

# ARIZONA WATER RESOURCES NEWS BULLETIN

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OCTOBER-DECEMBER 1980

## NATIONAL FLOOD INSURANCE PROGRAM

Citing Governor Bruce Babbitt's proclamation declaring December "Flood Awareness Month," Wesley Steiner, Department of Water Resources Director, and Charles Ott, Director of the Division of Emergency Services, have urged Arizonans to be aware of possible flood hazards and to take advantage of the National Flood Insurance Program. The program was established by Congress to enable property owners to purchase flood insurance at reasonable rates. Policies are available through any Arizona licensed insurance agent or broker.

According to Dale Peterson, the federal regional representative for the insurance program, residents of over half the communities in the state can insure their homes against flood damage up to \$35,000 for about \$88 a year. An additional \$10,000 of coverage for the home's contents can be purchased for \$35 annually. In areas of the state where the Federal Insurance Administration (FIA) has performed a flood insurance study, property owners can purchase extended limits of coverage up to \$185,000 for a structure and \$60,000 for its contents. Peterson said that within the next few years the FIA will complete studies of all Arizona communities, enabling all residents to obtain the extended coverage.

According to Ott, Emergency Services Director, a program initiated after the state's last major flood allows previous flood victims to use their flood insurance claim settlements to move completely out of the floodplain.

For further information call the Flood Control Branch of the Arizona Department of Water Resources or your local insurance agent. Arizona insurance agents and adjusters have been made aware of the plan through workshops held in the state by officials with the insurance program.

## DEPARTMENT OF WATER RESOURCES FLOOD CONTROL ACTIVITIES

The State of Arizona Department of Water Resources Flood Control Branch, headed by Frank Barrios, works

closely with local officials in floodplain management and in flood control, assistance, and information dissemination.

### Floodplain Management

State law requires all local jurisdictions to adopt a floodplain management program that delineates 100-year floodplains and controls development within them. Local agencies must notify the Arizona State Department of Water Resources of public hearings on local floodplain ordinances and furnish a copy of the regulations when they are adopted. Department staff members attend meetings of local floodplain boards to assist them in complying with state laws, and the department reviews and comments on proposed local floodplain regulations.

Currently the Department of Water Resources is in the process of reviewing state floodplain management regulations for possible modification to bring them more in line with the National Flood Insurance Program regulations.

### Flood Insurance Coordination

The state Department of Water Resources is responsible for coordinating the National Flood Insurance Program with local jurisdictions. Of the 82 Arizona communities identified as having hazard areas, all are expected to participate in the program and will be eligible to purchase flood insurance.

### Flood Control Assistance

The installation of approved federal flood control projects is dependent on the ability of local sponsors to provide funds for acquiring land rights and completing any necessary utility relocations. The Flood Control Assistance Program, created in 1973, provides state funds for 50 percent reimbursement to local sponsors for these costs. Between 1973 and 1980, over \$25 million has been appropriated for this purpose.

To date, projects completed with the assistance of this program include Sunset and Sunnycove dams at Wickenburg, the Foote Wash Project in Graham County, the Spook Hill and Cave Buttes dams in Maricopa County, and the Inlet and Outlet segments of the Indian Bend Wash Project in Scottsdale. Several other projects are in various stages of design or construction. Program disbursements during fiscal year 1979-80 included \$3.5



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million to the Flood Control District of Maricopa County and \$0.5 million to the City of Scottsdale.

#### **Alternative Flood Control Assistance**

This program was approved by the Arizona State Legislature in 1978 to expedite installation of flood control projects. The state will pay 50 percent of the installation costs of projects identified as economically feasible solutions to flood problems, if so requested by a county flood control district. Under this program the remaining 50 percent of the costs must be met by the county flood control districts. The program also includes a loan provision whereby the districts can borrow half the remaining county costs at a very reasonable interest rate.

Three projects identified as economically feasible by the department are located in Pima, Navajo, and Santa Cruz Counties: the Rillito project in Tucson, estimated cost over \$1 million; the Little Colorado River at Winslow, estimated cost over \$4 million; and Nogales Wash near Nogales, Arizona, estimated cost \$0.5 million. The counties have indicated the intention of participating in the state loan program.

