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Sharing Information

Enhancing Preparedness

Strengthening Homeland Security

**Lessons Learned
Information Sharing**

INNOVATIVE PRACTICE

Amateur Radio Volunteers Protect Community Water Supply

SUMMARY

Federal preparedness grants support Colorado's structured partnership with the Amateur Radio Emergency Service (ARES), which assists in establishing and maintaining emergency communications during disasters.

DESCRIPTION

The Division of Homeland Security and Emergency Management coordinates emergency radio communication throughout the State of Colorado. The division serves a population of approximately 5.2 million residents, half of which live in the Denver metropolitan area. Denver is the largest city in a state of 104,100 square miles (8th largest) and a state-wide population density of approximately 50.3 persons per square mile.

Figure 1: ARES volunteers established data radio links atop ridges to communicate with a wastewater plant's SCADA system

Colorado uses Emergency Management Performance Grants to purchase amateur radio equipment for use in Emergency Operation Centers and mobile communications vehicles throughout the state. In partnership with State officials, ARES uses these resources to ensure functioning emergency communications during incident operations.

In 2013, Colorado experienced historic rainfall and flooding. The National Weather Service recorded rainfall amounts exceeding eight inches in the City of Boulder on September 12th, and amounts exceeding four inches the next day. That same day, the Boulder Creek, which flows roughly eastward through town, crested in downtown Boulder at 7.78 feet—the highest water level observed at that location since 1894. Thousands of residents faced power outages and evacuation orders in the Denver-Boulder area as officials called in the National Guard to assist rescue efforts. Schools, businesses, and government offices closed. Surrounding roads remained closed and impassable leaving several mountain communities isolated.

As part of the response effort, 150 ARES volunteers in Colorado's Northeast Region deployed to assist. When floodwater threatened the electronic controls of a wastewater facility serving a community of 80,000 people, ARES established a microwave SCADA

The Lessons Learned Information Sharing program defines Innovative Practice as successful and innovative procedures, techniques, or methods developed and/or implemented by the emergency management or response community to adapt to changing circumstances that others may wish to emulate.

(Supervisory Control and Data Acquisition) network using two grant-funded repeaters. This enabled ARES to collect data from sensors at the facility and take remote control of the plant. ARES maintained control of the facility for four months—preventing any wastewater from spilling into the floodwater.

INVESTMENT INFORMATION
Since 2005, Colorado has invested over $33 million in State Homeland Security Program and Emergency Management Performance Grants to establish a statewide interoperable trunked radio system that provides continuous coverage for daily operations and emergencies throughout 95 percent of the state. This capability is augmented with a $250,000 investment of Federal and state matching funds into communications equipment caches. The state manages a lending system of 100 grant-purchased radios, 25 satellite phones, and two cell-on-wheels. The caches support response efforts throughout the state, including the 2012 and 2013 fires, they also support recovery efforts—as of April 2014, 17 satellite phones maintain communications with the crews rebuilding a highway destroyed by the 2013 floods.