

State of Arizona

DEPARTMENT OF WATER
RESOURCES ANNUAL REPORT



FY 2011

ADWR'S OPERATIONS

In 1980, the Arizona Department of Water Resources (ADWR) was created to ensure dependable long-term water supplies for Arizona's growing communities. ADWR succeeded the “authority, powers, duties and responsibilities of the Arizona Water Commission and the State Water Engineer relating to surface water, groundwater and dams and reservoirs.” A.R.S. § 45-103(A). The Director of ADWR “has general control and supervision of surface water, its appropriation and distribution, and of groundwater to the extent provided by this title, except distribution of water reserved to special officers appointed by courts under existing judgments or decrees.” A.R.S. § 45-103(B).

To carry out its statutory responsibilities, ADWR administers state water laws (except those related to water quality), explores methods of augmenting water supplies to meet future demands, and works to develop public policies that promote conservation and equitable distribution of water. ADWR oversees the use of surface and groundwater resources under state jurisdiction and negotiates with external political entities to protect and augment Arizona's water supply.

Groundwater Management

To address groundwater depletion in the state's most populous areas, the state Legislature enacted the Groundwater Code in 1980, and directed ADWR to implement its provisions. The goal of the Code is twofold: 1) to control severe groundwater depletion and 2) to provide the means for allocating Arizona's limited groundwater resources to most effectively meet the state's changing water needs.

Active Management Areas

Areas where groundwater depletion was most severe were designated as Active Management Areas (AMAs). There are five AMAs: Prescott, Phoenix, Pinal, Tucson, and Santa Cruz. These areas are subject to regulation pursuant to the Groundwater Code. To meet the statutory requirements of the Code, management goals were established for each AMA. In the Phoenix, Prescott, and Tucson AMAs, the management goal is to achieve safe-yield by the year 2025. Safe-yield is accomplished when no more groundwater is being withdrawn than is being replaced annually. In the Pinal AMA, where the economy is primarily agricultural, the management goal is to preserve that economy for as long as feasible, while considering the need to preserve groundwater for future non-irrigation uses. The goal of the Santa Cruz AMA is to maintain its current safe-yield status and prevent local water tables from experiencing long-term decline. Each AMA carries out its programs in a manner consistent with these goals while considering and incorporating the unique character of each AMA and its water users.

Management Plans

Management plans reflect the evolution of regulation under the Groundwater Code, assisting in moving each AMA toward their long-term water management goals. Through the Management Plans, ADWR establishes conservation goals for each water use sector; agriculture, municipal providers (cities, towns, and private water companies), and industrial (mining, golf course, electric power generation, dairies, and feedlots). Examples of these conservation goals include the regulatory programs for municipal providers. Currently, there are seventy-four large municipal providers in AMAs regulated under the programs described below. A large municipal provider is a city, town, private water company or irrigation district that serves more than 250 acre-feet of water per year. There are also three institutional providers and thirteen large untreated providers. (Large untreated providers serve more than 100 acre-feet of water per year.)

- Gallons per-Capita per Day (GPCD) - base program established in the Groundwater Code and first implemented in the First Management Plan which became effective in 1987. Fifteen large municipal providers are in this program, where providers are assigned an annual total gallons per capita per day allotment.
- Modified Non-Per Capita Conservation Program (MNPCCP) - established in 2008. Fifty-five municipal providers began regulation under the MNPCCP in January 2010. This program is mandatory for all large municipal water providers in AMAs that do not have a Designation of Assured Water Supply and is optional for providers with a Designation of Assured Water Supply. The MNPCCP requires participating providers to adopt a basic public education program and choose one or more additional water conservation Best Management Practices (BMPs) based on its size.
- Non-Per Capita Conservation Program (NPCCP) - established in 1992. Three providers are regulated under the NPCCP. This program requires municipal providers to implement an education program and conservation programs, and reduce groundwater pumping.
- Alternative Conservation Program (ACP) - One provider is regulated under the ACP, which is a blend of the GPCD and NPCCP.
- Institutional Provider Program (IPP) - This program was first established in the Second Management Plan and was continued into the Third Management Plan. It is designed for large institutional facilities such as prisons, military installations, schools and airports that have greater than 90% of their water deliveries for non-residential purposes. There are two institutional providers in the Pinal AMA and one in the Tucson AMA.

- Large Untreated Providers (LUP) - Large Untreated Providers provide non-potable water for landscape irrigation to at least 500 people or at least 100 acre-feet of water. Although eleven irrigation districts are large untreated providers in the Phoenix AMA and one district is a large untreated provider in Pinal AMA, there are also nine municipal water providers in the Phoenix AMA and one municipal provider in Pinal AMA that are untreated providers.