#### **Special Flood Control Projects**

Following the devastating floods from 1978 through 1980, the state legislature allocated funds to the Arizona Water Commission for special flood control projects including channelization at Black Canyon City; a Salt-Gila vegetation clearing project and excavation of one mile of low flow channel; flood control works on part of the Santa Cruz River as specified in the Rio Nuevo urban development plan; channelization at the Phoenix airport and the Phoenix 24th Street bridge project.

#### **Flood Warning Office**

Recent legislation appropriated \$310,000 for the establishment of a flood warning program. The Department of Water Resources and the National Weather Service have established a flood warning office near the Phoenix airport to initiate and administer the program.

The Department of Water Resources Flood Control Branch is located at 222 North Central Avenue, Phoenix, 85004. Additional information can be obtained by writing to the Flood Control Branch or by calling Frank M. Barrios at (602) 255-1566.

### **STATE WATER RESOURCES DEPARTMENT EXPLAINS GRANDFATHERED RIGHTS**

The Arizona Department of Water Resources is mailing a million notices in January to property owners in the four Active Management Areas — Phoenix, Tucson, Pinal, and Prescott. The notices advise recipients of the need to file a formal application for a "certificate of grandfathered right" with the water department. Failure to do so by September 14, 1981 may waive any right previously held to withdraw and use groundwater. A grandfathered right permits individuals who pumped groundwater prior to passage of the new law to continue doing so.

The "irrigation right" permits a farmer to use groundwater to irrigate land for commercial agricultural production if the land has been irrigated between January 1, 1975 and January 1, 1980.

Individuals who retire irrigated land from cultivation may use the groundwater for a new, non-irrigation purpose if a "type 1 non-irrigation" right is obtained. Withdrawal of the groundwater may not exceed three acre-feet per acre per year and the right cannot be converted back to irrigation use.

The "type 2 non-irrigation" grandfathered right is based on the maximum amount of water used in any one year between 1975 and 1980. This right belongs to the owner of the land from which the water is pumped; however, if the water is drawn from leased land, the lessor owns that right.

### **GROUNDWATER DATA COLLECTED IN HUALAPAI AND BIG SANDY BASINS**

The Arizona Department of Water Resources (DWR) basic data studies for the Hualapai and Big Sandy Basins are nearing completion. The data were collected in the spring and summer of 1980 under a cooperative agreement with the U.S. Geological Survey. The results will be published in the department's hydrologic map series.

Water levels were measured at approximately 250 wells in the 3600 square mile area of the Hualapai and Big Sandy Basins. Preliminary indications are that depths to water have changed little since first measured in the early 1950s. Depths to water range from a few feet below the land surface near Wikieup to over 1300 feet below land surface in the area east of the Grand Canyon Caverns.

Water samples were collected from selected wells to determine total dissolved solids and fluoride concentrations. With few exceptions, dissolved solids in the Hualapai Basin range from about 250 mg/L to about 700 mg/L. Fluoride concentrations range from 0 mg/L to 10 mg/L. Most of the wells with excessive fluoride concentrations are located in the mountainous areas. Wells in the valley alluvium have fluoride concentrations lower than the Bureau of Water Quality's rejection limit of 1.6 mg/L. In the Big Sandy Basin, about one-third of the wells sampled had fluoride concentrations in excess of the rejection limit. No discernable fluoride concentration distribution pattern exists.

Bill Remick and Clay Cady of the DWR collected the data on the two basins and will author the maps and reports. They can be contacted at 602-255-1543. Both reports will be available to the public in early 1981.

### **CONSERVATION PROJECT**

The Tucson area has been selected by the U.S. Army Corps of Engineers' Institute for Water Resources for its first case study of recently developed water conservation methods. The focus will be on demand rather than supply management. Economic aspects of conservation measures in the Tucson area will be evaluated, and the feasibility of conservation measures for municipal and other water users will be tested. Copies of the Institute for Water Resources report, *The Role of Conservation in Water Supply Planning* (April 1979), are available to the public at the Tucson Urban Study Office, La Placita Village, 120 West Broadway, Suite 238, Tucson, Arizona 85701, telephone (602) 792-6796.

**BUREAU OF LAND MANAGEMENT  
DEVELOPING  
RESOURCE MANAGEMENT PLANS**

The Phoenix District Office of the Bureau of Land Management is planning for use and development of all natural resources on 2.1 million acres of public land in the Lower Gila South Planning Area. The affected portions of Yuma, Maricopa, Pima, and Pinal Counties are outlined on the map below (Figure 1).

