



Flood Control District

Quarterly Update

July 30, 2003

The ALERT Flood Warning System

The Flood Control District's *Automated Local Evaluation in Real Time (ALERT)* Flood Warning System plays a vital role in protecting Pima County residents from the effects of flooding. The ALERT system provides information about precipitation, stormwater runoff, and weather. It consists of dedicated computers, software, near real-time radar imagery, and a network of precipitation gauges, stream gauges, and weather sensors.

First begun in 1983, with eight gauges in the upper Cañada del Oro watershed near Catalina, the District has since been able to expand the sensor network utilizing cooperative agreements with the US Bureau of Reclamation, Arizona Department of Water Resources, and other agencies. It currently consists of 80 precipitation sensors, 30 stream stage sensors, and four automatic weather stations in eastern Pima County and adjoining counties.

Utilizing radiotelemetry, data is sent in real-time to the district office and to the local National Weather Service office, which uses the data to ground-truth radar rainfall estimates and to assist in issuing flood watches and warnings. ALERT data is important to the district because heavy precipitation can significantly affect flood control facilities and the many at-grade road crossings in unincorporated Pima County. Data is also useful for reconstructing storm events and is of interest

to a broad range of users, both public and private.

You may have seen some of our gauges at bridges. Many others are in remote locations. To reduce vandalism, we try to obscure them from site by using the local typography or vegetation.

Data generated by the ALERT System is now available on the internet. To see precipitation, stream stage (depth), or weather sensor data, go to the District home page at <http://www.dot.pima.gov/flood>. At the home page, click on **Flood Warning System**. At the ALERT Flood Warning System introduction page, click on **SENSOR DATA** to access data.



Capital Improvement Program Reaches Milestone

The Flood Control District has constructed over \$25 million in flood control improvements using \$12.1 million, or 56%, of the \$21.5 million in general obligation bonds approved by voters for flood control improvements in 1997. Other funding sources for construction of these capital improvements include the flood control tax levy and federal and state aid. The two largest projects were along the Santa Cruz River. Six river miles of the Lower Santa Cruz Levee was constructed from Avra Valley Road to Sanders Road at a total cost of \$17.5 million. Additionally, bank protection was installed along the Santa Cruz River from Grant Road to Ft. Lowell to stabilize and flood protect one and one half river miles along Interstate-10 at a total cost of \$6 million for river improvements and \$3 million for a new interceptor sewer line. The District has also completed the Fairview/Limberlost storm drain at a cost of \$1.2 million, two South Tucson urban drainage projects for \$1.4 million and drainage improvements in Green Valley at Drainageway #9 for \$1.2 million. 



Earth Day for Kids

Each year for the past 5 years the Flood Control District has been part of Earth Day for Kids, hosted by Pima County Natural Resources, Parks and Recreation. At beautiful Agua Caliente Park, 3rd, 4th and 5th grade classes choose 5 different half hour sessions of ecological education, all focused on 'Caring for and Understanding the Earth'. On April 22, 2003, at the Flood Control District station, we presented a hands-on learning experience focusing on water, why it is important in our lives, the scarcity of it in the desert, and why it should be respected during storms. Being outside and playing in the water makes this kind of learning FUN! This year, the 150 kids that "graduated" from our program were awarded Flood Survivor. 

Annual Floodplain Managers Conference

Pima County Flood Control was represented at the annual Floodplain Managers Conference held in St. Louis, Missouri on May 11-16, 2003. Ten years ago, the eyes of the world were focused on St. Louis when the "Great Flood of 1993" devastated the Midwest. The recovery process from this flood has had a major influence on national flood programs and policies. St. Louis is perhaps the perfect place for a flood conference. Flooding is a way of life there, since a large portion of the U.S. drains through this region. The Mississippi River flows alongside the city and the confluences of the Missouri, Illinois and Ohio Rivers are nearby. Local, state and federal government officials, along with engineers, consultants, planners, involved citizens, researchers and educators gathered in St. Louis to consider lessons learned from past flood events. Internationally recognized experts and speakers, concurrent sessions, training opportunities, workshops, field trips and networking activities allowed the 900 attendees to meet and learn from each other. Vic Rothacker, CFM, represented Pima County Flood Control and the Arizona Floodplain Management Association at the conference. Vic, past chair of the Arizona Floodplain Management Association, gave a presentation on the forming and the successful operation of state floodplain management associations. He also participated in committee meetings of the Certification Board of Regents for the Certified Floodplain Manager (CFM) program. Vic is serving as the nation-wide local government representative on this board. 

Automation and Innovation – Not Just for Floods any More

District employees Andy Wigg, Dave Janders and Tom Helfrich have completed the installation of computer hardware to allow Internet access to the weather information gathered by the county's flood warning system or ALERT system. This new system will allow other agencies and interested parties direct access to ALERT's meteorological data as well as expanding the potential application of the system beyond flood warning.

Previously, the ALERT system data was only directly accessible to the National Weather Service and Pima County Flood Control District for security reasons. With the new computer equipment, the weather data from the ALERT system is compiled on to a separate hard drive for Internet access and presented on user friendly maps of Pima County. Law enforcement, public works agencies, and the public will now have real time access to rainfall and stream flow information for use in determining road conditions as well as flood maintenance needs.

The county will also be testing applications of the system to remotely monitor other weather conditions that could impact public safety. This winter, remote monitoring of icy bridge conditions will be tested to predict if "black ice" is forming. The Office of Emergency Management is also interested in establishing weather stations to measure wind direction and speed along the interstate and railroad for use in evacuation planning and emergency response to potential hazardous material spills.  



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