Regulatory Programs for Large Water Providers in AMAs							
	GPCD	MNPCCP	NPCCP	ACP	IPP	LUP	
Phoenix AMA	11	27	3			9	50
Tucson AMA	6	18			1		25
Pinal AMA		5		1	2	1	9
Santa Cruz AMA	1	3					4
Prescott AMA		2					2
<i>TOTAL</i>	<i>18</i>	<i>55</i>	<i>3</i>	<i>1</i>	<i>3</i>	<i>10</i>	<i>90</i>

Assured and Adequate Water Supply Program

The Groundwater Code also established requirements to ensure that water supplies are adequate to meet the long-term needs of new development. The Assured Water Supply Program requires developers of new subdivisions within AMAs to demonstrate that sufficient water supplies of adequate quality are physically, continuously, and legally available for 100 years; that any groundwater use is consistent with the AMA’s management plan and management goal; and the financial capability to construct the necessary transmission, delivery, and treatment facilities is available. Rules associated with this program require the use of renewable supplies, such as reclaimed water, surface water, and/or water delivered via the Central Arizona Project (CAP).

For areas outside AMAs, the Adequate Water Supply Program requires that the developer inform potential buyers of the availability of water for the property, but does not prevent the sale of property when a 100-year supply is not available unless the city, town, or county in which the subdivision is located has adopted the

mandatory water adequacy ordinance discussed later in this report. Requirements under these programs serve to protect consumers from the sale of subdivided land that lacks an available long-term source of water.

Recharge Program

The Recharge Program allows injection or infiltration of surface water or reclaimed water into an aquifer for storage. The Recharge Program has proven to provide a cost effective way to both store water for future use and to provide an indirect mechanism to treat and deliver renewable supplies.

Regional Planning

ADWR is also very active in regional water resource planning. Regional planning efforts include technical studies of specific areas and assistance in projecting future water needs. ADWR is in the final phase of completing the *Arizona Water Atlas*, an extensive inquiry into the state's water availability, to assist local communities with long-term planning.

Rural Water Initiative

ADWR actively participates in, or facilitates, 17 Rural Watershed Groups that represent water interests outside of the AMAs. ADWR provides technical and policy advice and assistance to these groups throughout the year. In some cases, ADWR attends multiple meetings per month with these groups. The activities of the different Rural Watershed Groups vary greatly from group to group. In areas such as the Upper San Pedro (Sierra Vista area), Coconino Plateau (Flagstaff and surrounding areas), Verde River (Cottonwood to Camp Verde), Yuma, Bullhead City and Lake Havasu City, and Mogollon Rim (Payson and surrounding areas), significant water resources planning and development is either proposed or underway to meet the water supply needs of the area. Through the efforts of these Rural Watershed Groups, within the last five years, substantial changes in water law and programs have been made. ADWR has a Special Line Item Appropriation that is used to fund personnel and water resources investigations to assist the communities with long-term planning and management programs.

Colorado River Management

The Colorado River is also a very important resource to the State of Arizona also serving seven states, several Indian tribes and Mexico. ADWR is the state entity charged with to promoting, protecting, and comprehensively managing Arizona's annual apportionment of 2.8 million acre-feet of Colorado River water. This apportionment is important to Arizona's water supply future and is critical to the state's water management policies.

Surface Water Management

ADWR's surface water activities are focused in two areas: Adjudications and Dam Safety and Flood Mitigation.

Adjudications

The State of Arizona is conducting general stream adjudications of water rights in two major portions of the state: the Gila and Little Colorado River systems and their tributaries. Adjudications are judicial proceedings conducted in the State Superior Court for Maricopa and Apache Counties to determine the nature, extent and relative priority of the water rights of all persons in each river system. This includes surface water permits and claims to surface water based upon both state and federal law. ADWR's role in the process is to provide both administrative and technical assistance to the State Superior Court.

Dam Safety and Flood Mitigation

ADWR is the sole agency responsible for the supervision of non-federal dams to reduce potential loss of life and damage to property; the management of the statewide flood warning system; assisting communities that participate in the National Flood Insurance Program; and establishing State Standards for Floodplain Management.

Water Rights Administration

Groundwater

In AMAs, groundwater pumping from non-exempt wells requires a groundwater right or withdrawal authority from ADWR. State law assesses withdrawal fees¹ and requires annual groundwater withdrawal and use reports to be filed for pumping from non-exempt wells within AMAs. Exempt wells² are not subject to these requirements. Groundwater use outside AMAs does not require a groundwater right. However, drilling a well anywhere in the state requires that a Notice of Intent to Drill be filed with ADWR and also requires the well to be constructed in conformance with ADWR's minimum well construction standards.

Surface Water

Surface water is subject to the "doctrine of prior appropriation," meaning that the first person to put the water to beneficial and reasonable use has a right superior to later appropriations. Rights to use surface water are designated through a permitting process at ADWR. Surface water permits may be used to support

¹ Withdrawal fees are statutorily required to fund ADWR's Conservation and Augmentation Assistance Programs and the Arizona Water Banking Authority.

² Wells having a maximum pumping capacity of 35 gallons per minute or less.

claims in the adjudication process. ADWR maintains records related to water rights in both computer and physical files, which are available to the public.

Hydrology Support

ADWR hydrologists serve as the technical arm of ADWR, collecting and analyzing statewide water resource data and maintaining the state's Groundwater Site Inventory (GWSI) database. Hydrologic conditions are calculated and analyzed in preparing reports in response to legislative and judicial requests, public inquiries and water management planning efforts. ADWR hydrologists are often assigned to work on the scientific components of specific research projects and are also consulted in making determinations on permit applications. Additionally, the state Legislature has supported ADWR efforts to obtain more groundwater data around the state through the Automated Monitoring Initiative. This groundwater data collection effort relies on satellite technology to obtain water level measurements in areas of the state where groundwater information is lacking.

