



ARIZONA DEPARTMENT OF WATER RESOURCES

ANNUAL REPORT

PROTECTING & ENHANCING ARIZONA'S WATER SUPPLIES FOR CURRENT & FUTURE GENERATIONS

2019

OUR MISSION

The Arizona Department of Water Resources is the steward of Arizona's water future and ensures long-term, reliable water supplies to support the continued economic prosperity of the State

OUR VISION

Protecting and enhancing Arizona's water supplies for current and future generations

OUR VALUES



QUALITY

We commit to the highest standards of technical expertise and professionalism



INTEGRITY

We act with integrity



EMPOWERMENT

We encourage employees to be problem solvers



VIGILANCE

We are vigilant in protecting the State's water rights and supplies



LEADERSHIP & COLLABORATION

We engage with Arizona's water community and provide leadership in developing innovative solutions to conserve and augment the State's water supplies



CONTINUOUS IMPROVEMENT

We strive to innovate, streamline processes, add value and increase productivity



CONFIDENCE

We build confidence by providing timely services and accurate information, and by promoting consensus-based options that create water resiliency

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DIRECTOR'S WELCOME

Arizona Department of Water Resources

The Department's commitment to its core mission of protecting Arizona's water supply reached an important milestone this year with the passage of the system-wide Colorado River Drought Contingency Plan

"Colorado River Drought Contingency Plans Signing Ceremony" by Bureau of Reclamation is licensed under CC BY 2.0

Dear Governor Ducey, President Fann, and Speaker Bowers:

It is a privilege to submit to you the Arizona Department of Water Resources' Annual Report for Fiscal Year 2019 as required by Arizona Revised Statute § 45-111. This report includes an overview of the Department's activities and accomplishments between July 1, 2018, and June 30, 2019.

It is our primary mission to ensure that Arizona has long-term, reliable water supplies that help support our State's continued economic prosperity.

I am gratified to report the significant contribution that the Arizona Legislature and the Governor have made this year to that mission.

On January 31, 2019, a near-unanimous Legislature passed, and Governor Ducey signed, historic legislation -- Senate Bill 1227 -- authorizing the ADWR Director to join with the other Colorado River States and the federal Department of the Interior in a system-wide Drought Contingency Plan to help prevent Lake Mead from falling to critical surface levels.

In accordance with Section 17 of SB 1227, the Director of Water Resources has reported back to the Governor and the appropriate legislative committees 30, 60 and 90 days subsequent to enactment of the DCP Implementation Plan.

By their action on January 31, the elected leaders of Arizona took a significant step forward in the effort to protect the State's Colorado River allocation and to help stabilize the drought-wracked system that provides life-sustaining water to 40 million people in the Southwest and Mexico.

Governor Ducey properly identified the events of January 31 as "historic."

"The Drought Contingency Plan is the most significant water legislation passed in nearly 40 years," said the Governor, upon signing the legislation. "And it was done by putting party labels aside and putting Arizona first. But make no mistake: today marks an important step, but not the last step, needed to protect our water supply."



Emma Hughes/Gila River Indian News

Arizona is the only State in the Colorado River system that requires its signatory to the DCP to obtain legislative authorization to enter into the system-wide agreement. Challenging as the pursuit of that requirement proved to be, it set in motion a lengthy public vetting of all the issues related to the DCP as they would affect Arizona's water-using stakeholders. I am proud to say that Arizona's eight-month debate over the DCP was remarkable for its transparency.

As we noted in ADWR's 2018 Annual Report, those public meetings commenced at a public issues-briefing session at the Arizona Historical Society Museum on June 28, 2018.

Subsequently, and in partnership with our co-sponsors at the Central Arizona Project, we engaged over 40 stakeholders as Steering Committee members. The Steering Committee met nine times, working to erect the complex framework of an intra-Arizona Implementation Plan of the DCP.

The efforts of the Steering Committee helped produce the language of the enabling legislation that Governor Ducey would sign on January 31. Upon his signature, the system-wide DCP effort immediately re-directed toward obtaining Congressional authority for the Secretary of the Interior to enter into agreement with the Seven Basin States.

That effort began with a letter to Members of Congress signed on March 19, 2019 at ADWR offices in Phoenix by representatives of all seven Colorado River states requesting that Congress "promptly secur(e) legislation" to implement DCP.

Both houses of Congress did in fact promptly take up the issue. With strong bipartisan support, Congress on April 8, 2019, approved the Colorado River Drought Contingency Plan Authorization Act and, on April 16, President Trump signed the measure into law.

The long, difficult multi-state negotiation process over the DCP finally concluded on May 20, 2019, at a signing event, appropriately enough at the top of Hoover Dam. The negotiations among the Colorado River states began nearly six years earlier – in June 2013.

And, as I described at the May 20 signing, "this is certainly a Day to Remember... it certainly is not the end, but it is a step forward." I am pleased to report that we already are laying the groundwork for system-wide negotiations over a much longer-term drought plan, that being the re-negotiation of the 2007 Interim Guidelines, which expire in 2026.

Sincerely,

TOM BUSCHATZKE
Director



A TIMELINE: COLLABORATIVE EFFORTS ON THE COLORADO RIVER

Arizona's participation in the effort to complete a Colorado River system-wide plan for potential delivery shortfalls proceeded in FY 2019 along two tracks: One was the intra-Arizona pursuit of a plan to implement the Drought Contingency Plan within Arizona; the other track involved the negotiations among the seven Colorado River Basin States and the U.S. Department of the Interior to finalize the DCP.

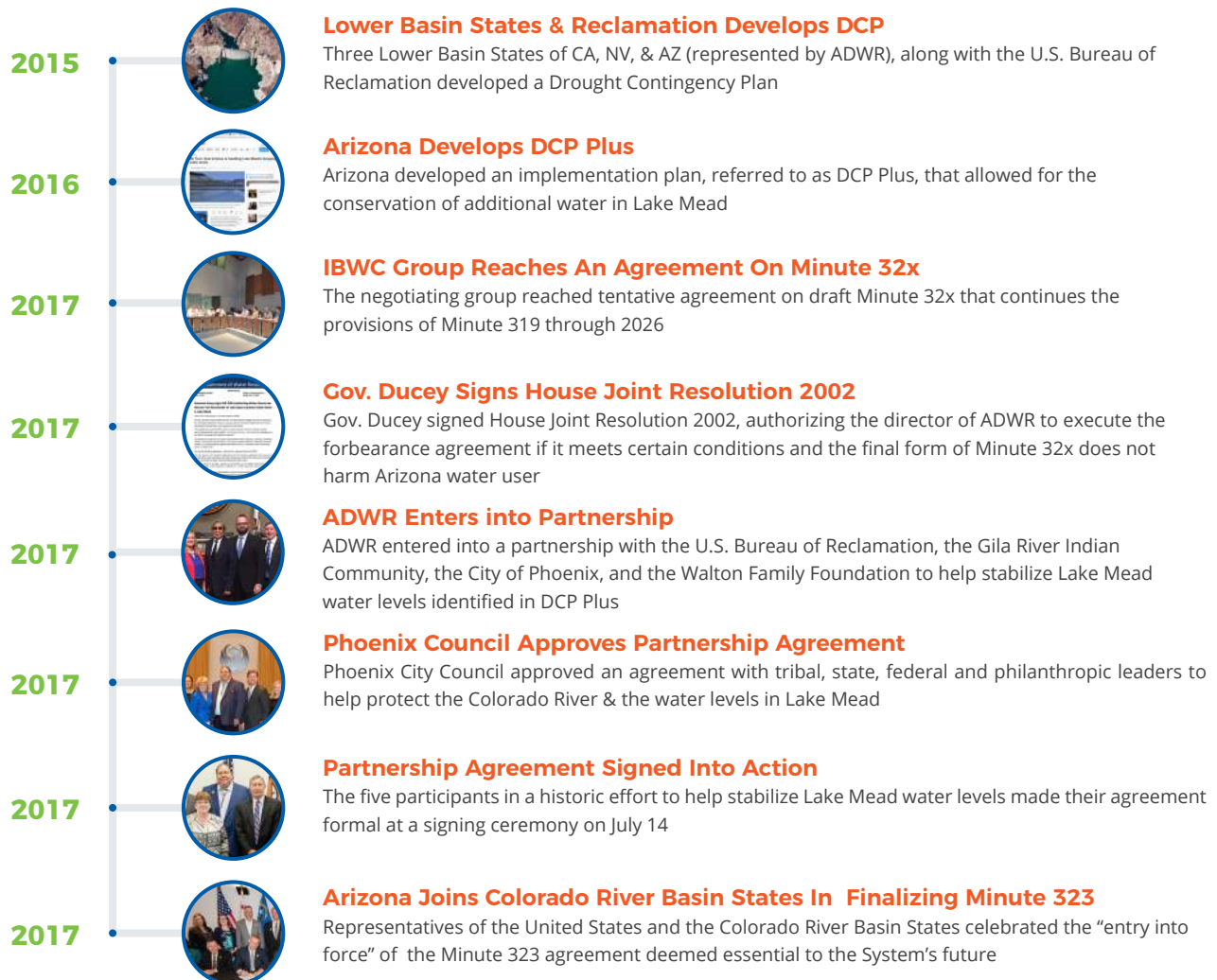
The intra-Arizona effort took on considerable urgency just before end of FY 2018 – on June 28, 2018, specifically – when the Director of ADWR and the General Manager of the Central Arizona Project jointly announced that going forward they would be “committed to bringing the Lower Basin Drought Contingency Plan (LBDCP) to closure in Arizona.”

