



# Overview of the USGS Pacific Islands Water Science Center

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Briefing for the Commission  
on Water Resource  
Management

July 16, 2014

U.S. Department of the Interior  
U.S. Geological Survey



# USGS - Hawai'i

Program	Funding	Employees
Geology/Hazards	\$4.0 M	30
Volcanoes (HVO)	\$2.8 M	26
Marine Geology (PCMSC)	\$1.0 M	3
Geomagnetism Program	\$0.2 M	1
Wildlife Health (NWHC)	\$0.4 M	3
Ecology (PIERC)	\$5.1 M	33
Climate (PICSC)	\$2.0 M	1
Water (PIWSC)	\$5.4 M	30
<b>Total</b>	<b>\$16.9 M</b>	<b>97</b>

# PIWSC – Quick Facts

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- USGS Cooperative Water Program provides \$1.1M in matching funds for programs with State and Local agencies
  - Available Federal matching funds is not sufficient
  - State and Local agencies contribute about two-thirds of the total cost
  - Allocate 60% for data collection and 40% for interpretive studies
- Gross funds - \$5.4 M in FY14 (60% reimbursable)
  - 80% reimbursable when considering Federal matching funds
- Move PIWSC & PIERC Honolulu offices and warehouse to NOAA facility on Ford Island, Nov. 2014
  - Significant rent savings: \$430K per year (\$700K vs. \$270K)
  - Reduce facilities costs to reimbursable customers

# PIWSC – Mission

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- Provide information to manage, protect, and enhance water resources
- Address water-related hazards
- Non-regulatory role
- Provide actionable information that is reliable, impartial, and timely

# PIWSC - Core Capabilities

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## Hydrologic Data Collection

- Climate
- Streamflow and suspended sediment
- Groundwater levels and salinity
- Water quality

## Research and Assessments

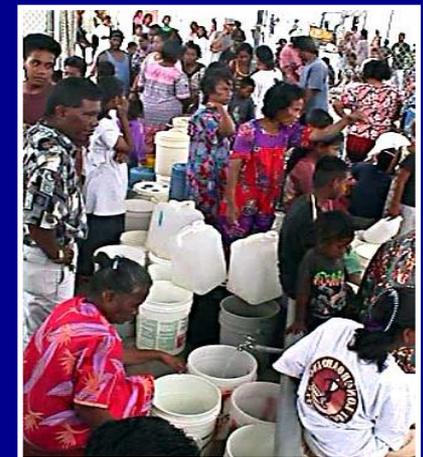
- Statistical analysis
- Hydraulic modeling
- Watershed modeling
- Groundwater flow and solute transport modeling

## Information Services

- Flood-alert systems
- WaterWatch web pages
- NWISWeb database
- Publications and presentations

# PIWSC – Focus Areas

- Groundwater Availability
- Quantity and Variability of Streamflow
- Water Quality related to Land Use
- Climate Variability and Change



# Significant External Funding Partners, FY14

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- **State and Local agencies (18), \$2.3M**
  - Hawai'i Commission on Water Resource Management, \$482K
  - Honolulu Department of Environmental Services, \$552K
  - Hawai'i Department of Transportation, \$302K
  - Guam Water and Environmental Research Institute, \$145K
  - Honolulu Board of Water Supply, \$132K
  - County of Maui Department of Water Supply, \$92K
- **Other Federal agencies (5), \$1M**
  - DoD Strategic Environmental Research and Development Program, \$630K
  - Navy Public Works, Guam, \$142K
  - National Park Service, \$100K

# Current Programs Supported by the CWRM

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- Water-resource monitoring, statewide
  - Long-term data collection at flood-alert sites to help protect life and property, reference sites to assess effects of climate change and streamflow characteristics at ungaged sites, and water-resource assessment sites to understand effects of land- and water-use change
  - Number and type of monitoring stations is periodically adjusted to meet current priorities and available funds
  - Large data gaps due to declining network of rainfall, groundwater, and streamflow monitoring stations
  - Cooperating agencies: CWRM, DOT, OHA, SCD, HBWS, HENV, MDWS, and many others
  - <http://hi.water.usgs.gov/infodata/>

# Current Programs Supported by the CWRM

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- Groundwater recharge for the islands of Maui and O`ahu
  - Develop groundwater-recharge estimates using daily water-budget model
  - Information needed to update groundwater-availability models
  - Publish findings for Maui by Oct. 31, 2014 and Oahu by Jan. 31, 2015
  - Cooperating agencies: CWRM, HBWS, and MDWS
- Connection between inland & coastal groundwater, Kona
  - Determine if groundwater from high-level groundwater system discharges into coastal system
  - Information needed to evaluate if the coastal groundwater system is affected by groundwater withdrawals from high-level groundwater system
  - Publish findings by Dec. 31, 2014
  - Cooperating agencies: CWRM, and NPS

# Current Programs Supported by the CWRM

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- **Technical assistance training**
  - Develop training curriculum, agenda, and handouts for measuring water flow and reporting water use for large-scale stream-diversion ditches
  - Provide training at workshops on Kauaʻi, Oʻahu, Maui, and Hawaiʻi Island
  - Cooperating agency: CWRM
- **Water availability during low-flow conditions, statewide**
  - Develop a statewide web-based tool to estimate natural streamflow under low-flow conditions at ungaged sites
  - Information needed to help determine instream-flow standards and to assess availability of surface water
  - Publish findings for first phase of the study by Sept. 30, 2015
  - Additional funds needed for second phase
  - Cooperating agencies: CWRM, OHA, and DHHL for first phase

# Other Relevant Programs

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- Effects of climate and land-cover changes on groundwater recharge, Maui (Pacific RISA, MDWS)
- Statistical methods to estimate climate-change impacts on low-flow discharges of Hawai'i streams (PICSC)
- Groundwater recharge and availability in eastern Moloka'i (DHHL, OHA, and MDWS)
- Groundwater recharge and availability in the Pearl Harbor Aquifer (HBWS)
- Assessment of groundwater flow and solute transport near the Red Hill underground fuel storage facility (HBWS)
- Collection and analysis of water samples for endocrine disrupting chemicals, pharmaceuticals, and trace elements from six wells in North-Central O'ahu (HBWS)
- Hawaii Volcanic-Rock Aquifer Study - Effects of withdrawals on groundwater resources for the islands of Kaua'i, O'ahu, Maui (USGS)

# Questions?