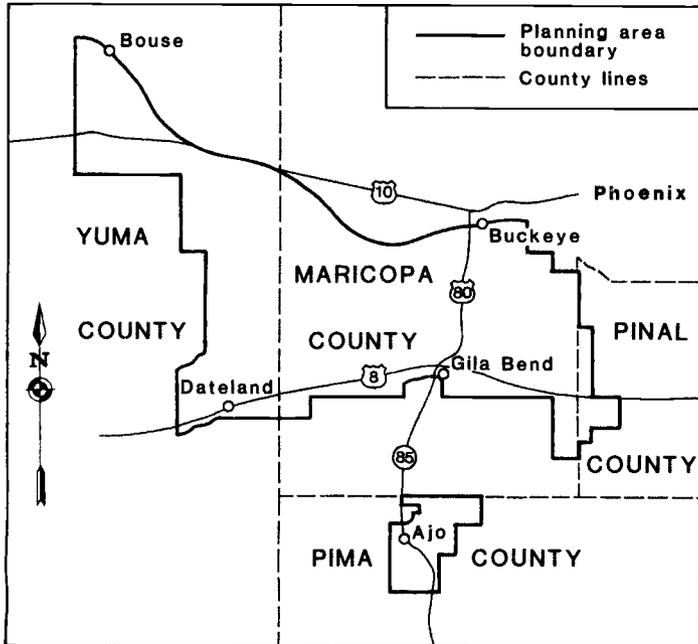


Figure 1. Lower Gila South Planning Area

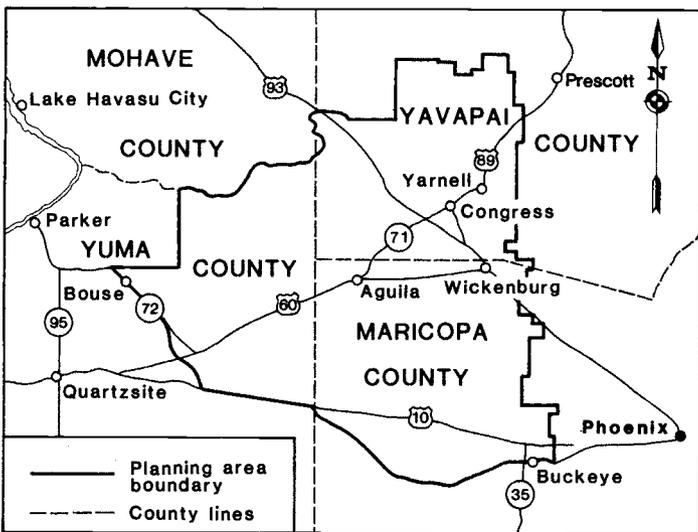


Figure 2. Lower Gila North Planning Area

The Resource Management Plan is intended as a guide for existing and potential uses of all natural resources in these areas from 1985 to 2005. Mineral and energy development, utility corridors, agricultural expansion, wildlife habitat management, recreation, wilderness, threatened and endangered species of plants and animals, archeologic and historic sites, and soil and water conservation will all be considered in the plan.

A similar plan, the Mangement Framework Plan, is being developed for 1.6 million acres of land in the Lower Gila North Planning Area (Figure 2). The plan, to be completed by 1982, will guide natural resource use in that area from 1983 to 2002. Public meetings regarding this plan will be held sometime before June, 1981.

Anyone wishing to be placed on a mailing list to receive further information regarding either of these plans should write or phone the BLM Phoenix District Office, 2929 W. Clarendon Avenue, Phoenix, Arizona 85017, telephone (602) 241-2501.

**ARIZONA DEPARTMENT OF WATER  
RESOURCES ACTIVE MANAGEMENT  
AREA DIRECTORS NAMED**

Michael McNulty, Herbert Dishlip, Verne Doyle and Robert Mason have been appointed Active Management Area (AMA) Directors by Wesley Steiner, Director of the Arizona Department of Water Resources. The new directors must formulate water management plans for their areas by 1983 in compliance with the 1980 Groundwater Management Act.

Michael McNulty will be the Tucson area director. McNulty, a native of Bisbee, has a law degree from the University of Arizona. He currently works in Washington, D.C. as an administrative assistant to Representative Morris Udall, and he has had extensive experience in water issues.

Herbert Dishlip, who manages the Central Arizona Water Control Study (Orme Dam Alternative Study) for the Water and Power Resources Service in Arizona, has been appointed director of the Pinal AMA. His office will be located in Casa Grande.