That Arizona-specific effort resulted in a lengthy, deeply detailed collaborative process led by ADWR and CAP and with representation of all major Colorado River water-using communities, which together formed the “Arizona Steering Committee.”

Those negotiations, which continued throughout the calendar year, produced the agreement that led to the passage on January 31, 2019 of legislation authorizing the Director of ADWR to sign the DCP on behalf of Arizona. Governor Ducey signed the legislation that same day.

Concurrently, the Seven Basin States capped their system-wide DCP negotiations on March 19, 2019, when they

KEY EVENTS



gathered in the Phoenix offices of ADWR to jointly sign a “Letter to Congress,” encouraging federal lawmakers to act swiftly to pass legislation that would “authorize and direct the Secretary of the Interior to sign and implement” their agreed-upon DCP agreements.

On March 27, ADWR Director Buschatzke testified before the relevant Senate subcommittee in support of the legislation. The next day, March 28, he testified before the relevant House subcommittee.

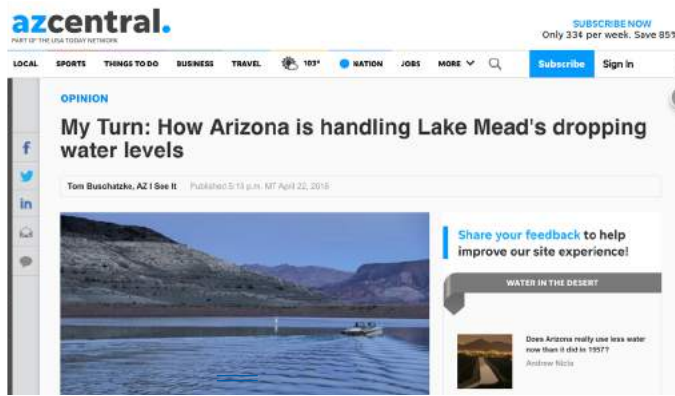
On April 8, 2019, Congress responded, passing with overwhelming support the Colorado River Drought Contingency Plan Authorization Act. Eight days later, on April 16, President Trump signed the legislation.

The federal Authorization Act opened the door to the final step in the pursuit of the DCP, the May 20, 2019 signing of the DCP at Hoover Dam.

2017		<p>U.S. Senate Panel Gets Briefed On Arizona’s Drought Preparedness ADWR director discusses Arizona’s philosophy on preparing for long-term drought and how it focuses on developing and improving the tools necessary to combat the effects of lengthy dry spells</p>
2017		<p>Arizona Joins U.S. & Mexico Representatives In Finalizing Minute 323 ADWR director joins United States and the Republic of Mexico in finalizing Minute 32x – now, Minute 323 - to cooperate in the management of a more stable Colorado River system</p>
2018		<p>ADWR & CAP Issue Statement on DCP ADWR and the Central Arizona Water Conservation District jointly released a statement vowing to commit “to bringing DCP to closure in Arizona by addressing a broad range of issues that respect the concerns of all stakeholders across the State”</p>
2018		<p>Reclamation Joined in the Effort to Finalize DCP U.S. Bureau of Reclamation on May 9 joined in the effort to finalize DCP</p>
2018		<p>ADWR & CAP Hold Public Hearing with Reclamation On June 28, ADWR Director Buschatzke and CAP General Manager Ted Cooke co-sponsored a public hearing on the plan to finalize DCP with the participation of Bureau Commissioner Burman and her staff</p>
2018		<p>Gov. Ducey & State Legislature signed off on AZDCP On January 31, Gov. Ducey and the Arizona Legislature signed off on a multi-state drought plan (AZDCP) which authorized Director Tom Buschatzke to sign the DCP sign on behalf of the State</p>
2019		<p>Colorado River Basin States & Reclamation Sign Letters To Congress On March 19, the seven Colorado River Basin states signed a Letter to Congress encouraging swift and necessary congressional action on drought plans the U.S. Bureau of Reclamation rescinded their notice in the Federal Register</p>
2019		<p>Colorado River Basin States & Reclamation Attend U.S. Hearings Colorado River Basin representatives and the U.S. Bureau of Reclamation Commissioner attended U.S. Senate and House hearings that examined DCP</p>
2019		<p>Colorado River DCP Authorization Act Passes Congress Passed by Congress on April 8, the Colorado River Drought Contingency Plan Authorization Act enjoyed the support of all 14 of the Colorado River Basin States senators, and was approved by acclamation by both houses</p>
2019		<p>U.S. President Signs Authorization Act Into Law President Trump signs Colorado River DCP Authorization Act, clearing path to finalize historic agreement on April 16</p>
2019		<p>Representatives Sign Final DCP Docs That Put It Into Effect On May 20, representatives of the Colorado River Basin States, the Commissioner of the U.S. Bureau of Reclamation, and the Assistant Secretary for Water & Science for the Department of the Interior signed the final DCP document putting it into effect</p>



Lower Basin States & Reclamation Develops DCP



Arizona Develops DCP Plus



IBWC Group Reaches An Agreement On Minute 32x

2015

2016

2017

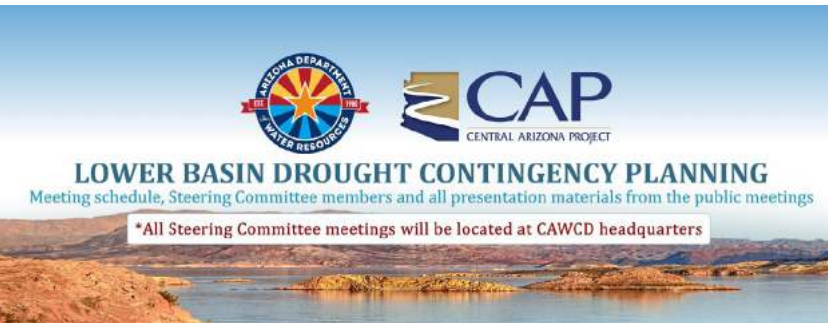


Phoenix Council Approves Partnership Agreement



Partnership Agreement Signed Into Action

2017



ADWR & CAP Issue Statement on DCP



Reclamation Joined in the Effort to Finalize DCP



ADWR & CAP Hold Public Hearing w

2018



Colorado River Basin States & Reclamation Sign Letters To Congress



Colorado River Basin States & Reclamation Attend U.S. Hearings



Colorado River DCP Authorization Act Passes Congress

2019

FOR IMMEDIATE RELEASE
March 5, 2017

PRESS RELEASE
CONTACT: Doug MacEachern
PHONE: 602-773-4507

Governor Ducey signs HJR 2002 authorizing Water Resources Director Tom Buschatzke to take steps to protect water levels at Lake Mead

Arizona Gov. Doug Ducey on Thursday signed HJR 2002. The Joint Resolution allows ADWR Director Tom Buschatzke to obligate the state of Arizona to the "domestic agreements" that are a necessary part of a binational agreement with Mexico that benefits Colorado River water supplies and Lake Mead. "The Legislature has acted swiftly to give my administration the tools it needs to protect Arizona Colorado River water supplies," said Governor Ducey. "I commend state Lawmakers for their efforts in passing this important resolution." The agreement among the Lower Basin Colorado River states of Arizona, California and Nevada to leave "intentionally created surplus" (ICS) water created in Mexico in Lake Mead would be ancillary to a pending binational agreement between the U.S. and Mexico that is tentatively known as "Minute 32x."



