ISLAND	169.18	119.74	84.24		175.21 - 247.21	333.3

a. 1990 Maui County Water Use and Development Plan  
c. CWRM 2010 decision

b. USGS 2016-5103  
d. CWRM Hearing Officer Decision 1/15/16

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## Review Part I: Physical Setting: Alternative Water Resources

### Recycled Wastewater

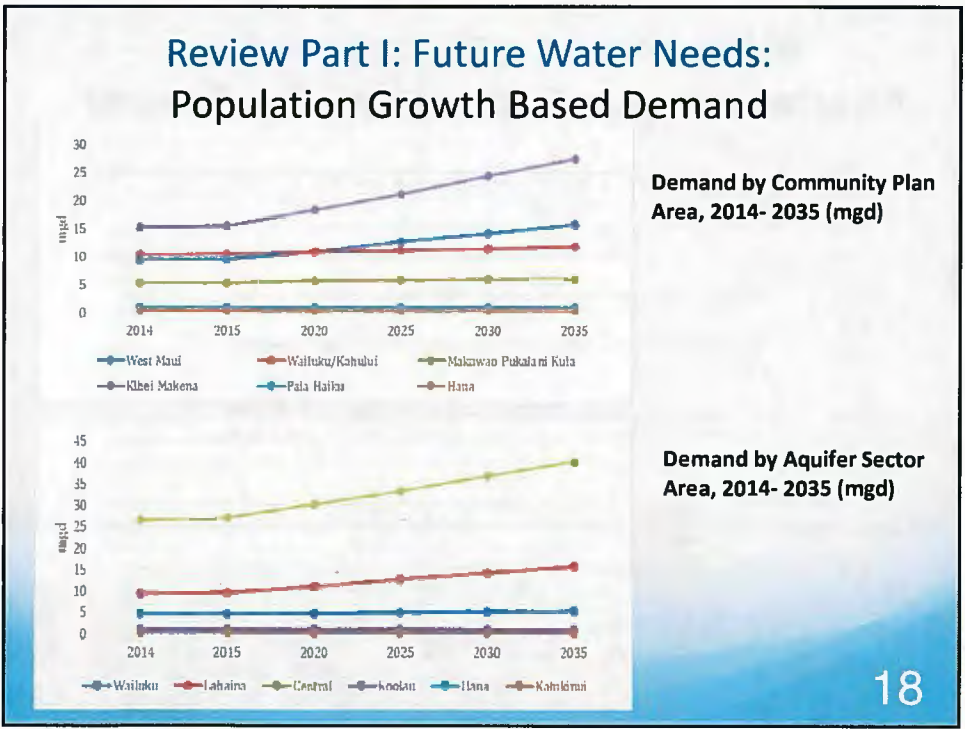
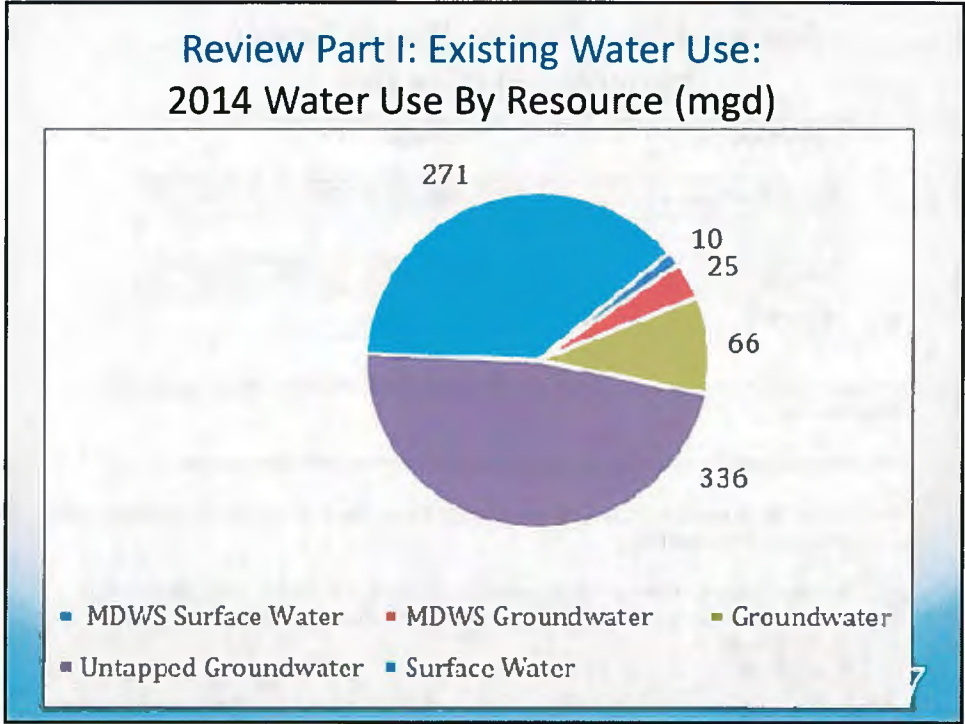
WWRF	Treatment Level	WWRF Design Capacity	Recycled Water Produced	Recycled Water Used	% of Total Produced Used	% of Design Capacity Used	Application
Wailuku Kahului	R-2	7.9	4.7	0.25	5.3%	3.2%	None
Kihel	R-1	8	3.6	1.5	41.5%	18.7%	Golf Course, Ag, Dust Control, Landscape, Fire Protection
Makena (Private)	R-1	0.75	0.08	0.08	10.6%	10.6%	Golf Course
Pukalani (Private)	R-1	0.29	0.19	0.19	100%	65.5%	Landscape
Haleakalā (Private)		N/A	0.18	N/A	N/A	N/A	Closed loop system, Sanitary purposes
Lahaina	R-1	9	3.84	0.88	22.9%	9.8%	Golf Course, Landscape, Nursery, Agriculture
<b>Total</b>		<b>25.9</b>	<b>12.6</b>	<b>2.65</b>			

