

Hawaii Water Conservation Plan



**Commission on Water Resource Management
Honolulu, HI
March 20, 2013**



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Overview

- Water Conservation Project Background
- Water Conservation Advisory Group
- Priority WC programs for implementation
- Important lessons
- Next steps

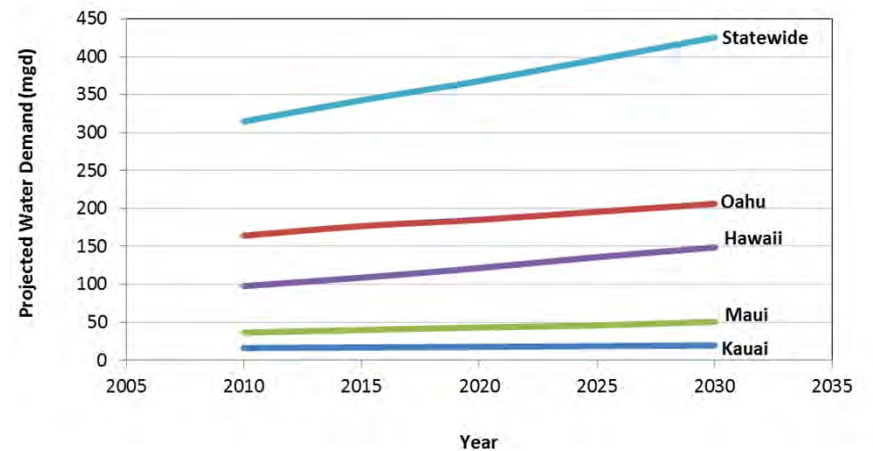


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Project Background

- Commission approved the development of program
- Partnership between U.S. Army Corps of Engineers and Commission
- Contractor CH2MHILL
- 2-year project



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Statewide Water Conservation Project Objectives

- Develop a coordinated statewide water conservation planning strategy and policy framework
- Establish a statewide water conservation program to implement the planning strategy and policy framework
- Work collaboratively with stakeholders to achieve our water conservation objectives



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Project Team

- U.S. Army Corps of Engineers
- Commission on Water Resource Management
- CH2MHILL



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Water Conservation Advisory Group (WCAG)

- 36 volunteer members in WCAG
- Government and private sector
- County water departments
- Military
- Agriculture
- Landscape industry



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WCAG Member Organizations

- Castle & Cooke Homes, Inc.
- City and County of Honolulu Board of Water Supply
- City and County of Honolulu Sustainable Building Task Force
- County of Hawaii Department of Water Supply
- County of Kauai Department of Water
- County of Maui Department of Water Supply
- Hawaii Association of Conservation Districts
- Hawaii Community Foundation
- Hawaii Farm Bureau Federation
- Hawaii Golf Course Superintendents Association
- Hawaii Hotel and Lodging Association
- Hawaii Prince Hotel and Golf course
- Hawaiian Commercial & Sugar Company
- ITC Water Management, Inc.
- Landscape Industry Council of Hawaii
- Marine Corps Base Hawaii
- Mililani Homeowners Association
- NAVFAC Hawaii
- Navy Region Hawaii Energy Team
- Office of Hawaiian Affairs
- Sierra Club Hawaii Chapter
- State of Hawaii Department of Accounting and General Services
- State of Hawaii Department of Agriculture
- State of Hawaii Department of Business and Economic Development
- State of Hawaii Department of Education
- State of Hawaii Department of Hawaiian Home Lands
- State of Hawaii Department of Transportation
- United States Army Garrison Hawaii
- United States Department of Agriculture Natural Resources Conservation Service
- United States Geological Survey
- University of Hawaii College of Tropical Agriculture and Human Resources
- University of Hawaii Office of Physical, Environmental, and Long Range Planning