Water Banking

In 1996, the Legislature created the Arizona Water Banking Authority (AWBA). By storing surplus Colorado River water in central and southern Arizona, the AWBA helps safeguard against future shortages on the Colorado River and assists in both meeting the state's groundwater management goals and the settlement of Indian water rights claims. ADWR provides staff support to AWBA.

Water Protection Fund

ADWR also provides staff support for the Arizona Water Protection Fund (AWPF) Commission, which was created by the Legislature in 1994 to preserve and enhance flows in rivers and streams and their associated riparian habitats. The AWPF is lead by a fifteen member commission reflecting a wide range of interests, including representatives from municipal, agricultural, and industrial water users as well as from environmental organizations.

BUDGET

The total ADWR State appropriation for FY 2011-2012 is \$12,363,800. This appropriation is restricted to special line items as follows:

Operating lump sum appropriation	\$7,443,400
Adjudication support	1,212,900
Assured and adequate water supply administration	1,771,100
Rural water studies	1,139,600
Conservation and drought program	395,700
Automated groundwater monitoring	401,100
TOTAL:	\$12,363,800

A portion of the funding for ADWR's budget comes from a \$5,698,300 General Fund Appropriation. The remainder of ADWR's budget will consist of revenue from licensing and permitting fees (HB 2007) and a new municipal assessment fee (SB 1624). During the Fiftieth Legislature of the 1st Regular Session, SB 1624 was passed, which gives the Director of ADWR the authority to assess and collect a fee from each municipality in the state, based on the population of each municipality. The fees collected will be deposited into the Water Resources Fund established by Section 45-117. In 2010, ADWR adopted the temporary fee rules through a rulemaking exemption from the formal rulemaking requirements in Title 41, Chapter 6, Arizona Revised Statutes, as authorized by HB 2007, during the Forty-ninth Legislature 7th Special Session, 2010. The permanent fee rules were approved by the Governor's Regulatory Review Council on April 5, 2011, and became effective on June 4, 2011.

<u>Fiscal Year</u>	<u>Total Appropriation</u>	<u>Actual FTEs</u>
2005-2006	\$18,796,600	227
2006-2007	\$20,789,700	239
2007-2008	\$22,763,100	236
2008-2009	\$21,401,600 ³	235
2009-2010	\$16,879,800	157
2010-2011	\$7,360,300	97
2011-2012	\$12,363,800	100

³ \$9,769,300, Water Bank In Lieu of General Fund

ACCOMPLISHMENTS IN FY 2010-2011

Agency Wide

Providing the Public with access to Online Data (www.azwater.gov)

Over the last year, ADWR has continued its commitment to providing the public with convenient access to its data and files on-line. This gives the public 24-hour access to data and also provides them with an alternative to having to contact ADWR staff. The majority of ADWR's files, including applications that are submitted, are available for public viewing through our online Imaged Records System.

Online web tools that are available include:

- Groundwater Site Inventory (GWSI) - This application can be used to find groundwater levels, accurate well locations and to view hydrographs.
- Well Registry Web (Wells 55) - This application can be used to find well registry numbers, owner information, associated water rights, and pumping data.
- Assured and Adequate Water Supply Mapping Tool – This interactive tool can be used to obtain data relating to the Assured and Adequate Water Supply Program and to determine existing and approved demand volumes throughout the State.
- Online Annual Reporting Tool – This tool allows Annual Water Withdrawal Use Reports to be filed on-line for AMA Reports, Community Water System Reports, and Designation of Adequate Water Supply Reports.
- Public Notice of Recharge Applications in Progress – As applications are submitted to the Recharge Program, they are posted ADWR's website for public review.

ADWR continues to focus on developing new options for the public to utilize, including application forms that will have the capability to be filed online. Once fully implemented, this system is planned to be used to directly populate the Department's databases without the need for labor intensive data entry.

Water Resources Development Commission

The Water Resources Development Commission (WRDC) was formed by HB 2661 (2010) for the purpose of assessing the current and future water needs of Arizona with greater focus on meeting the water needs in rural Arizona. Commission members were selected to represent statewide water users and water use sectors.

The WRDC has been tasked to: (1) compile and consider the projected water needs of each county in Arizona in the next 25, 50 and 100 years; (2) identify and quantify the water supplies currently available in each county; (3) identify potential water supplies to meet additional demands in the same time frame, and the legal and technical issues associated with using them; (4) identify potential mechanisms for financing the acquisition, treatment and delivery of water supplies; and (5) make recommendations regarding further studies or necessary legislation required for implementation. The WRDC will prepare a report of its findings and recommendations and submit it to the Governor, the Speaker of the House, the Senate President and the Secretary of State by October 1, 2011.

To achieve its objectives, the WRDC has formed five committees: Population; Water Supply and Demand; Environmental; Finance; and Recommendations. The committees have met numerous times and committee agendas, meeting summaries, presentations and other work products can be accessed through the ADWR web site.