**Rainwater Catchment:** Feasible where consistent rainfall

**Stormwater Reuse :** Capture and reuse of surface water runoff for non potable use. Range in technologies: source reuse (ex. rain barrels and cisterns); small lot reuse (ex. vegetated infiltration basins), stormwater capture (injection well), stormwater storage (ex. detention basin), stormwater distribution (ex. ditch or pipe network)

**Desalination:** Seawater, brackish water or treated wastewater can be processed through several desalination methods. Brine disposal and cost are issues

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## Review Part I: Future Water Needs: Agricultural Demand

Agricultural Use	Total MGD
Kuleana/Lo'i Kalo	10.89 – 15.52
Department of Hawaiian Homelands	31
Diversified Ag	20.86 – 25.0
HC&S lands	22.5 – 124.45

**Kuleana/Lo'i Kalo:** Range based on 2015 Ag Baseline and CWRM IIFS proceedings. Accounts for stream taro use

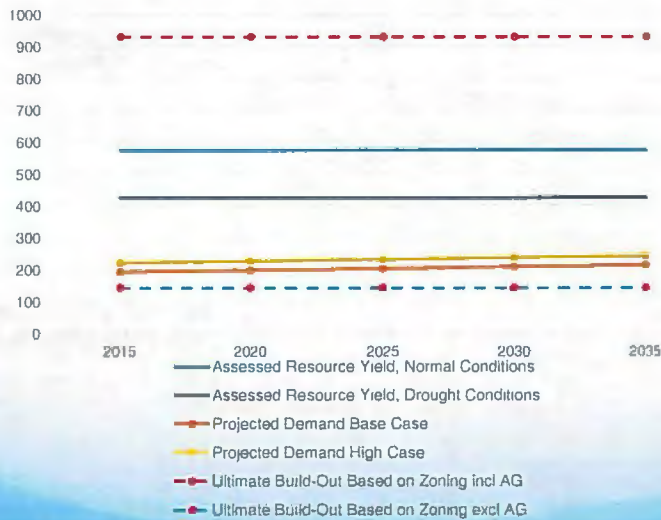
**DHHL:** DHHL's regional and island plans. Non potable demands for ag and pastoral use.

**Diversified Ag:** Range based on 2015 Ag Baseline and 20% increase, includes Kula Ag Park Expansion. Not including sugarcane and taro

**HC&S lands:** Range based on low to high scenarios: low: 25% of Important Ag Lands farmed; high: 100% of Important Ag Lands farmed. (HC&S "Diversified Agricultural Plan", 100% of plantation acreage represents 107.79 mgd)

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## Review Part I: Future Water Needs: Assessed Resource Yield and Projected Demand



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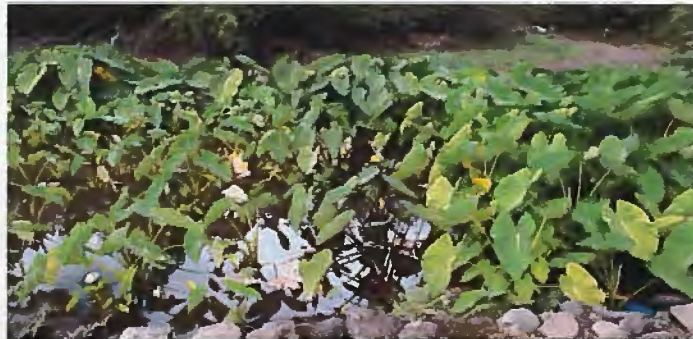
## Summary Part II: Water Resource Management, Strategies and Recommendations

### Contents

- 10. Relation to Management Framework: Ka Pa'akai analysis, water supply sustainability and quality
- 11. Water Resource Adequacy: Resource availability and uncertainties
- 12. Strategies: Resource management, conservation, conventional and alternative water sources, land use controls
- 13. Summary of Recommendations: Planning objective conflicts, recommended tradeoffs, implementation and funding

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## Summary Part II: Ka Pa'akai Analysis



- Supreme Court Ka Pa'akai O Ka 'Aina v. Land Use Commission: Agencies to protect native Hawaiian customary and traditional practices to the extent feasible.
- WUDP proposed uses of water resources accompanied by inquiries into the impacts on traditional and customary rights to ensure that proposed water resource uses are pursued in a culturally appropriate way.
- Matrix (appendix 10) briefly assesses and summarizes how each preliminary strategy may relate to protection of valued resources including traditional and customary native Hawaiian rights, including mitigation measures

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## Summary Part II: Recommendations

- 62 island wide strategies and policies to meet planning objectives are summarized in Table 13-1
- Values and principles derived from this process provide the overall guidance to define strategies.
- Region specific source development for each aquifer sector area refined in Part III.
- On a county level , strategies and policies should provide the foundation and guidance for DWS capital improvement program and budget, public/private partnerships, studies and land use decisions.
- On a state level, recommendations should provide guidance to the CWRM in their decisions regarding pumping permits, stream withdrawals, water reservations and other matters.

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## What's next?

- Refined regional water supply strategies (Sector Reports)
- Board of Water Supply - review and recommend revisions
- County Council - Adoption by Ordinance
- State Commission on Water Resource Management - Approval
- Implementation: The plan goals and objectives are achieved if the adopted policies and strategies are pursued

<http://co.maui.hi.us/2051/Maui-Island-Water-Use-Development-Plan>

Mahalo!

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