Gov. Ducey Signs House Joint Resolution 2002

ADWR Enters into Partnership U.S. Bureau of Reclamation, the Gila River Indian Community, the City of Phoenix, & the Walton Family Foundation



Credit: Bureau of Reclamation is licensed under CC BY 2.0



Ben Moffat/Cronkite News



Arizona Joins U.S. & Mexico Representatives In Finalizing Minute 323

Arizona Joins Colorado River Basin States In Finalizing Minute 323

U.S. Senate Panel Gets Briefed On Arizona's Drought Preparedness



with Reclamation



Emma Hughes/Gila River Indian News

Gov. Ducey & State Legislature signed off on AZDCP

2019



Donald J. Trump ✓
@realDonaldTrump

Just signed a critical bill to formalize drought contingency plans for the Colorado River. Thanks to @SenMcSallyAZ for getting it done. Big deal for Arizona!

♥ 72.4K 3:39 PM - Apr 16, 2019

💬 20.4K people are talking about this

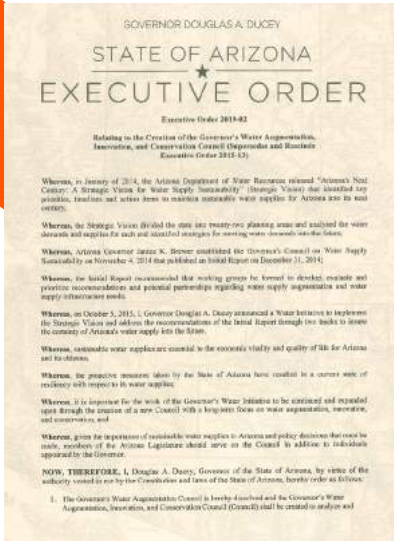


Credit: Bureau of Reclamation is licensed under CC BY 2.0

U.S. President Signs Authorization Act Into Law

Representatives Sign Final DCP Docs That Put It Into Effect

ARIZONA WATER INITIATIVE



On January 31, 2019, Governor Doug Ducey signed Executive Order 2019-02, which stated in part,

“...it is important for the work of the Governor’s Water Initiative to be continued and expanded upon through the creation of a new Council with a long-term focus on water augmentation, innovation and conservation; and given the importance of sustainable water supplies to Arizona and policy decisions that must be made, members of the Arizona Legislature should serve on the Council in addition to individuals appointed by the Governor.”

Executive Order 2019-02 superseded and rescinded Executive Order 2015-13 which formed, on October 5, 2015, the Governor’s Water Augmentation Council (GWAC) and established the Planning Area Process.

As the implementation arm of the Governor’s Water Initiative to secure the State’s water future by continuing the Arizona legacy of proactive, strategic water planning, ADWR is carrying forward Governor Doug Ducey’s Executive Order 2019-2.

The purpose of the newly created Governor’s Water Augmentation, Innovation and Conservation Council (Council) is to analyze and recommend opportunities for long-term water augmentation, innovation and conservation; and to assess the long-term impacts of conservation projects funded with monies from the augmentation and conservation assistance fund established pursuant to A.R.S. 45-615(1). Currently the Council consists of 42 members including the Speaker of the House of Representatives, the President of the Senate, Senate Minority Leader, and House Minority Leader (or their legislative designees) and 38 individuals appointed by the Governor. The Council will convene quarterly.

The Council’s inaugural meeting was held on March 8, 2019. The new Council agreed to continue the work of the former GWAC Long-Term Water Augmentation Committee and Desalination Committee while considering other areas which should receive focus through additional committees or working groups.

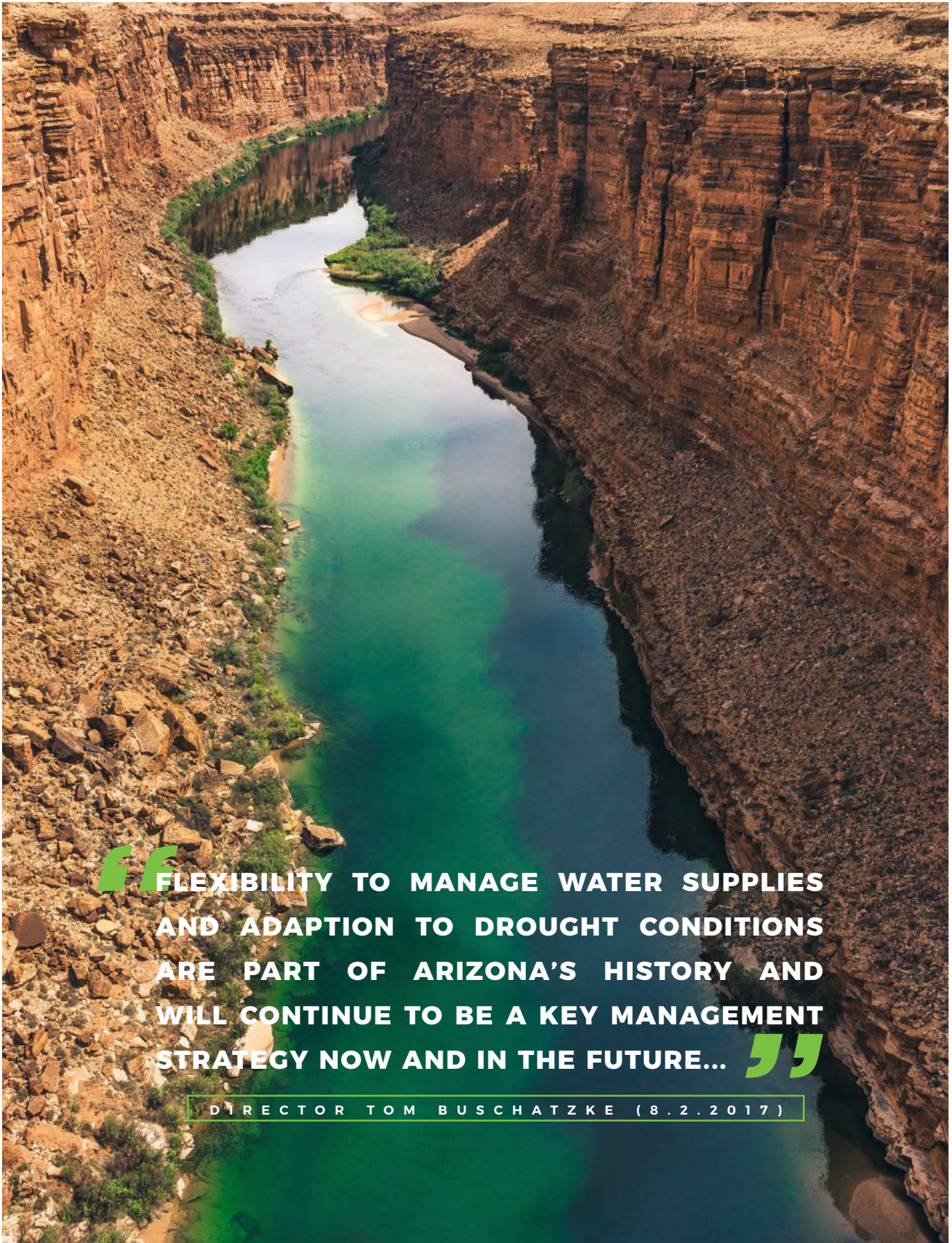
LONG-TERM WATER AUGMENTATION COMMITTEE

The Long-Term Water Augmentation (LTWA) Committee met seven times in FY 2019 with the objective of completing a statewide analysis of short-term and long-term water augmentation opportunities. The project was awarded a \$25,000 grant from the Bureau of Reclamation to supplement ADWR’s \$150,000 investment. The report on statewide water augmentation opportunities is scheduled to be completed in the summer of 2019. Those opportunities will be brought to the Council for their consideration.

The M36 Program provided training and technical assistance to 25 small- and medium-sized water systems, private and public, inside/ outside the AMAs, and geographically spread across the state in a top-down water audit using the American Water Works Association (AWWA) M36 methodology. The methodology assists the water delivery system in identifying lost and unaccounted-for water and developing next steps in their Water-loss control program.



* Final report completed May 2019



“ FLEXIBILITY TO MANAGE WATER SUPPLIES AND ADAPTION TO DROUGHT CONDITIONS ARE PART OF ARIZONA’S HISTORY AND WILL CONTINUE TO BE A KEY MANAGEMENT STRATEGY NOW AND IN THE FUTURE... ”

DIRECTOR TOM BUSCHATZKE (8.2.2017)

ADJUDICATION SUPPORT

The State of Arizona is conducting general stream adjudications of surface water rights in two major portions of the State: the Gila River System and Little Colorado River System. Adjudications are proceedings conducted in State Superior Courts for Maricopa and Apache counties to determine the nature, extent and relative priority of the water rights of all persons in each of the river systems. This includes surface water rights and claims to surface water based upon both State and Federal law.

April 2019 marked the 45th anniversary of this complex and lengthy legal process.



