



Water System Leak Detection Training for Kosrae State, Federated States of Micronesia



Funded by:
US Geological Survey, Water Institute Program

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Funding: \$19,070

Water system leakage is a serious problem for all utility agencies throughout the Western Pacific. It reduces the performance of the system and represents a big money loss to water utility agencies. The development of modern water distribution systems in the FSM started in 1970 with periodic upgrades sponsored through a series of US capital improvements projects. Despite this, the majority of systems operating today suffer from excess water leakages, some as high as 60% on some islands. Aside from the negative impact on revenues, such losses all too often result in water utility agencies being unable to provide their customer base with a reliable 24-hour water service. One relatively rapid and cost-effective means of overcoming this problem is to implement a simple leak detection program with appropriate equipment and training for water utilities personnel. At its 2009 meeting, the FSM Water Resources Advisory Council requested that WERI carry out a leak detection training program on all the major islands of the FSM (Yap, Chuuk, Pohnpei and Kosrae). This proposal seeks funding to implement such a training program on the island of Kosrae, which currently ranks among the most severely affected islands, insofar as no-revenue water losses from leaks are concerned. One representative from each of the other islands will be invited to participate in the program. We anticipate conducting similar training programs on other islands in future years.

The proposed training will be conducted over a period of one week and will provide participants with a workable knowledge of leak detection theory. It will also consider common cause of water leakages in distribution systems and provide participants with hands-on field experience on how to find leaks and fix them. The topics to be presented at this proposed training exercise are summarized below:

- 1) Leak detection theory and how to determine when a leaky survey is required.
- 2) Economic benefits of a leak detection survey.
- 3) How to incorporate a leak detection survey and/or permanent leak detection crew for your water facility.
- 4) How to become familiar with various sounds created by leaks and type of leaks encountered.
- 5) Types of leak detection surveys and proper record keeping.
- 6) Getting familiar with various leak detection equipment and techniques.
- 7) Field demonstration and actual leak detection scenarios and exercises. This will include field demonstration, general survey, general pinpointing, emergency pinpointing, estimating leakage, reporting, and vehicle setup