Water Management Division

Blue Ribbon Panel on Water Sustainability

Following Governor Jan Brewer's commitment to collaboration on water resource issues, former ADWR Director Herb Guenther, former Arizona Corporation Commission (ACC) Chairman Kris Mayes, and former Arizona Department of Environmental Quality (ADEQ) Director Ben Grumbles (collectively the Executive) initiated a statewide effort aimed at improving the long term sustainability of Arizona's water supplies through increased conservation and recycling.

A Blue Ribbon Panel on Water Sustainability (Panel) was formed to identify and overcome obstacles to increased water sustainability. The Panel was challenged to provide advice to ADWR, ADEQ, and the ACC on the technical, legal, and policy aspects of promoting recycling of wastewater, gray water, industrial process water, and storm water. While there are many opportunities to increase water conservation and recycling, an early priority of the Panel was to focus on wastewater reuse through detailed examinations of water quality, regulatory impediments, infrastructure requirements and public perception challenges that could limit the increased use of this important water supply.

Membership on the Panel was designed to facilitate discussions between Arizona stakeholders involved in identifying regulatory impediments and drafting new strategies to advance water conservation and increase the use of recycled waters. In December of 2009, the Executive identified and requested members to participate in this effort based on their knowledge and leadership in Arizona water

issues. The Panel membership was composed of 40 members representing large and small cities, counties, agriculture, industry, Indian Tribes, environmental interests, Arizona universities, legislative leaders, and other leaders in Arizona water issues.

On November 30, 2010, the Final Report of the Governor's Blue Ribbon Panel on Water Sustainability was released. The report contains 18 sets of recommendations organized into five categories: Education/Outreach, Standards, Information Development & Research Agenda, Regulatory Improvements, and Incentives. The Final Report is available on the ADWR website.

AMA Water Use Demand and Supply Assessments

The Tucson, Prescott, Phoenix and Pinal AMAs *Draft Demand and Supply Assessments* have been published and presented to each of the five AMA Groundwater Users Advisory Councils. These Assessments are a compilation and study of the historical water demand and supply characteristics in each of the AMAs from the year 1985 through 2006. Each Assessment also includes several water supply and demand projection scenarios to the year 2025, including scenarios with reductions in surface water due to potential climate change. The Assessment for the Santa Cruz AMA is scheduled for completion in August of 2011. These Assessments are planned to serve as precursors for the development of the Fourth Management Plans for the AMAs. Staff also used the Assessment data as the beginning point for the data, and suggestions, for three of the WRDC subcommittees.

Assured Water Supply Re-Designation Process for the Phoenix AMA

In September of 2010, several of the cities within the Phoenix AMA were re-designated as having an Assured Water Supply. These cities were Chandler, Gilbert, Mesa, Phoenix, Scottsdale, Tempe, Avondale, Peoria, Glendale, Goodyear, Surprise, El Mirage, and Water Utilities Community Facility District (WUCFD Apache Junction). When ADWR adopted the Assured Water Supply Rules in 1995, a number of Phoenix AMA water providers applied to become designated as having a 100-year assured water supply. This designation allowed growth to occur within designated service areas because their water supplies were determined to be physically, legally, and continuously available for a 100 year period, were sufficiently reliant on renewable supplies, and limited groundwater use. If groundwater was used, the majority of that water needed to be replenished. The designations were only issued for a period of approximately 10 years and the majority of the designations were due to expire in 2010.

ADWR and the cities initiated this process of re-designation in 2007. ADWR staff met with the water providers individually and in group settings during the process, working out details of the applications, data needs, and groundwater modeling

results. After many months of work, the designations were finalized in September of 2010. The cities of Chandler, Gilbert, Mesa, Phoenix, Scottsdale, Tempe, Avondale, Peoria, Glendale and WUCFD (Apache Junction) were designated out to 2025. The City of Surprise and El Mirage were designated out to 2020 and the City of Goodyear was extended out to 2016.

Restoration of Extinguished Irrigation Grandfathered Rights

ADWR has received permission from the Governor's Office to amend its Assured Water Supply Rules to address concerns raised by the agricultural and development communities regarding agricultural lands within AMAs that had retired their groundwater rights in exchange for assured water supply extinguishment credits during the years of 2005, 2006, and 2007, in anticipation of development occurring on the lands. Due to the economic recession, many of these lands have not been developed and are not anticipated to be developed in the near future. Because these rights had been extinguished, the lands no longer had groundwater rights, and therefore could not be returned to agricultural production, creating an economic hardship for the landowners. These idle, vacant lands also create air quality issues and negative aesthetic values for the communities where they are located. ADWR has initiated a rulemaking proceeding to amend A.A.C. R12-15-723 to allow the owners of these lands to apply to ADWR to have their extinguished groundwater rights restored if certain conditions are met. The Department has filed a Notice of Proposed Rulemaking and a Notice of Supplemental Proposed Rulemaking with the Secretary of State for this rulemaking.