Verne Doyle, an engineer with thirteen years managerial experience, will direct the Phoenix AMA. Mr. Doyle presently administers resource programs for the Army Corps of Engineers.

Robert Mason, recently retired assistant regional director for the Lower Colorado Region of the Water and Power Resources Service, will move from Boulder City, Nevada to direct the Prescott AMA.

The new water law also established a five-member advisory council comprised of the major water users in each AMA to assist each director. Governor Babbitt is expected to make the appointments to those councils early this year.

**ARIZONA DEPARTMENT OF WATER  
RESOURCES  
DEPUTY DIRECTORS APPOINTED**

Wesley Steiner, Arizona Department of Water Resources Director, announced in November the appointment of three Deputy Directors. It was described as an initial step in organizing the staff of the new department that was given vast new responsibility and authority with enactment of the Groundwater Management Act by the state legislature last June.

Thomas Clark, formerly Deputy Director of the Arizona Water Commission and long-time assistant to Steiner, was named head of the Planning and Administration Division that oversees all aspects of state water planning and

provides administrative services for the department. Clark, an economist, has been a Water Resources Planner with state water agencies since 1967.

Philip Briggs, a civil engineer with the state water agency since 1968, will serve as Deputy Director of Engineering. Dam safety, water supply, evaluation for new subdivisions and hydrologic data collection will be under Briggs' supervision.

Don Maughan, the third member of Steiner's executive staff, will oversee the Division of Water Management. He will supervise activities of the directors of the four Active Management Areas established by the Groundwater Management Act and will be responsible for most aspects of the administration of that law.

Maughan, a civil engineer, joined the Arizona Water Commission in 1979 as Assistant State Engineer. Previously he worked many years in water resource agencies of the State of California where he became Chairman of the State Water Resources Control Board. Maughan also spent three years in Washington D.C. as Executive Director of the Federal Water Resources Council, a cabinet-level agency that makes national water policy.

Other recent appointments include Randy Weiss as the agency's public information officer, and Kathy Ferris, formerly the Executive Director of the Groundwater Management Study Commission, as special assistant.

## **MINING IMPACT ON GLOBE-MIAMI GROUNDWATER TO BE STUDIED**

The impact of mining on the limited groundwater supplies of Arizona's Globe-Miami copper mining district will be studied under a \$125,100 research contract awarded by the U.S. Department of the Interior's Bureau of Mines to the Central Arizona Association of Governments. The study will analyze the effects of mining on the groundwater of the Globe-Miami district, gather data needed for water-use planning by the mining industry, and develop recommendations for water-related management decisions for mines.

According to Department of Interior statistics, mining one ton of ore requires 700 gallons of water, and yields only 11 or 12 pounds of metal. While much of the water used in mining is recycled, the sheer volume needed can strain local water sources. Possible contaminants introduced by mining could also affect water quality.

The 500-square-mile study area is located in Gila County, about 60 miles east of Phoenix. It was selected because it includes one of the state's largest copper complexes, producing about 12 percent of Arizona's copper. Also, the area is located in the Pinal and Pinto Creek watersheds, which drain into one of Arizona's major waterways, the Salt River.

The entire water system of the Globe-Miami district will be analyzed. Surface and groundwater flow will be charted, along with any contaminant movement, and the effects of past and present mine management practices will be determined. This information will be used to develop best management practices for each mine in the study area. The work is scheduled for completion in September 1982. Results will be made public at that time.

## **MX MISSILE SYSTEM WATER NEEDS REPORTED**

The Air Force has filed more than a hundred applications for unappropriated water in Utah and Nevada. According to *Western States Water*, weekly report of the Western Water Council, Nevada applications cover some 22 valleys and claim an estimated 64,000 acre-feet over a two-year period for construction of the huge weapon system. Diversions filed for in four Utah counties total an estimated flow of 15.5 cubic feet per second. Air Force personnel have termed the filings preliminary and tentative legal and procedural actions in accordance with state water laws and procedures.

The Air Force has estimated peak annual water use for construction and operation to be about 30,000 acre-feet, or about 12½ percent of the currently estimated water yield for the area. Following construction, annual operation for the MX System is estimated at only 13,000 acre-feet.

