STATE OF HAWAIʻI
UNIVERSITY OF HAWAIʻI
UNIVERSITY OF HAWAIʻI AT MĀNOA
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 Provost for Research and Scholarship (OVPRS). 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 and to engage and collaborate with communities, government entities, and organizations in addressing pressing water resource issues in Hawaiʻi. This division plays a vital role in bridging the gap between scientific research and local communities, ensuring that scientific results are effectively communicated and utilized to inform decision-making. This office is responsible for establishing and maintaining an open dialogue with various community members and organizations, including both urban and rural communities, with a particular focus on those with significant Native Hawaiian representation. Information dissemination will be achieved through news releases, website and social media postings, factsheets, and other publications. This division develops outreach materials to support of the Center's research faculty, students, postdocs, and other affiliated researchers. The ITTO maintains the Center's web site, and organizes workshops, meetings, and conferences, and a regular seminar series held every semester.

Working with the Director, ITTO also coordinates 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 Hawaiʻi, 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 not served by municipal waterwater treatment infrastructure, wastewater reuse, distributed treatment, solutions for building and community scales for conservation, etc. An increased focus will be on research and outreach in support of conversion of cesspools to alterative on-site waterwater treatment systems. 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 Hawai‘i and the Pacific.

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

Researchers in this division of WRRC will examine the social culltural, and economic issues relating to water and watershed scale issues in the state and the greater region. Hawai‘i 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. Research into the public perceptions and human dimensions of water in Hawai‘i and the Pacific region will be an important area of focus for the Center. A particular focus of this division is on the water research needs of communities with significant Native Hawaiian representation. Researchers in this division will work to understand and address the most pressing research and science communication needs at the community level.

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 Hawai‘i especially as it relates to water quality. 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 water-related 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. This work includes development of methods of detection and qualification of water contaminants and testing of water quality remediation methods. The division will work closely with the EPA as well as other federal and state agencies in Hawai‘i addressing various water-related environmental issues affecting the Hawaiian Islands and other islands in the Pacific. The division will also support efforts to improve science communication regarding water-related problems to affected communities.