"Drainage Basin of the Little Colorado River" by Thomas McGuire



"Gila Recreational River, Arizona" by Bureau of Land Management is licensed under CC BY 2.0



The Adjudication Support Program investigates claims for water rights, publishes comprehensive Hydrographic Survey Reports for watersheds and Federal reservations, and prepares technical reports on other issues and factual matters as requested by the adjudication court.

The program also processes, maintains, and updates information related to Statements Of Claimant (SOC) filed by water users in the adjudication proceedings. In addition, the program notifies new water users that the adjudication proceedings are under way and provides information about how to participate in the court process through the mailing of new use summonses.

In FY 2019, ADWR developed more than 70 reports and maps for the court, provided expert testimony at multiple hearings, and continued field investigation of various water uses in several areas of the state.

ADWR continues to actively manage a database of more than 100,000 individual claims to support the adjudication process. The department delivered more than 1,700 New Use Summonses and additional educational information to persons who may have initiated new water uses within the last year. The summonses and other outreach efforts resulted in more than 600 new Statements of Claimant (SOC) being filed this year.

The implementation of AMS principles within the Adjudications program is helping to support process improvements and increased efficiencies to meet the growing complexities of this lengthy legal process. Due to these AMS efforts, the program has stepped up the use of new technologies to accomplish what were once complex manual processes. This includes the use of Small Unmanned Aircraft Systems (sUAS) for field surveys in remote areas and the use of GPS enabled sonar devices to capture georeferenced depth measurements in small water bodies.

Major activities in the two adjudications include:

GILA RIVER ADJUDICATION

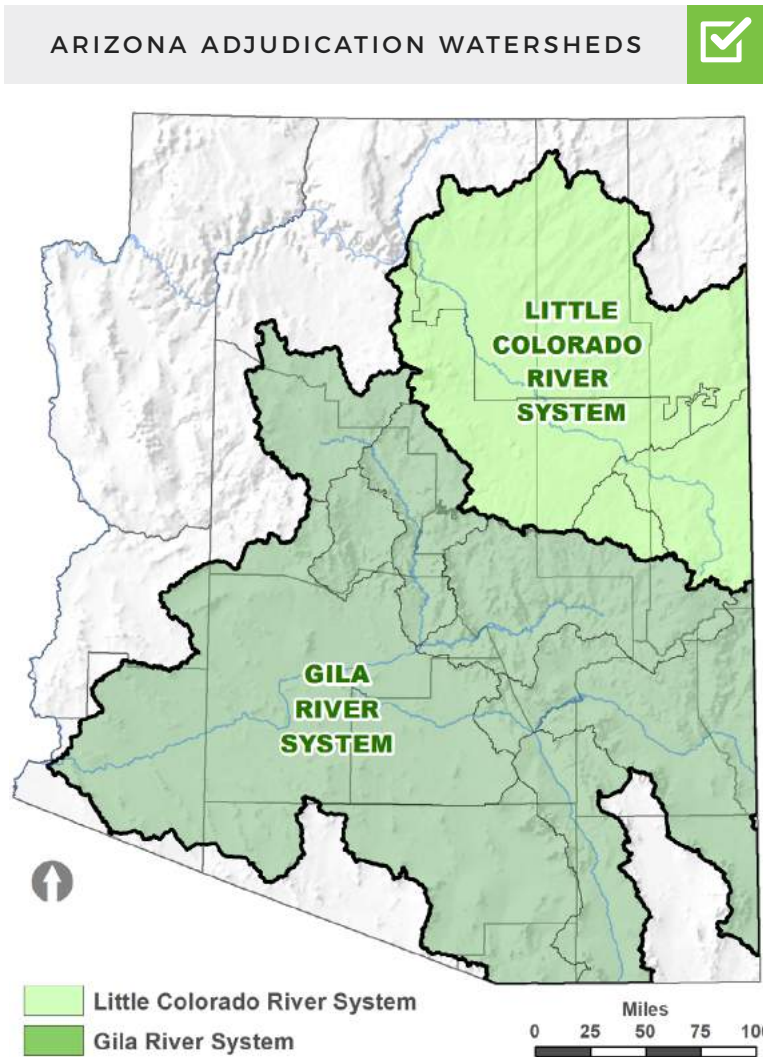
In FY 2019, ADWR continued to provide reports and other information regarding the analysis of Subflow in the San Pedro River watershed. This included an Initial Subflow Depletion Test Report, a Small Well Analysis, and other information regarding potential analysis methods and water modeling tools.

At the request of the adjudications court, ADWR was required to facilitate meetings throughout the year with various parties involved in the Gila River adjudications. ADWR also reviewed abstracts and completed numerous reports and maps for the court regarding individual proposed water rights.

LITTLE COLORADO RIVER ADJUDICATION

In FY 2019, ADWR completed a Preliminary Hydrographic Survey Report (HSR) for the Navajo Reservation. This detailed report provides the Navajo Nation, the United States and interested parties with the opportunity to inspect and comment on information gathered by ADWR pertaining to water rights claimed by the Navajo Nation or by the United States (on behalf of the Navajo Nation).

ADWR also worked to finalize a technical report for the Lower Little Colorado River subwatershed that analyzes the claimed stock watering, wildlife watering and stockpond uses and their respective impacts on the available water sources. The court has requested this report to help inform development of appropriate de minimis standards to streamline the adjudication of those claims.

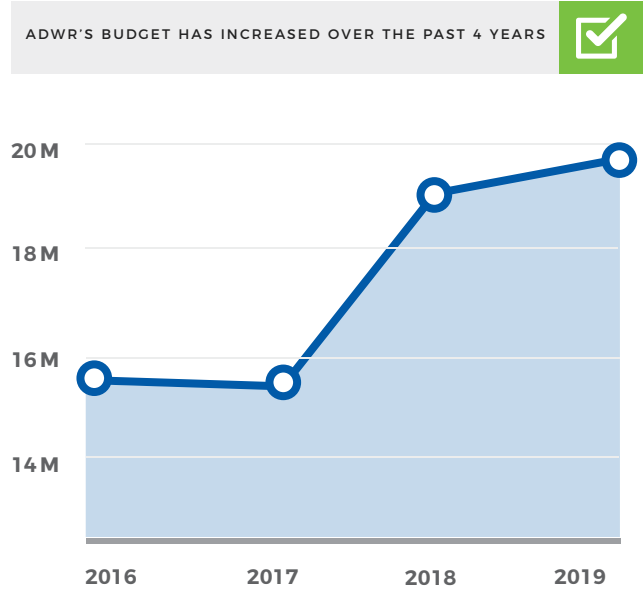


DEPARTMENT OPERATIONS

The Arizona Department of Water Resources (ADWR) is responsible for ensuring Arizona has dependable long-term water supplies Arizona¹.

Since it began in 1980, ADWR administers the state’s water laws, except those related to water quality, explores methods of augmenting water supplies to meet demand, and develops and implements policies that promote water conservation. ADWR is responsible for supervising and controlling jurisdictional dams and reservoirs in the State to protect life and property.

Additionally, the Director negotiates with agencies and governments outside Arizona in matters related to water. For example, the Director is authorized, for and on behalf of the State of Arizona, to consult, advise, and cooperate with the Secretary of the Interior on issues related to the Colorado River².



BUDGET FISCAL YEAR 2019

Operating Lump Sum	\$9,630,100
Special Line Item (SLI) - Adjudication Support	\$1,740,100
SLI - Assured and Adequate Water Supply Administration	\$1,992,400
SLI - Automated Groundwater Monitoring	\$411,500
SLI - Colorado River Legal Expenses	\$500,000
SLI - Conservation and Drought Program	\$410,200
SLI - Drought Contingency Program	\$2,000,000
SLI - Northwest Basins Groundwater Study	\$100,000
SLI - Rural Water Studies	\$1,162,600
SLI - Arizona Water Protection Fund Deposit	\$650,000
TOTAL	\$18,596,900

1 | A.R.S. § 45-103(A) | 2 | A.R.S. § 45-107

ARIZONA MANAGEMENT SYSTEM

Over the past year, ADWR further integrated the Arizona Management System (AMS) into its processes. Throughout the report there are highlights on how ADWR has implemented these concepts into its work. These stories showcase how ADWR employees are learning best practices and are personalizing those practices into their work.

