

STATE OF HAWAII  
UNIVERSITY OF Hawaii  
UNIVERSITY OF HAWAII AT MANOA  
OFFICE OF THE PROVOST  
**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, outreach and education 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 formally established in 2013 by the US Geological Survey which manages the Water Resources Research Institute Program. The Director will provide focus and leadership and encourage and maintain an environment supportive of excellence in research, outreach and education. 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, national and international research communities, and the national network of water resources research institutes.

**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 or regular newsletters and other publications including the development of outreach publications in support of the Center's research faculty, the Center's web site, workshops, meetings, and conferences, and a regular seminar series held every semester. This office will administer a small UH Foundation account specifically setup to invite speakers of national and international recognition in the areas of water resources.

Working with the Director, 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, population growth and the food-energy-water nexus. 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 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 various industries including 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, solutions for building and community scales for conservation, 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 Hawaii and the Pacific.

#### **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 watershed scale issues 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 public perceptions and human dimensions of water in Hawaii and the Pacific 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 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 develop curriculum focused on water resources and administer informal and formal educational programs of the Center.