Drought Program and Conservation Outreach

ADWR continues to post the monthly and quarterly drought status updates and facilitate the biannual Governor's Drought Interagency Coordinating meetings. At both the November 10, 2010 and May 9, 2011 biannual meetings, it was recommended that the Arizona's Drought Emergency Declaration (PCA 99006) and Drought Declaration for the State of Arizona (Executive Order 2007-10) remain in place.

ADWR and the Arizona Municipal Water Users Association collaborated on a new, interactive website for the April 2011 Water Awareness Month campaign. The campaign included an interactive website and the use of social media to promote statewide water conservation activities, events, tips, and resources. A variety of publications and e-newsletters included information about Arizona's Water Awareness Month (Water Resources Research Center newsletter, Prescott and online Scottsdale Republic, e-news, and the Alliance for Water Efficiency), and staff participated in a presentation for the University of Arizona Water Sustainability Program Speaker Series.

Surface Water Division

Flood Hazard Management

Installation of Flood Warning Equipment following Shultz Fire

Following the July 2010, Shultz Fire in Coconino County, ADWR installed three rain gauges on the east slopes of the San Francisco Mountains and one radio repeater that transmits the data to the National Weather Service (NWS) office in Flagstaff and the Arizona Flood Warning System website. The east slopes of the San Francisco Mountains were severely damaged by Fire. The gauges were installed rapidly in order to be used by the NWS office in Flagstaff to assist in issuing warnings and watches during the 2010 monsoon season. The gauges were installed per Burn Area Emergency Response (BAER) Team recommendations. The BAER Team included staff from the US Forest Service, Arizona Division of Emergency Management, USDA Natural Resources Conservation Service, Coconino County and other entities.

Dam Safety Inspection

ADWR is responsible for the safety of nearly 245 non-federal dams in Arizona. Arizona regulations require that state personnel inspect high hazard potential dams annually, significant hazard dams triennially, and low hazard dams every five years. During inspections, state personnel identify conditions that may impair or adversely affect the safe operation of the dams. Personnel also review engineering assessments and monitoring reports submitted for the dams prior to and subsequent to inspections. After the inspection, a written report is returned to the owner identifying conditions and recommendations for needed maintenance work. During 2010, ADWR conducted a total of 98 inspections on non-federal dams was, including 73 high, 14 significant, and 11 low hazard potential dams.

Dam Safety Permitting

ADWR continues to provide valuable oversight and guidance for potential rehabilitation projects at twelve deficient dams. ADWR works closely with the Flood Control District of Maricopa County (FCDMC) and Magma Flood Control District in Pinal County to expedite review and processing of construction permit applications in order to secure millions of dollars in time-sensitive federal funding. Three of these project applications were submitted and approved for construction to commence the following year.

Rio Salado Dam (Tempe Town Lake)

In March 2010, ADWR had approved a permit for the replacement of the four bladders of the downstream Rio Salado Dam; however, construction work was delayed for several months due to flows in the Salt River. On July 20, 2010, one of the four inflatable bladders burst, causing the release of the lake's contents into

the Salt River bed. ADWR staff worked diligently with the City of Tempe to assist them with obtaining a permit to begin construction of the replacement structure. On July 30th, ADWR approved changes to the construction plans and on September 30th, granted the City the approval to refill the lake. The City of Tempe successfully implemented their Emergency Action Plan and no injuries or damages were reported.

Community Assistance for National Flood Insurance Program

ADWR performed agreed-upon work tasks for its Community Assistance Program–State Support Services Element (CAP-SSSE) grant from the Federal Emergency Management Agency (FEMA). ADWR prepared Community Assistance Visit (CAV) Reports for ten Arizona communities participating in the National Flood Insurance Program (NFIP). The purpose of a CAV is to evaluate a community’s overall floodplain management program. The CAV starts with a field tour to photograph and to document development within the FEMA 100-year floodplain. A CAV meeting is then conducted with community officials involved in the floodplain management program, and the development and permitting process. A CAV report, documenting the findings, is sent to the community and to FEMA Region IX.

Risk MAP Partnership

ADWR continued its collaboration as a Cooperating Technical Partner with FEMA in the Risk MAP program. The vision for Risk MAP is to deliver quality data that increases public awareness and leads to action that reduces risk to life and property. Through this collaboration, ADWR helps to identify flood hazards, improve flood mapping, and support coordination and communication with FEMA Region IX and local community floodplain officials in Arizona’s 103 NFIP participating communities.

Assistance to the General Stream Adjudications

ADWR completed several important reports and analyses requested by the Superior Court and Special Master, including:

- ADWR served new use summons to potential claimants. They were served to new applicants who filed notices of intent to drill wells and applications for surface water rights between January 1, 2009 and December 31, 2009. In the fall of 2011, ADWR will serve new use summons to potential claimants who filed new applications between January 1, 2010 and December 31, 2010.
- ADWR prepared and filed a report in the Gila River Adjudication responding to comments and objections on its June 2009 Subflow Zone Delineation Report for the San Pedro River Watershed. ADWR’s 2011 report summarizes the technical comments and objections received and

- presents ADWR's responses, together with supporting tables, figures and appendices.
- A supplemental report was prepared and filed, that addresses certain land ownership issues associated with the U.S. Bureau of Land Management's federal reserved right claims for the San Pedro National Riparian Conservation Area (SPRNCA), which is located within the San Pedro River Watershed. The SPRNCA land ownership report includes a description of the project area, data sources and analysis, and ADWR's findings together with supporting figures and appendices.
 - ADWR commenced field work to verify existing de minimis uses meeting the criteria for certain small domestic, stockpond, and stockwatering uses in the Sands Group of Cases, as directed by the Special Master to the Gila River adjudication court.