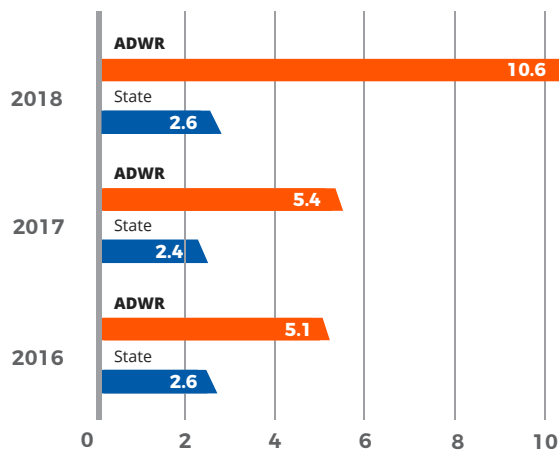


ADWR focuses on how well we do four things: communicate, problem-solve, establish best practices, and create a culture that reflects its values and mission. In the past year, ADWR established a more formalized process for prioritizing technology projects, problem-solving, training managers, and developing future leaders.

ENGAGEMENT RATIO COMPARISON



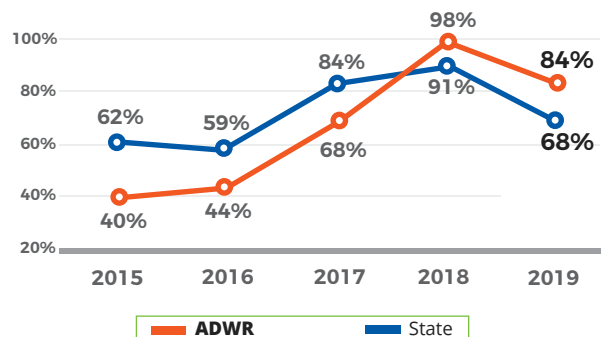
The extent to which staff is involved in, enthusiastic about and committed to their work and workplace.



PARTICIPATION RATE COMPARISON



The direct participation of staff to help an organization fulfill its mission and meet its objectives by applying their own ideas, expertise, and efforts towards solving problems and making decisions.



STAKEHOLDER ENGAGEMENT

Since early in 2016, ADWR has committed to expanding its communications outreach efforts through the Internet and its newsletter subscription lists, providing information to Arizonans and others who are eager to learn about how we manage the State's most valuable resource.



54

public meetings

60

news articles

221,020

website pageviews

833,400

twitter impressions

The outreach mission of ADWR is to ensure that the largest possible audience is receiving up-to-date information about Arizona's hydrology, including Colorado River supplies, surface water and groundwater, the condition of the State's watersheds, summer monsoon and winter storm activity, and more. ADWR is the repository of one of the nation's most comprehensive databases on ground subsidence and earth fissures. ADWR is committed to ensuring that the public is aware of such resources and can easily access them. In pursuit of that mission, the ADWR communications team employs a wide array of media platforms. Our communications team produces a weekly ADWR newsletter – Arizona Water News – that includes up-to-date information on the latest developments in the State. In less than three years, Arizona Water News has increased from 100 subscribers in 2016, to 3,000 in 2017, to over 8,000 this past year. The Arizona Water News blog featured more in-depth stories on water topics and continued to attract readers from Arizona, the Southwest, and multiple countries across the world. We continue to expand our presence on social media aggressively. Since the launch in June 2016 of ADWR's Facebook Page, has organically reached over 65,317 readers and viewers. In addition, ADWR's YouTube channel has received over 5,731 views and over 41,614 minutes watched. ADWR's Twitter reach has also increased. During FY 2019, ADWR's Twitter account received over 833,400 impressions.

OFFICE OF DATA MANAGEMENT

The Office of Data Management's mission is to move ADWR toward a culture of enterprisewide data management by instituting best practices that provide clarity, confidence, and consistent data in its data management.

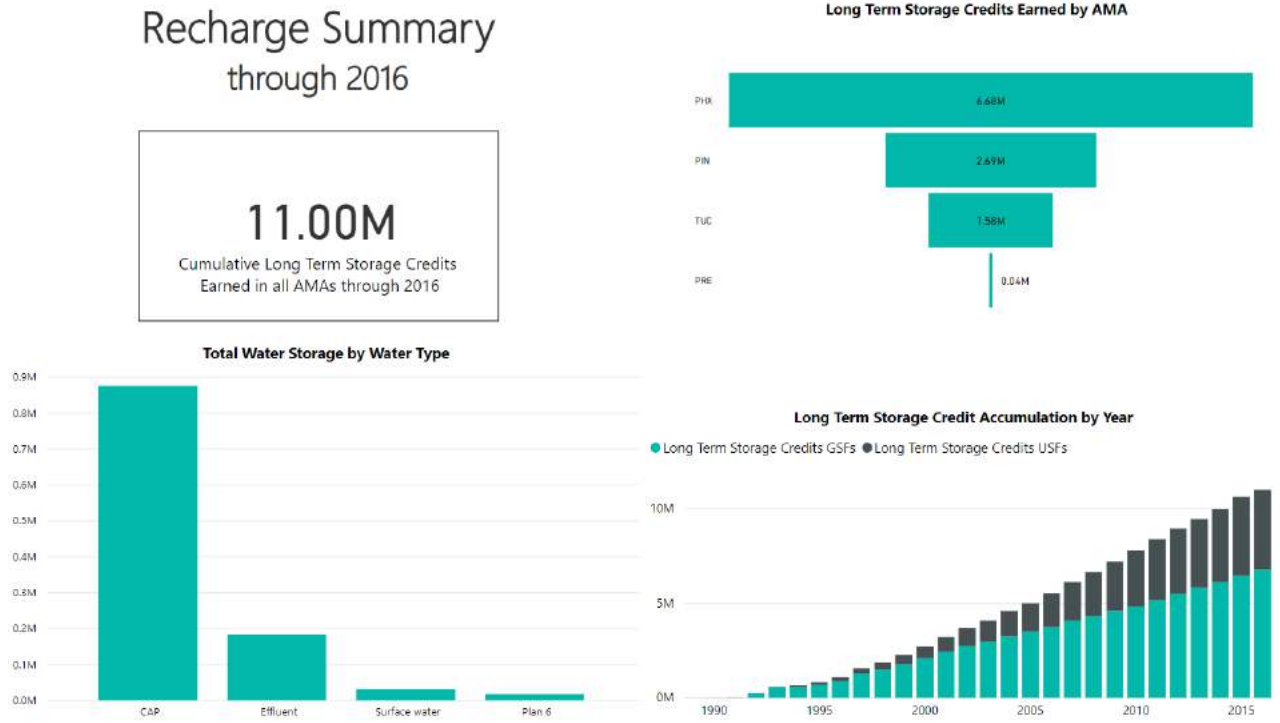


In FY 2019, the second year of the program, the ADWR data warehouse moved from a pilot phase to production. Additionally, ADWR implemented the following best practices:

1. Provide clarity to internal and external users of the data by requiring that all new fields added to agency databases be added to the ADWR Business Glossary³;
2. Track activities and target educational efforts more precisely by creating a database that logs data management activity;
3. Keep ADWR staff abreast of data management policies and best practices by launching a formal communications strategy for enterprise data management.
4. A "Demand" dataset for Active Management Area water use for the years 1985 to 2017 were added to the data warehouse. These data include information on how much water users reported by sector and sub-sector. This addition complements the "Supply" side data added last year. For the first time, website visitors can see dashboards of both the demand and supply dataset.
5. Aggregated data from the Recharge program from 1985 to 2016 (see Figure 1) were added to the data warehouse. An interactive dashboard depicting credits accrued by source, Active Management Area, and the year is now available on the ADWR website.

³ | ADWR Business Glossary. (2018). In *Arizona Department of Water Resources Business Glossary*. Phoenix, AZ: Arizona Department of Water Resources

FIGURE 1: AGGREGATE RECHARGE DATA DASHBOARD



The following are noteworthy successes of ADWR's data management program in FY 2019:

- ADWR's data management program garnered statewide attention as a presentation at the 2018 State Data Management Conference. It was featured as an example of an effective start-up enterprise data management program accomplished with limited resources.
- Dataversity, a national industry-leading digital publisher of educational content for data management professionals, referenced ADWR's data management program as a noteworthy example of a program start-up accomplished with minimal cost.

Our initial Data Maturity Score⁴ for the agency in the summer of 2017 was 1.50. A score of 1.50 is a typical entry-level score. The best practices described above, as well as other projects, have improved ADWR's score to 2.03. The industry expectation is to achieve a score of 3.0 in five to seven years after the start of an enterprise data management program.

HOW DATA MANAGEMENT IS AIDED BY THE ARIZONA MANAGEMENT SYSTEM



METRICS

Metrics, metrics & more metrics



GEMBA

Gemba on data quality strategies



PLAN

Plan. Do. Check. Act.



WORK

Leader standard work, auditing policies being followed

4 | Arizona Department of Water Resources. (2019). Production Office Of Data Management Tracking (Version 4) [Microsoft Access].