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WCAG Meeting Schedule

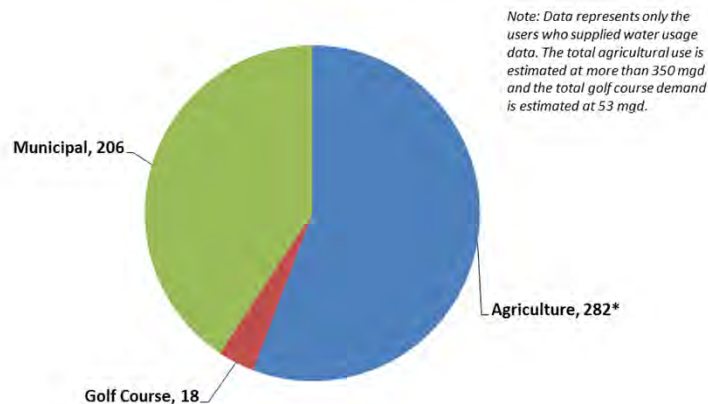
1. May 23, 2011
2. August 24, 2011
3. November 17, 2011
4. March 22, 2012
5. August 23, 2012
6. January 10, 2013



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Some Key Findings

- Water use sectors identified: municipal, military, agriculture, golf course, *landscape*
- Lack of water use data collection & reporting
- Currently unable to set target reductions
- Education and training important to WCAG
- Agriculture and municipal are largest water use sectors



Meetings Informed Planning Strategy

- Identify opportunities where there are needs for water conservation programs – and potential for sizable water savings
- Consult with affected stakeholders to select and prioritize sector-based BMPs
- Grouped top ranked BMPs into packaged water conservation program elements that would best help stakeholders achieve their goals or assist with any existing programs



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Municipal WC Program Elements

- Water conservation recognition program
- Procedure for conducting and requiring annual water loss audit
- Model ordinance for landscape and irrigation design
- Policy in support of EPA WaterSense program
- Efficient commercial equipment rebate program
- WaterSense/high efficiency equipment rebate program
- Efficient commercial equipment incentive program
- Irrigation technology demonstration and research program



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Military WC Program Elements

- Model ordinance/standards for landscape and irrigation design
- **Annual water loss program**
- Water efficient irrigation performance contracts
- Policy to install meters at users/buildings



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Agriculture WC Program Elements

- Irrigation metering demonstration project
- Irrigation metering and reporting enforcement
- Irrigation metering incentives and technical assistance
- Irrigation water purveyor conveyance efficiency education and demonstration
- Irrigation water purveyor water conservation plan requirement
- Irrigation water user workshop
- Agriculture climate station network development



Golf Course WC Program Elements

- Golf course industry water conservation award program
- Irrigation design and construction contractor registry



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Selection of Program Elements for Early Implementation by Commission

- Best opportunity for water savings in high water use sectors
- Improvement of data collection
- Emphasis on education and training
- Early actions should be achievable yet meaningful
- Commission staffing and funding constraints
- 10-year implementation plan with expanding program areas



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Priority Program Implementation for Years 1-2

- Procedure for conducting & requiring annual water loss audit (municipal)
 - Survey
 - Training and/or technical assistance
 - Initially directed at large systems
 - May lead to policy on requirement for annual water loss audit
- Irrigation metering demonstration project (agriculture)
 - Training workshop
 - Would lead to improved surface water diversion measurement and reporting
 - Simple and inexpensive methods



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Procedure for Conducting and Requiring Annual Water Loss Audit

- **Issue:** Need for water loss reporting (standardized) by public water systems (municipal sector)
- **Solution (BMP):** Water Loss Control
- **Implementation Type:** Education and Regulatory
- **Implementation Program:** Education will take place on the AWWA/IWA Water Audit methodology and AWWA Free Water Audit Software for public water systems in Hawaii. Following the training, public water systems may be required to conduct water loss audits submitted to CWRM on an annual basis.



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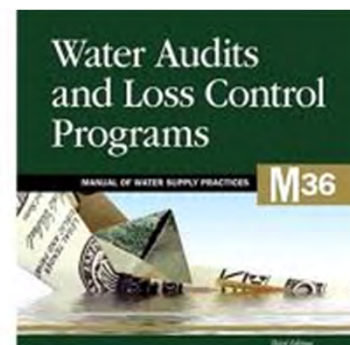


Procedure for Conducting and Requiring Annual Water Loss Audit

- **Responsibility for Implementing:** CWRM will use existing educational materials available from AWWA and other states that have implemented similar programs. Hawaii Rural Water Association and municipal water system staff familiar with this methodology could participate and assist with education statewide. Audit requirement would be phased-in based on water system size, as appropriate.