The environmental impact study recently released by the Air Force indicates that the project demands on already scarce local water supplies will be "significant." During project construction as many as 300 wells would be drilled. Groundwater could be drawn down, wells disrupted, land subsidence occur, and the flow of natural springs might be diminished. The Air Force hopes to cope with some of these problems by drilling wells deeper than presently existing wells to tap new water reserves; by pumping water among valleys and recycling; and by purchasing existing water leases.

Responding to the various concerns previously voiced by political leaders in Nevada and Utah, Congress ordered the Air Force to study an alternate plan in which some missile clusters could be built in Texas and New Mexico. However, the Air Force report considers the Utah-Nevada plan best and it remains the first choice. The ultimate future of the System has not been decided.

## **HEALTH DEPARTMENT EVALUATES HAZARDOUS WASTE DISPOSAL SITES**

The Arizona Department of Health Services (ADHS) has recently completed a draft report evaluating ten potential waste disposal sites considered by ADHS to be acceptable from the standpoint of protecting public health and the environment. Public hearings on the proposed sites were held in December. Summaries documenting significant public comments and agency responses are included in the final report submitted to the state legislature in January.

Decades of industrial growth produced a substantial amount of industrial waste. ADHS estimates that approximately 6.4 million gallons of liquid hazardous waste and 113,000 tons of solid hazardous waste were generated in Arizona during 1980, not including wastes from the mining industry, agricultural pesticide formulators and applicators, military installations, and the utilities industry. A 5 to 10 percent annual increase in hazardous waste generation is expected as industrial development continues. Most of this waste is disposed of by methods now considered environmentally unacceptable.

Arizona does not have any hazardous waste disposal sites or treatment facilities and there is essentially no hazardous waste transportation industry in the state to transfer such waste materials to approved out-of-state facilities. This situation has resulted in inadequate handling of hazardous waste disposal on plant or leased property, or in illegal dumps, sanitary landfills, or the state's sewer systems.

Potential waste disposal sites being considered in Maricopa County are Eastern Harquahala Plain, Hassayampa, and Rainbow Valley. Yuma area sites are La Posa Plain, Central Butler Valley, Ranegras Plain and Western Harquahala Plain. Other potential sites are in Eastern Butler and Aguila Valleys in Yavapai County and Picacho, located in Pinal County. The department has recommended to the Arizona Legislature the Yuma County site in western Harquahala Valley. Two other sites recommended for "strong consideration" are Ranegras Plain and Rainbow Valley. The final site selection will be made by the state legislature.

## PUBLICATIONS

***Flood and Erosion Hazards in Tucson*** is a new report prepared by the Southwest Environmental Service in Tucson as part of a floodplain education project supported by the National Science Foundation. The report includes a discussion of Tucson's water-courses, types of flooding in the Tucson area, and a map indicating drainage within the Tucson Basin. Two local attempts at floodplain management are described: the Riverpark Plan and Rio Nuevo projects.

The report also deals with legal aspects of floodplain management, particularly at the state and local level, as well as explaining the National Flood Insurance Program and Federal Emergency Management Assistance Program. The effects of man's activities on the floodplains and means to reduce flood damages are also considered. Appendices list agencies providing flood-related assistance and information.

A copy of the report can be obtained at no charge from the Southwest Environmental Service, 115 Washington Street, Tucson, Arizona 85701. Telephone (602) 624-2353.

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The ***Ground Water Quality Atlas of the United States*** has been published under the auspices of the Research Department of the National Water Well Association for the National Demonstration Water Project.

The Atlas contains a series of maps of each state that show the chemical quality of drinking water pumped from rural aquifers. The publication is useful as a reference text for beginning or intermediate hydrology students.

The Atlas is 272 pages and contains detailed illustrations in addition to the maps. It can be ordered for \$12 from the National Water Well Association, 500 West Wilson Bridge Road, Worthington, Ohio 43085.

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Volume 10 of ***Hydrology and Water Resources in Arizona and the Southwest*** is available. This is the Proceedings of the 1980 Annual Joint Meeting of the Arizona Section, American Water Resources Association (AWRA), and the Hydrology Section, Arizona-Nevada Academy of Science, held at Las Vegas on April 11-12, 1980. Copies may be ordered from K. J. DeCook, Water Resources Research Center, 102 Douglass Building, University of Arizona, Tucson 85721, telephone (602) 626-1009. Price is \$12 per copy except to current members of the Arizona Section-AWRA, who may obtain it for \$10 per copy.

Please address your news item or comments on the News Bulletin to any of the editors:

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