LEGAL – COMPLIANCE ENFORCEMENT

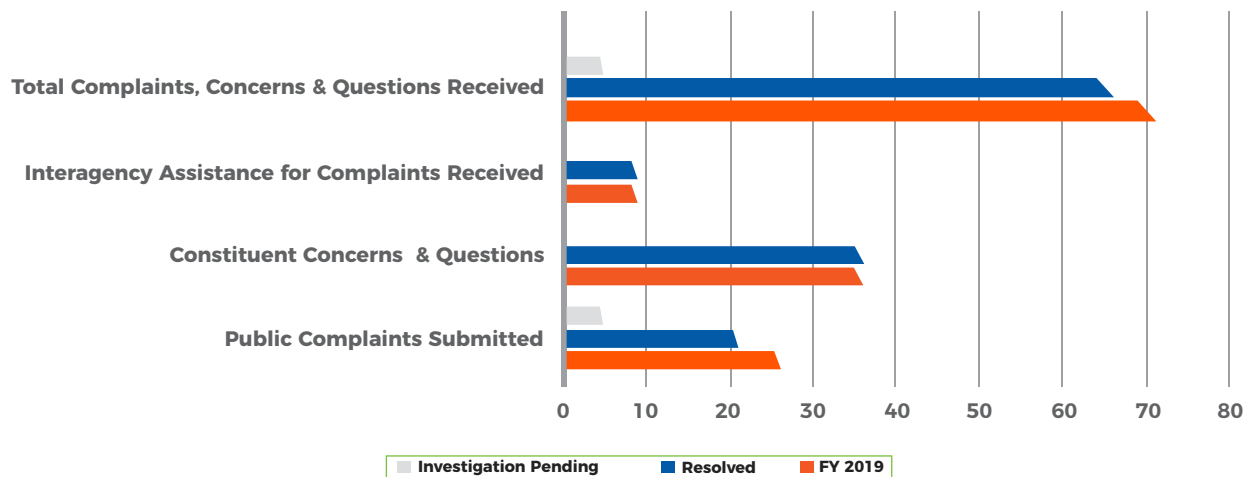
To attain compliance with the State’s water resource management requirements, the Department’s Compliance Enforcement employs a variety of strategies that included education, monitoring, investigation, and enforcement. The public’s knowledge of the ADWR’s compliance efforts may be the most significant factor in achieving a high rate of voluntary compliance and serves to disincentive any future violations.

In FY 2019, ADWR expanded its capability to enhance compliance by re-establishing a Compliance Enforcement Committee, consisting of staff from various ADWR programs and chaired by the Department’s Compliance Enforcement Coordinator. The Department’s Compliance Enforcement Coordinator organized quarterly meetings to review violations, public complaints, and general compliance issues impacting the various programs and citizen requests. The Committee helped improve communication at ADWR and offered a better opportunity to address public complaints, concerns, and violations promptly.

ADWR responded to more than 70 public complaints and concerns regarding water. Often, ADWR partnered with other state agencies such as the Arizona Department of Environmental Quality (ADEQ), the Arizona State Ombudsman-Citizens Aide Office, and the Governor’s Office of Constituent Services.

Recently, the Department’s Compliance Enforcement Coordinator alerted staff from ADEQ about a public complaint received regarding wastewater being discharged into an open well in southern Arizona. This prompted an investigation by both agencies and through a coordinated-collaborative effort, the issue was resolved and the hazardous open well was capped by the owner. This is just one example of the Department’s Compliance Enforcement coordinating with other agencies to resolve public complaints and violations.

COMPLIANCE ENFORCEMENT PUBLIC COMPLAINTS, CONCERNS & QUESTIONS FY 2019



OPEN WELL CAPPING INITIATIVE

In the summer of 2018, ADWR coordinated efforts to efficiently and effectively address hazardous open wells in Arizona. Open wells pose a significant threat to public safety and of contamination of precious groundwater supplies.

Through a great display of teamwork, multiple ADWR programs introduced AMS tools to track their initiative. From the implementation of visual management techniques to the development of standard work, staff from Hydrology, Legal and Wells coordinated their efforts to establish the Open Well Capping Initiative.

The Arizona Department of Correctional Industries (ACI) was a key partner with ADWR, providing the Department with temporary well caps. These well caps, fabricated by inmates at the State Prison, provided on the job training skills for inmates, as well as benefitting the public's safety.

In eight months, ADWR facilitated the permanent capping of 24 hazardous open wells across the state and temporarily capped 41 more. Numerous well owners expressed gratitude to ADWR for the notifications.



STEP 1

ADWR Field Services encountered an emergency hazard open well near a major road.

(note cars in the background).



STEP 2

ADWR Temporary Cap, manufactured by ACI, was placed on well; Compliance Enforcement Program notified the owner of the issue.



2 A



2 B



2 C

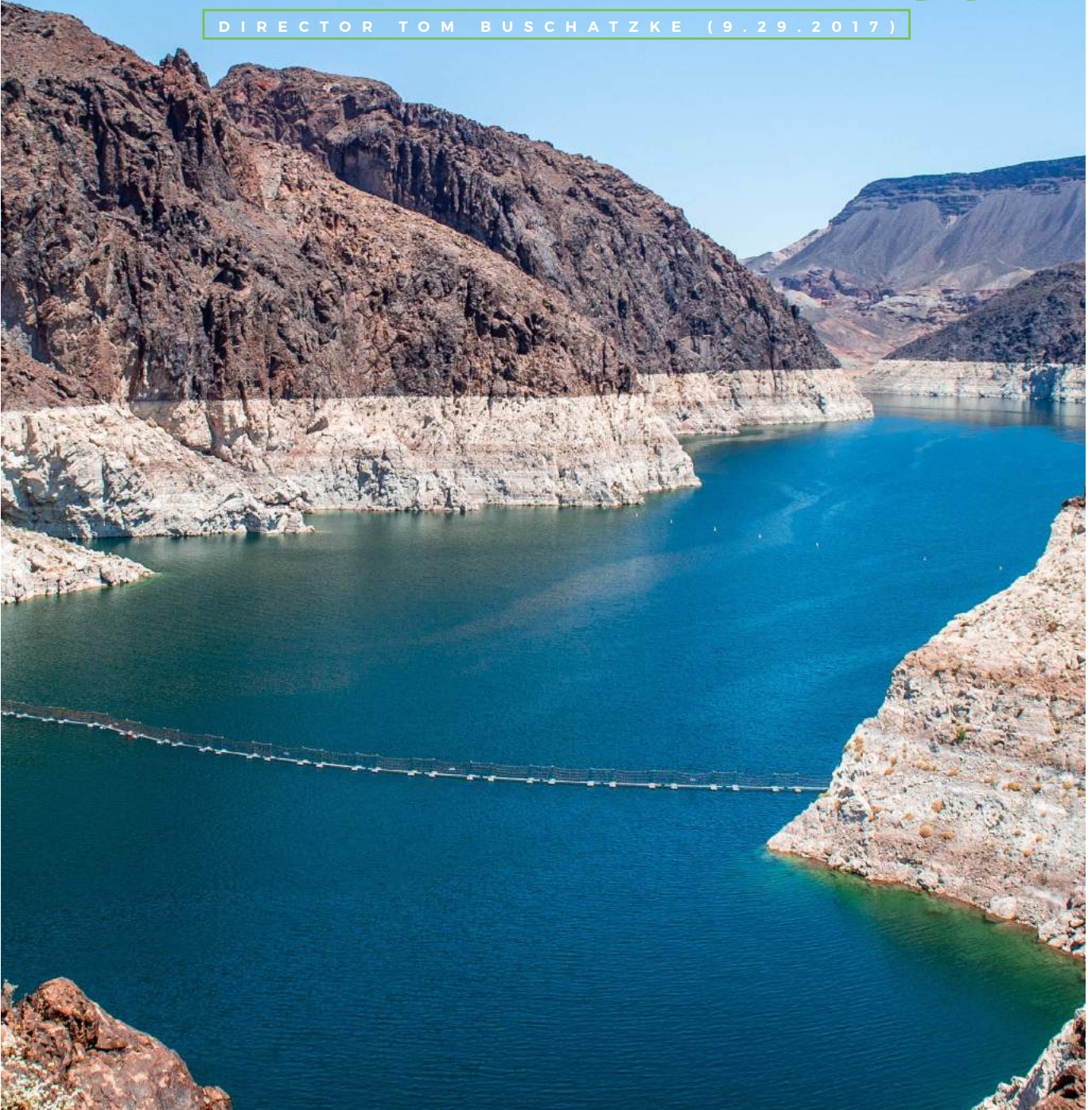


STEP 3

The owner responded and secured a permanent cap. ADWR retrieved the temporary cap and the well is now safe. The Well file has been updated by ADWR and the investigation closed by the Compliance Enforcement Program.