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American Water Works Association
The National Association of Public Water Suppliers



Irrigation Metering Demonstration Project

- **Issue:** Lack of water use measurement (agricultural sector)
- **Solution (BMP):** Volumetric measurement of irrigation water use
- **Implementation Type:** Education
- **Implementation Program:** Demonstration project collaborating with large water purveyors and small irrigators to install and/or operate water measurement devices on or near their diversions. Planning is for separate workshops for the two scales of use on each island. The measuring devices should be inexpensive to install, maintain, and operate. Training would facilitate required monthly water use reporting.



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Irrigation Metering Demonstration Project

- **Responsibility for Implementing:** CWRM will coordinate workshops and cost-share/technical assistance; CWRM will partner with NRCS or RC&D Councils and with USGS to conduct workshops. Irrigation water purveyors could contribute cost-share and in-kind services.



Photo Credit: USGS, Pacific Islands Water Resources Center



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Other Policy Actions

- Continue to expand CWRM role as the coordinating agency for water conservation activities between all levels of government, military, universities and the private sector.
- Continue development of water use data collection, analysis, and reporting system to enable accurate assessment of water.
- Explore policy changes to make improvements in water use efficiency and related reporting (e.g., State Water Code, green plumbing codes [IAMPO; ICC], county ordinances, etc) via the State Building Code Council, Hawaii Legislature, and County Councils.



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Other Policy Actions

- Require development and submittal of water conservation plan and annual reporting on implementation of water conservation plan measures as a condition of receiving a water use permit.
- Explore sources of supplemental funding that can be generated by CWRM to implement the Water Conservation Program.
- Review Part III of the State Water Code, the Water Resource Protection Plan and Statewide Framework for Updating the Hawaii Water Plan to ensure consistency with the appropriate water conservation policies, regulatory mechanisms and program measures outlined in the State Water Conservation Plan.



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Other Policy Actions

- Establish baseline water use and develop water conservation targets for individual sectors or water systems that can be established in the context of known, available, or anticipated future water resources.
- Explore policy changes to proactively plan for the expanded use of recycled wastewater and storm-water for agriculture, landscaping, irrigation, recharge, and industrial uses.
- Establish a water resource management public awareness campaign that incorporates climate change, energy/water nexus, food scarcity, viable agriculture, watershed management, and source protection and augmentation.



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DETECT-A-LEAK WEEK

MARCH 18-24, 2013

Please join us by spending time this week to make sure you don't have any leaks on your property. It's easy to do and, in most cases, homeowners can fix leaks without a major financial investment. Follow these easy steps to check your property for leaks:



- Turn off all your water faucets, pipes, and other water-using fixtures to make sure no water is running.
- Locate your water meter, which should be in or near the sidewalk area fronting your building or home.
- Open the meter cover and check to see if the dial is moving. If it is, you have a leak! Have the leak repaired as soon as possible.
- Visually inspect faucets, pipes, and plumbing fixtures. For toilets, use dye tablets to check for leakage. **FREE dye tablets** are available from the Board of Water Supply, City Mill, or at Satellite City Halls.
- Finally, examine your lawn for wet spots where grass seems greener. This could indicate a broken underground pipe.

**✓ CHECKING FOR LEAKS CAN SAVE WATER,
LOWER YOUR WATER BILL, PREVENT DAMAGE TO YOUR HOME.**



For more leak detection information, visit www.boardofwatersupply.com



This water conservation project is brought to you by the Commission on Water Resource Management, Board of Water Supply, County Water Departments on Kauai, Maui, Hawaii, Hawaii Rural Water Association, City Mill, Sierra Club, and the Chamber of Commerce of Hawaii.



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Important Lessons

- Universal water conservation ethic
- Many water efficiency programs underway
- Water conservation activities vary greatly between organizations & sectors
- Government should lead by example
- Build on successful programs
- Technical assistance / training should precede policy changes and regulations
- Start with small steps



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Implementation

- Convene implementation program committees
- Develop work plan for water audit training and surface water demo project
- Workshops planning
- Looking for partners to host and assist
- Beginning in 2013
- Program evaluation
- Quarterly WCAG meetings



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Questions?

