

STATE OF HAWAII  
UNIVERSITY OF HAWAII  
UNIVERSITY OF HAWAII AT MANOA  
**WATER RESOURCES RESEARCH CENTER**  
FUNCTIONAL STATEMENT

**OFFICE OF THE DIRECTOR – Org Code: MAWRRC**

The office of the Director will administer the research and service activities of the Water Resources Research Center's (WRRC) faculty and will perform a myriad of tasks that relate to the University and State, national and international research programs of the WRRC. This office will also handle the grant funding process for the federal Water Resources Research Act amended in 1984 (PL 98-242), subsequently amended by Public Laws 101-397, 104-147, 106-374, and 109-471. WRRC will serve as a regional center which includes the Territory of American Samoa. The inclusion of American Samoa in WRRC's regional responsibility was recently approved by the US Geological Survey which manages the National Institutes for Water Resources. The Director will provide focus and leadership and encourage and maintain an environment supportive of excellence in research. The Director will act as liaison between WRRC and the Office of the Vice Chancellor for Research (VCR). In addition, the Director will represent WRRC in its interactions with local and state agencies and the national and international research communities.

**INFORMATION & TECHNOLOGY TRANSFER OFFICE – Org Code: MAITWR**

The Information & Technology Transfer Office (ITTO) of WRRC will serve to disseminate the results of the Center's research activities to a broad audience of water and wastewater agencies, environmental engineering consultants, other academic researchers, and interested members of the public. The mechanisms by which this dissemination will be achieved include bulletins and other publications, the Center's web site, workshops, meetings, and conferences, and regular biweekly seminars held every semester. This office will administer a small UH Foundation account specifically setup to invite speakers of international recognition in the areas of water.

The ITTO will also coordinate visits by scholars who often come to make contact with the Center with the intent of engaging in collaborative research efforts with Center faculty. These contacts have resulted in several long-term arrangements with foreign universities. The ITTO will also provide editorial and publications services to assist WRRC faculty in the preparation of manuscripts and reports.

**HYDROLOGICAL SCIENCES DIVISION – Org Code: MAHDWR**

Much of WRRC's research will focus on hydrology, both surface and subsurface in the context of climate change, land use changes, and population growth. Assessment and modeling of ground and surface water are of paramount importance in Hawaii, where some 99% of our drinking water comes from groundwater and where flash flooding due to intense storm episodes combined with our unique topography has caused millions of dollars of damage in recent years. WRRC's contributions to understanding how water moves in our streams and aquifers and how the anthropogenic contaminants end up in water supply wells will help guide state and local agency decisions. This division will also address issues pertaining to the usage of and the impact on water resources of potential biofuel production on the islands.

**WATER/WASTEWATER ENGINEERING DIVISION – Org Code: MAENWR**

Engineer researchers working for WRRC will address a wide spectrum of problems that call for expertise in Environmental Engineering. Examples of research conducted by this division include wastewater treatment plant design, fate and transport of agricultural chemicals, pharmaceutical compounds, and pathogens in soils and ground water, assessment and modeling of runoff

pollutant loading, development of measures to mitigate polluted runoff, evaluation of alternatives to treat landfill leachate, assessment of onsite household wastewater treatment units for un-serviced areas of the state, wastewater reuse, distributed treatment, etc. An increased focus will be on energy efficiency in water and wastewater services. This division of WRRC will perform research in support of the functions of water and wastewater utilities.

#### **WATER QUALITY/ECOLOGY/PUBLIC HEALTH SCIENCES DIVISION – Org**

##### **Code: MAECWR**

This division of WRRC will deal with issues where environmental ecology intersects water, land, and wastewater management. The division will examine the applicability of the State's water quality standards – both drinking and recreational waters and advise regulatory agencies accordingly. The researchers will work on developing alternative metrics for microbial water quality in response to the realization in the State that the water quality standards prescribed by the US Environmental Protection Agency (EPA) are inappropriate and inapplicable to Hawaiian waters. In collaboration with the John A. Burns School of Medicine (JABSOM), this division will focus on those environmental issues which directly impact public health.

Other long-term ecological research performed by this division will continue our ongoing work focusing on evaluating the ecosystem impacts of wastewater disposal practices in the County of Honolulu.

The new division will have a greater focus on chemical contamination of Hawaii's groundwater and the public health implications thereof.

#### **HUMAN/SOCIAL/ECONOMIC DIMENSIONS DIVISION – Org Code: MASDWR**

Researchers in this division of WRRC will examine the social and economic issues relating to water and other resources in the state and the greater region. Hawaii faces pressing social issues relating to increasingly scarce water resources and the allocation thereof. This is a politically highly-charged issue in parts of the state. With increased development pressure, there has been a corresponding backlash and the debate often centers around the scarcity of water. The East Maui area provides a case in point. Research into the human dimensions of water in Hawaii and the region will be an important area of focus for the Center.

#### **ENVIRONMENTAL ASSESSMENT AND PROTECTION DIVISION – Org Code: MAEVWR**

The Environmental Assessment and Protection Division will coordinate research, education, and service efforts of the new Center and the University relating to the maintenance, protection, and improvement of environmental quality in Hawaii. This division will emphasize research that directly supports state policy makers, provide science-based input to legislative environmental committees as solicited, and continue to serve as a conduit for the transfer of interdisciplinary academic and research expertise in environmental matters from the UH to the government. The division's research program will be highly interdisciplinary and focus on issues of particular importance to improving environmental management decisions in the Pacific. These issues include solid waste disposal, reduction, and management; material flows into and out of the islands; recycling and reuse; energy recovery from waste products, etc. The division will work closely with the EPA as well as other federal and state agencies in Hawaii addressing various environmental issues affecting the Hawaiian Islands and other islands in the Pacific. The division will also administer educational programs of the new Center (see strategic plan for the new center).