“ WE ARE OPTING TO IMPROVE ON THE WORK OF PREVIOUS GENERATIONS OF STATE LEADERS TO ENSURE THAT THE WORD ‘CRISIS’ REMAINS BANISHED FROM ARIZONA’S WATER LEXICON ”

DIRECTOR TOM BUSCHATZKE (9.29.2017)



COLORADO RIVER MANAGEMENT

The Colorado River is critical to the State of Arizona as it provides approximately 40 percent of the annual water use. ADWR is responsible for the protection and comprehensive management of Arizona's 2.8 million acre-feet annual Colorado River apportionment on behalf of the State.



The Director represents Arizona on matters related to the Colorado River⁵ and is authorized to consult, advise, and cooperate with the Secretary of the Interior of the United States. The various duties and responsibilities of the Colorado River Management Section, including the notable accomplishments in each category, are broken down as follows:

ENTITLEMENT OVERSIGHT

ADWR monitors entitlements of Colorado River water in the mainstream region of the river. These entitlements include water deliveries through the Central Arizona Project to cities that include Phoenix and Tucson. ADWR makes recommendations to the U.S. Bureau of Reclamation (Reclamation) on proposed allocations and transfers of Colorado River entitlements.

In FY 2019, the major activities on entitlement oversight included:

1. The completion of four requests for consultation and comment on assignments of mainstream Colorado River entitlements;
2. Two new consultations for proposed transfers of Colorado River entitlements;
3. Participation in a review involving water use at Davis Dam and facilities on the Arizona side of the Colorado River.

PLANNING AND OPERATIONS

ADWR collaborates with the Federal government and other Colorado River Basin States to better prepare for Arizona's long-term water needs. Colorado River Management staff models the impacts of management strategies, including the Drought Contingency Plan (DCP), basin-wide hydrological conditions and water-use demands

⁵ | A.R.S. 45-107

throughout the basin. During FY 2019, staff collaborated on the development of the Annual Operating Plan and were participants in the development of Reclamation's 24-Month Studies.

BINATIONAL NEGOTIATIONS

Colorado River Management continues to operate consistent with the provisions of Minute 323, executed by the United States and Mexico in September 2017. The Minute includes a commitment by Mexico to participate in coordinated actions with the Lower Basin States to codify ICS contributions at specific levels in Lake Mead, known as the "Binational Water Scarcity Contingency Plan;" this pledge was made with the understanding that the United States would adopt its Drought Contingency Plan, which was implemented on May 20th, 2019. ADWR continues to be active in binational correspondence under the Minute 323 umbrella, including staffing environmental, hydrology, and salinity work groups, among others.

COLORADO RIVER BASIN SALINITY CONTROL PROGRAM

The Colorado River Basin Salinity Control Program focuses on improving Colorado River water quality for water users in the United States above Imperial Dam by promoting efforts to reduce salinity in the Colorado River. This effort reduces the risks of environmental and economic impacts due to increased salt concentrations. ADWR is one of three representatives selected by the Governor to represent Arizona in the Program Forum and associated TWG. In FY 2019 ADWR, along with other Basin States, continued to provide technical expertise and policy guidance to reduce costs of salinity, specifically from total dissolved solids in the Colorado River Basin. This includes updating Salinity Economic Impact Models (SEIM) and the annual review of Water Quality Standards for Salinity in the Colorado River System.

GLEN CANYON DAM ADAPTIVE MANAGEMENT PROGRAM

ADWR represents the State of Arizona in the Glen Canyon Dam Adaptive Management Program, which was established in 1997. As the Governor's representative, ADWR provides policy guidance and technical expertise to the Program while representing Arizona's interests. The Colorado River Management Section staff are active participants in the Program, attending Adaptive Management Work Group (AMWG) and Technical Work Group (TWG) meetings.

In addition, staff participated in the Glen Canyon Dam monthly operational calls, as outlined in the Long-Term Experimental and Management Plan Record of Decision (LTEMP ROD). Under the LTEMP ROD, several experimental operational releases were proposed, including the bug flows, which promote aquatic food base and foster fish populations crucial to the integrity of the Colorado River ecosystem. In response to the success of the FY 2018 bug flow experiment, a decision was made to conduct a second bug flow in FY 2019.

LOWER COLORADO RIVER MULTI-SPECIES CONSERVATION PROGRAM

The Lower Colorado River Multi-Species Conservation Program (MSCP) provides 50 years of environmental compliance coverage for diversions of Colorado River water, primarily through implementation of a Habitat Conservation Plan. ADWR represents the State of Arizona on the MSCP's Steering Committee. In FY 2019, ADWR's Colorado River Management Section manager was unanimously elected as the vice-chair of the MSCP Steering Committee.

STATEWIDE EFFORTS

■ Drought, Conservation & Community Water Systems



DROUGHT PROGRAM

Arizona experienced two severe, sustained droughts in the first half of the 20th century, one in the 1900s, and one in the 1950s. Arizona is experiencing a third modern-era drought that began in the mid-1990s prompting a Drought Emergency Declaration, which has been in effect since 1996.

In 2003, a Governor's Drought Task Force was created to establish a flexible framework to refine Arizona's drought monitoring process, an understanding of drought impacts, and mechanisms for limiting future vulnerability. The Arizona Drought Preparedness Plan was developed and adopted in 2004 establishing the Drought Monitoring Technical Committee (MTC), the Interagency Coordinating Group (ICG), and Local Drought Impact Groups (LDIGs).

ADWR's Drought Program provides drought resources to the public and facilitates the meetings and activities of the MTC and ICG. The MTC is responsible for gathering drought, climate and weather data, and preparing the short- and long-term drought status reports, which are disseminated to resource managers, decision-makers and the public. Since 2006, the ICG has met biannually to advise the Governor on drought status, impacts and necessary preparedness and response actions. Since its inception, the ICG has continued to recommend to the Governor to maintain the Drought Declaration currently in place. The Drought Program compiles all related drought activities and efforts in the Arizona Drought Preparedness Annual Report.

DROUGHT WORKSHOPS

ADWR staff attended a drought workshop on July 17, 2018, in Salt Lake City, Utah. At this workshop climate experts and representatives from Utah, Arizona, New Mexico, Colorado and federal agencies shared details on their drought programs and collaborated with participants.

On March 14, 2019, The U.S. Department of Agriculture teamed up with the MTC and other organizations to bring a Drought Monitoring and Reporting Workshop to Arizona to improve drought impact reporting. Participants discussed challenges and solutions for improving reporting.

CONSERVATION PROGRAM

ADWR's Conservation Program offers conservation assistance, outreach and education, and information on conservation resources and regulations. The program encourages and promotes the wise and efficient use of water through the development and distribution of conservation resources and tools. It provides water conservation assistance to individuals and communities, participation in outreach activities and collaboration with regional and national conservation partners.



CONSERVATION OUTREACH EVENTS FY 2019

1. Quail Run Elementary School
2. Vista Del Sur Accelerated Academy
3. Tres Rios Nature Festival
4. Arizona Game & Fish Expo
5. Water Awareness Month Event
6. Salt River Pima-Maricopa Earth Day
7. Madison Heights Elementary School
8. STEM Pro Live! broadcast for Maricopa County School District

COMMUNITY WATER SYSTEM PROGRAM

Generally speaking, a community water system provides water to small, usually rural, communities. Community water systems are required to submit a System Water Plan and an Annual Water Use report to ADWR. These reporting requirements were part of a larger set of recommendations made in 2004 by the Governor's Drought Task Force, established by Executive Order 2003-12 on March 20, 2003, that were intended to reduce water providers' vulnerability to drought and ensure that they are prepared to mitigate and respond to drought or water shortage conditions. In addition, the data collected provides a means for ADWR to gather water use data inside and outside AMAs to better plan for Arizona's Water future. ADWR provides assistance to water providers in meeting these requirements through web-based resources, online reporting tools and phone or in-person consultations.

In FY 2019, in an effort to improve the Community Water System Program reporting process and ultimately the quality of data, both the System Water Plan and Annual Water Use online reporting tools were redesigned and upgraded.



GROUNDWATER MANAGEMENT

Active Management Areas & Irrigation Non-Expansion Areas



The 1980 Arizona Groundwater Management Act (GMA) recognized the need to provide long-term management and conservation of the state's finite groundwater resources to support the wellbeing and livelihood of Arizona's growing population. Areas with heavy reliance on groundwater were identified and designated as Active Management Areas (AMAs), where the highest degree of groundwater regulation in the State is currently imposed. This includes water conservation requirements & annual water use reporting requirements. Irrigation Non-expansion Areas (INAs) were established in rural farming areas where the groundwater overdraft problem was less severe. In INAs, irrigation of new lands is prohibited.