Hydrology Division

Groundwater Modeling

The Groundwater Modeling Section completed major studies and published the following:

- Modeling Report No. 22; the 100-year Predictive Scenarios used for the Determination of Physical Availability in the Phoenix AMA
- Modeling Report No. 23; Geological Update for the Combined Salt River Valley and Lower Hassayampa Regional Groundwater Flow Model Areas in the Phoenix AMA

The Groundwater Modeling Section also worked on the following groundwater models and projects:

- Updated and improved the Tucson AMA Model
- Continued building and calibrating the Pinal AMA Model
- Updated and improved the Prescott AMA Model
- Continued building and incorporating new data into the Phoenix AMA Model (combined the Salt River Valley and Hassayampa Models)
- Constructed and documented the Assured Water Supply Baseline Model Scenario for Assured Water Supply applications for the Phoenix AMA
- Calculated the water in storage and projected water levels in the Buckeye Water Logged Area

Field Services

The Basic Data Unit conducted approximately 2,700 water level measurements statewide at ADWR-Groundwater Site Inventory Index well locations, and at special monitoring network locations in the Coconino Plateau, Big Chino basin, Payson/Tonto basin area and Santa Cruz AMA.

Performed new installations, automated water level data collection, operation and maintenance of over 120 statewide automated monitoring sites including wells in state and national parks, on Arizona State Trust Lands, BLM land and installed in various irrigation district, industrial, municipal and private wells.

The Geophysics and Survey Unit completed several gravity and subsidence studies and published reports and maps on Advanced Land Observing Satellite Data for Land Subsidence Monitoring in Arizona, Alaska Satellite Facility News and Notes Volume 6, Number 4, Fall 2010 Issue.

Colorado River Management

Shortage Sharing and Water Management Agreement with Mexico

On December 10, 2010 the United States and Mexico approved Minute 318 in response to extensive damage suffered by Mexico to its water delivery infrastructure and farmland as a result of a major earthquake in April of 2010. The International Boundary and Water Commission (IBWC) facilitated discussion between the US and Mexico to develop a Treaty amendment to allow for immediate water management strategies to address Mexico's inability to take full delivery of its Colorado River entitlement as provided in the 1944 Treaty with Mexico. ADWR participated in a process, along with the IBWC, the Bureau of Reclamation, the other Basin States, and Mexico to find mechanisms that would allow Mexico to reduce its water deliveries through 2013 and allows Mexico to request recovery of these volumes at a later date. This agreement would assist Mexico by avoiding a loss of a portion of its annual allotment and would provide a tangible example of the type of Bi-National cooperation that is in the clear interests of both parties.

Because of the Bi-national cooperation exhibited in the prompt enactment of Minute 318 (and the accompanying Minutes 314 and 317, which address enactment of emergency deliveries to Mexico and long-term planning), the US (including ADWR) and Mexico are now participating in a bi-national process to develop consensus on comprehensive water management, including sharing shortages, on the Colorado River. The IBWC has put a very short timeline on these activities and is moving toward completion in late 2011 or early 2012.

Colorado River Basin Water Supply and Demand Study

Significant effort has been devoted to the development of the Colorado River Basin Supply and Demand Study. The Study is a collaborative effort of the seven Colorado River Basin States, the Bureau of Reclamation, Indian Tribes, and other interested entities to identify projected water supply and demand imbalances throughout the Basin through the year 2060 and to analyze potential mitigation

measures. The first Interim Study Report was released in June 2011 for public review and comment. The Final Report will be issued in mid 2012.

CRITICAL CHALLENGES/OPPORTUNITIES

Issue 1: Reduction of Groundwater Reliance in the Five AMAs

The Groundwater Code establishes management goals for each of the AMAs. For the Prescott, Phoenix, and Tucson AMAs, the goal is to reach safe-yield by 2025. Safe-yield is accomplished when no more groundwater is withdrawn from the aquifer than is annually replaced. The consequence of not achieving safe-yield will be to threaten the long-term availability of water supplies for existing homes, industries and communities in AMAs. The Pinal AMA management goal is to allow development of non-irrigation uses and to preserve existing agricultural economies for as long as feasible, consistent with the necessity to preserve future water supplies for non-irrigation uses. The Santa Cruz AMA management goal is to maintain a safe-yield condition in the AMA and to prevent local water tables from experiencing long-term declines.

One tool to assist the AMAs to achieve their goal is the adaption of a series of five groundwater management plans to be implemented in sequence from 1980 through 2025. ADWR is currently initializing the Fourth Management Plan, which it anticipates completion in 2013. The Code mandates the inclusion of progressively more restrictive groundwater conservation requirements and methods to supplement groundwater supplies from the First Management Plans through the Third Management Plans. The Code is specific as to what programs must be included in each sequential management plan and ADWR has met the statutory mandates requiring the establishment of a water rights system and the continuing development and refinement of mandatory conservation requirements for industrial, municipal, and agricultural water users. For subsequent management plans, the statutory requirements are more vague, which implies the need to conduct a thorough assessment of the status of each AMA prior to the development of the Fourth Management Plan.

