



Atoll Water Budget Modeling, Information Transfer and Training for the Federated States of Micronesia



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Water shortages are a persistent concern for residents of atoll islands. Normally, water demand is met by rooftop rain catchment, but prolonged droughts, such as those associated with ENSO events in the western Pacific region, can exhaust water storage, leaving residents dependent on groundwater or imported water. In response to the recommendation by the FSM Advisory Council meeting of October 23, 2006 in Pohnpei, WERI researchers have developed an accurate and practical saltwater intrusion and groundwater evaluation model for atoll islands in the FSM. During April and May 2008, the developers of the model presented an initial demonstration to a limited number of available water resource managers and government officials. At this year's Advisory Council meeting on September 16, 2008 in Yap, council members specifically requested that systematic training be conducted on the model for designated users in each of the states with atoll islands. Users of the model will include local government water resource managers, environmental staff, and educators (Item III.1, Education and Professional Training, FSM Critical Water Resources Research, Education And Training Needs, September 16, 2008).

This is an information transfer project in which end-users will be trained by WERI instructors on how to operate the model and apply it to estimate the responses of atoll island aquifers in the Caroline Islands to expected types of seasonal and inter-annual changes in rainfall. It is proposed that the authors of the model will travel, in accordance with the Advisory Council's request, to Yap, Chuuk, and Pohnpei to meet with and train designated users of the model and modeling results.

The objective is train the end-users of the model and its results sufficiently that they can independently use the model and interpret the results. Such use may include making forecasts of the effects of selected changes in rainfall on atoll islands affected by significant natural events, such ENSO-driven droughts, tropical storms, or wash-over events. A second objective is to establish an ongoing technical support relationship between the authors and end-users so that there will be a continuing dialogue to support continued successful use and application of the model to water resource management in the Federated States of Micronesia.