

American Water Resources Association
2009 SUMMER SPECIALTY CONFERENCE
Adaptive Management of Water Resources II
June 29 – July 1, 2009
Snowbird, UT

Monday, June 29

1:30 PM – 3:00 PM

Session 8: Adaptive Management Collaboration and Consensus Building

1. Engaging the Community and Agencies in Adaptive Management of Urban Stormwater - H Minnigh, CECIA, UIPR, Lajas, PR (co-author: Graciela I Ramírez toro)

Most of the world's population lives in urban areas and most of those were selected in areas located near or next to significant water bodies. Over the period of development most of these areas covered or diverted streams that either formed or fed those water bodies, often with only casual documentation and occasionally with no discoverable documentation at all. The problem of mapping or even discovering permanent or intermittent streams that have been covered or diverted through residential areas is common to all places but is particularly germane on islands. Caguas is the fifth-largest urban area in Puerto Rico, with about 89,000 people in 33,000 dwelling units. A pharmaceutical firm became concerned about the quality of water flowing through the parking lot of their manufacturing facility in Caguas, PR in a stream that entered the grounds from a box culvert on the margin. The stream appeared to carry raw sewage at least intermittently and, in addition to its noisome character, could present a health risk to their employees and the neighboring high-density housing. An additional concern was the fact that the stream discharged into Rio Grande de Loíza, the source of about half of the potable water for Metropolitan San Juan. CECIA was contracted to help study the problem. The stream did not appear on maps of the area and Commonwealth and local agencies felt would not engage in corrective action, the assumption being that the flow was entirely stormwater and that natural resources, planning and other non-environmental agencies had neither jurisdiction nor authority over the stream. In addition to the sewage carried in the stream there were solid and non-sanitary liquid wastes swept into or dumped in the quebrada. Such intended and un-intended pollution is common, in Puerto Rico and most of the world, particularly in urban areas. In addition to the purely technical community it was clear to the authors that the community at large would need to be engaged in both finding the stream and its watershed and in efforts to reduce contaminant loadings to the stream and this engagement is detailed in the presentation.

2. Rural Community Demands Their Right to be Heard on Water Preservation - Joe Haun, HAUNTEC, Las Vegas, NV

Water resources are an increasing concern in the United States, especially in the Southwest. Small communities such as Sandy Valley, Nevada, are finding their voice and forcing Land Developers to design projects that not only reduce consumption of this precious resource, but protect it as well. Sandy Valley is located approximately fifty miles southwest of the Las Vegas Valley, making it a major battleground in the legal arena over water rights. The residents of Sandy Valley are acutely aware of their scarce water supply. Banding together, they have rejected any additional demand on their underground water source - the Mesquite Groundwater Basin. This case study will discuss the minimal impact to the community's water source and the benefits of the development of a service station within the secluded valley. Since 1999, the residents of Sandy Valley have pleaded their case in the Nevada Court System with the Nevada State Engineer and an Arizona based company not to divert ground water from the Valley's aquifer to Primm, Nevada, for future development. In 2006, the state's Supreme Court ruled in favor of the residents. Since this time, additional municipal water rights have been requested, and this tenacious community remains at the forefront in slowing or halting these requests. This report will discuss the valuable lessons learned by working with the community as a whole, its local leaders, and political representatives. While the project's original design met all local Codes and Regulations, neighbor concerns coupled with recent court hearings resulted in a redesign of the project to best meet the demands of this small community, and reduced the cost of construction. The report will discuss the existing underground water aquifer's recharge rate, current demands, and pending requests. It will also address fuel tank storage alternatives, and leak detection devices used to significantly reduce the

possibility of contamination of ground water. In the end, understanding the community's history of protecting their water and their resentment and distrust of any type of development was instrumental in conveying the development's minimal impact to the aquifer system.

3. "Keep It Pure!"-Protecting Salt Lake City's Drinking Water - Tracie Kirkham, Salt Lake City Public Utilities, Salt Lake City, UT (co-author: Florence Reynolds)

Salt Lake City Department of Public Utilities primary mission is to provide 400,000 customers in Salt Lake City's service area with high quality drinking water. The Wasatch Front Watershed includes seven canyons along the mountains above Salt Lake City; four are called "Protected Watersheds", which identifies these canyons as source areas for drinking water. They include City Creek, Parleys, Big Cottonwood, and Little Cottonwood Canyon. Big and Little Cottonwood Canyons have four world class ski resorts and spectacular summer hiking trails. These canyons see more than 1 millions visitors each year and canyon activities have increased at a startling rate. With an increase in visitors to the Watershed Canyons, watershed and water quality protection have become a challenging priority. Salt Lake City identified the need for increased education on watershed protection and water quality in the 1999 Watershed Masterplan. The project received a boost with additional U.S. Congressional funding allocated to the Forest Service for the "Wasatch Canyons Water Quality Initiative". The goal of the initiative was to design a new and exciting public education campaign to promote watershed protection and drinking water awareness. The campaign is called "Keep It Pure-Mountains to Your Tap". This initiative provided funding that allowed for improvements in many areas. Additionally, 4th and 9th grade "place-based" activity guides were created for school children. Field components provide on-site education opportunities for students, which include snowshoeing in the winter and evaluating forest health and water quality parameters in the summer at a popular high elevation lake in the Big Cottonwood watershed. Feedback from canyon visitors has been positive. They like the look and messages of the new signage and appreciate the new sanitary facilities. The City continues to evaluate the program, and hopes to do additional surveys to quantify the community's sentiments on the program. In the City's view, by empowering the community to understand where their drinking water comes from, actions they can take to protect their water resources and impact their drinking water quality, will pay off in a strong community commitment to the protection and preservation of water sources.