Phoenix AMA

The Phoenix AMA is currently in safe-yield, which is a significant achievement in the largest populated section in the state. In addition to reducing groundwater pumping, communities and individuals have made substantial investments in the utilization of renewable water supplies in this AMA, both directly and through recharge and recovery, water banking, water recycling, and utilization of renewable water supplies. ADWR and its regulated community have made large strides in ensuring there are sufficient supplies for future development and to provide back-up supplies for times when surface water supplies are limited. After

review of the Phoenix AMA Assessment, it is clear that the challenge is to maintain this safe-yield condition in this AMA. Facilitating the delivery of renewable water supplies into areas where historic groundwater declines have occurred will be an important focus of ADWR's efforts in this basin and will assist in ensuring that current and future citizens will have a long-term assured water supply.

Tucson AMA

The Tucson AMA has been a model for the efficient use of water supplies, which is important in light of limited availability and direct utilization of renewable supplies. While the recycling of water is an important element of the Tucson AMA nearly achieving safe-yield, more can be done to increase the use of this source of water both for direct uses and recharge and recovery efforts. The focus of our efforts in this AMA will be on increasing the direct use of Central Arizona Project water and recycled water. This will be the key to achieving and maintaining safe-yield in this AMA.

Pinal AMA

The goal of the Pinal AMA is unique; there is recognition of the importance of agriculture to the economy of this region. However, there is also a need to preserve water for current and future non-agricultural uses. In 2007, a major effort was culminated to recognize the need to preserve water supplies for future municipal and industrial uses in the modifications to the Pinal AMA Assured Water Supply Rules. These modifications were a community-driven effort supported by the findings of the Governor's Water Management Commission and the Third Management Plan water budget and analysis. Because of the recent downturn in the economy, there has not been a real opportunity to evaluate the impact of the potential savings from the rule modifications. Until additional time has elapsed and growth increases in this AMA, efforts should be focused on ensuring there are continued opportunities for the direct use of renewable water supplies in the agricultural sector as well as securing renewable water supplies for future municipal and industrial development.

Santa Cruz AMA

The Santa Cruz AMA was split from the Tucson AMA in 1994 in recognition of its unique hydrology and the importance of the Santa Cruz River to its economy. The goal of this AMA is to maintain its current safe-yield status and protect the water levels within its boundaries. With significant residential development in this area and without Assured Water Supply Rules that reflect its unique goal, the ability to achieve this management goal will be in jeopardy. The Fourth Management Plan for this AMA should be focused on developing mechanisms such as recharge of underutilized reclaimed water and well spacing requirements that reflect the goal of protecting existing water levels.

Prescott AMA

The Prescott AMA was declared by ADWR to be out of safe-yield in 1999. Its management goal is the same as the Phoenix and Tucson AMAs, which is to achieve safe-yield by 2025. The availability of renewable water supplies is limited in this AMA, although opportunities do exist for the use of renewable water supplies and reclaimed water through aquifer augmentation, direct delivery or through recharge and recovery. The proliferation of exempt wells in this AMA is also a challenge to maintaining the availability of groundwater supplies. The importation of water from the Big Chino sub-basin of the Verde River groundwater basin is a tool provided in statute to assist this AMA in achieving its management goal. Efforts should be focused on developing long-term reliable renewable water supplies and increased efficiencies of existing uses of water in this AMA.

Throughout the AMAs, ADWR will approach the Fourth Management Plans more as Plans for success than a document that simply identifies the statutory requirements for the main water using sectors. In these Plans ADWR, in cooperation with regulated communities and the public, will build on past successes but recognize that additional observations should be considered, including:

1. Conservation will only get us so far. We will continue to address meaningful conservation requirements, but also will review the “incentives” for utilization of renewable water supplies, reduce the complexity and the administrative workload necessary to implement these programs, and be diligent in their enforcement.
2. Have serious discussions regarding the AMA goals and the implications to the State of not reaching them.
3. Consider different approaches to water management among the AMAs, recognizing local conditions, economic, and community values.
4. Address the limitations of the Management Plans and underlying authorities as we determine what course of action to follow.
5. Recognize sub-area issues and consider alternative management strategies to address areas where conditions are positive and conditions are negative.
6. Develop, in cooperation with local water users and other water resource entities (CAWCD, AWBA, CAGR, etc), a long-term water management strategy, tailored to each AMA, identifying specific actions and resources that will be required to accomplish this strategy.

Issue 2: Ensuring Long-Term Water Supplies for Future Generations

One of ADWR's most important roles is securing water supplies for future generations. As such, when the Groundwater Code was adopted in 1980, it changed the water adequacy requirements for new subdivisions within AMAs by requiring developers of subdivided land in an AMA to obtain a determination of a 100-year *assured* water supply from ADWR before the plat for the subdivision can be recorded and a public report can be issued by the Arizona Department of Real Estate ("ADRE"). A.R.S. § 45-576. In order to obtain a determination of assured water supply, developers must demonstrate that a water supply of adequate quality is physically, continuously and legally available for 100 years, that the developer has financial capability to construct any necessary delivery and treatment facilities, and that any groundwater use is consistent with the management plan and management goal of the AMA.

Except for counties and municipalities that have adopted mandatory adequacy requirements as allowed by A.R.S. §§11-806.01(F) and 9-463.01(O), areas outside AMAs are not subject to the assured water supply requirements, but remain subject to the adequacy provisions of A.R.S. § 45-108. Limited consumer protections in areas outside of AMAs provide residents with less assurance of a future water supply than residents within AMAs. Consumer protection is weaker in two ways. First, outside AMAs, only the first purchase of a new subdivision lot must receive notification of the sufficiency of the water supply which could allow subsequent purchasers of homes found to have inadequate supplies with no notice of this determination. Within AMAs, new subdivisions must have a sufficient water supply before any lots are sold. Second, well spacing is regulated in AMAs but is not regulated in areas outside AMAs. Thus, outside AMAs, new large wells may be drilled near a well serving a subdivision, causing the subdivision well to go dry.

The limited consumer protections in areas outside AMAs raise several concerns regarding the water supply on which those homeowners rely:

- ❖ ***Need for more assurance of sufficient water*** – The adequate water supply provisions, applicable outside AMAs, require ADWR to issue a report on the sufficiency of the water supply, but do not prohibit the development or sale of subdivision lots in the absence of sufficient water. If ADWR determines that the water supply is insufficient, the developer is required only to notify potential buyers by displaying the water supply information in promotional materials and subdivision lot sales contracts. Only the original purchaser is entitled to this notification regarding the water supply, as there is no requirement that the water supply information be disclosed to subsequent purchasers when a subdivision lot is resold. As mentioned

above, this contrasts with the assured water supply provisions applicable within AMAs, which prohibit the development or sale of subdivisions that do not have a sufficient 100-year water supply, thereby protecting consumers from purchasing subdivision lots with insufficient water to meet their needs.

In 2007, SB 1575 was enacted to address the inequity between the two sets of requirements in response to recommendations from the Statewide Water Advisory Group (SWAG). SB 1575 gave specific authority to cities, towns and counties outside AMAs to require developers within their jurisdictions to demonstrate a 100-year adequate water supply before platting and selling lots. A county may adopt such a requirement only upon the unanimous vote of the board of supervisors. To date, only Cochise County, Yuma County, the Town of Patagonia, and the City of Clarkdale have adopted such requirements. All other areas of the state outside AMAs are still regulated under the original adequacy provisions which allow the sale of subdivided land with findings of water supply inadequacy.

- ❖ ***Coordinating Long-Range Statewide Planning*** - The need for statewide regional planning is an ongoing issue. This includes all areas of the state including outside of AMAs, rural Arizona, and areas along the Colorado River. The WRDC has been tasked with assessing the current and future water needs of Arizona, focusing on meeting the water needs of rural Arizona. WRDC will prepare a report of its findings and recommendations. ADWR has a leadership role and is coordinating this effort.

Issue 3: Surface Water Permitting

ADWR lacks authority to: bring administrative enforcement actions for violations of the state's surface water laws; manage the use of surface water resources pursuant to water rights or claims; or resolve disputes between surface water users. When ADWR receives a complaint that a person is violating surface water laws, it attempts to persuade the violator to comply. If that fails, ADWR requests the appropriate County Attorney or the Attorney General investigate and take proper enforcement action. Certain violations of the surface water laws have been classified as class 2 or 3 misdemeanors and may be prosecuted by local law enforcement agencies, the county attorney or the Attorney General. See A.R.S. §§ 45-112 and 45-190. In some cases, the public is frustrated by ADWR's inability to administer the law and resolve surface water complaints.

CONCLUSION

ADWR has continued to make progress to secure long-term dependable water supplies for Arizona's future, despite challenges presented by budget limitations and the reduction in staffing.

Challenges to providing a sustainable water supply are numerous. Competition for water throughout the Southwest continues to increase as neighboring states experience similar rates of growth. Arizona must continue to be vigilant to protect its water rights, particularly its rights to Colorado River water. It is essential that our State continue to play a prominent role in Colorado River water supply, operations and allocation issues.

Arizona's water is also used or claimed by a number of Indian tribes whose legal rights to quantities of water currently are the subject of settlement negotiations or litigation as part of the adjudication of water rights within the State. The outcome of these proposed settlements and settlement negotiations will significantly impact the State's water budget. In addition to water supply needs for human use, environmental protection issues are of substantial concern and may affect Arizona's future water supply availability.

The water needs of Arizona's rural areas, where few renewable supply options exist, are becoming urgent. The Water Development Commission formed by HB 2661 (2010) and appointed by the Director, continues to focus on meeting the water needs in rural Arizona.

Substantial progress has been made within central Arizona in moving toward a sustainable water future. Although, challenges still exist in rural Arizona, ADWR's long-term view of water management needs has served the State well.