The GMA established management goals for the AMAs that recognized the unique character of each AMA and its water users. In addition, the GMA requires ADWR to adopt and implement a series of five Management Plans, each unique to a particular AMA, between 1980 and 2025. The plans include mandatory conservation requirements for agricultural, municipal and industrial water users that become progressively more rigorous with each plan.

The Statewide AMA Section is responsible for administering the GMA, specifically the management of groundwater use and the enforcement of the GMA requirements within the AMAs and INAs. These activities include:

1. Managing and monitoring municipal, industrial and agricultural conservation programs;

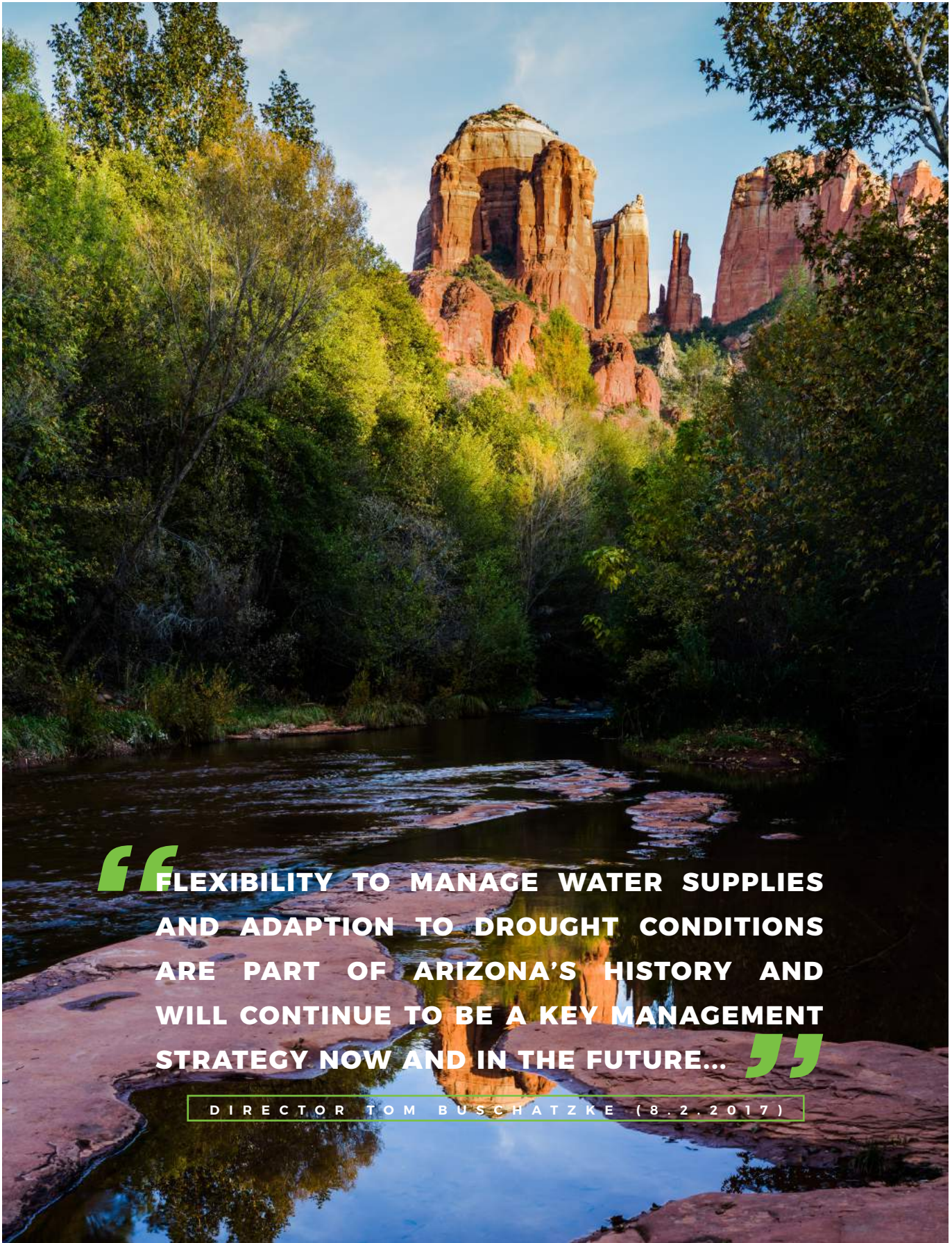
2. Managing and administering the annual water use reporting processes, which include processing, entering and analyzing over 6,000 annual water-use reports;

3. Providing customer service to individuals and entities on groundwater use and management;

4. Collaborating with different stakeholders as well as presenting to different organizations and entities on groundwater management and use;

5. Addressing customer inquiries and clarifying groundwater rules and regulations.

In FY 2019, the AMA team, in collaboration with ADWR's IT Division, created an interactive web map accessible to the public. The system provides layers of maps that allow a viewer to determine how a parcel of land lines up with groundwater rights, as well as to determine which rights -- or how many rights -- are within a given sub-basin. The map saves water right-holders and the public time when searching for water right data. Additionally, staff no longer need to create individual maps for customers, which frees up staff time and allows staff to focus on more critical mission focused work.



“ FLEXIBILITY TO MANAGE WATER SUPPLIES AND ADAPTION TO DROUGHT CONDITIONS ARE PART OF ARIZONA’S HISTORY AND WILL CONTINUE TO BE A KEY MANAGEMENT STRATEGY NOW AND IN THE FUTURE... ”

DIRECTOR TOM BUSCHATZKE (8.2.2017)

SURFACE WATER

In the Surface Water program, ADWR issues permits, certificates, and claims of surface water use within the State of Arizona, with the exception of the Lower Colorado River. The program also processes ownership transfers for rights and claims, maintains the surface-water right registry and other Departmental records, and provides technical assistance to private, state and federal entities in surface water matters.



"Fossil Creek" by USDA Forest Service



The following are noteworthy successes of ADWR's Surface Water program in FY 2019:

1. In FY 2019, ADWR issued the Town of Payson a Certificate of Water Right to use surface water from C.C. Cragin Reservoir. This water will help the Town of Payson replenish its existing groundwater use.

2. A recent project focused on new dam construction or modification. The objective was to enhance the coordination between the applicants, the dam safety program, and the surface water program. Using problem-solving methods under AMS, the program developed a current and future state map, establishing a formal and practical process for three applicants.

3. Similar project solving methods were applied to another project on stockpond applications. The revised process reduced the duplication of field work on some of the lands administered by the Bureau of Land Management (BLM).

4. Under the Norviel Decree in 1923, the judge retained jurisdiction over surface water rights around St. Johns, Ariz. The Surface Water Permitting unit coordinated with the Judge to ensure that ADWR's records remain current.

GROUNDWATER PERMITTING & WELLS

The Groundwater Permitting and Wells Unit processes groundwater withdrawal permit applications and notices of intention to drill, deepen, modify, replace or abandon a well (NOI). In addition, the Unit processes all the documents that are received once a well has been drilled. The Unit also administers well driller exams and issues well driller licenses. The Unit manages and maintains the registry of wells and groundwater withdrawal permits.

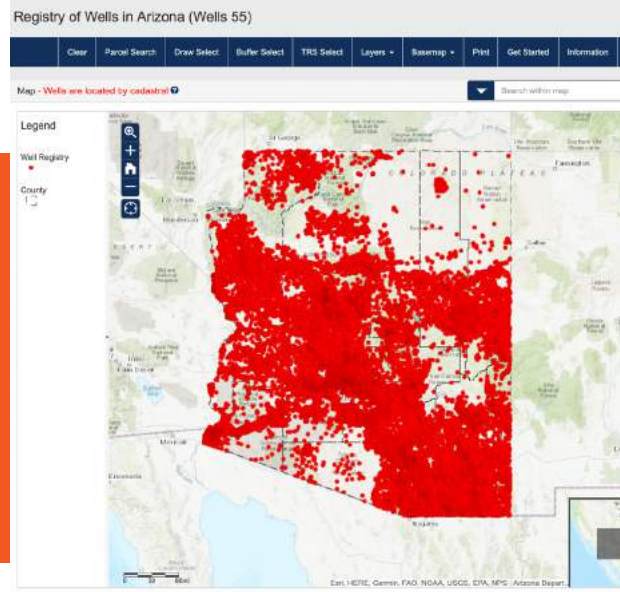
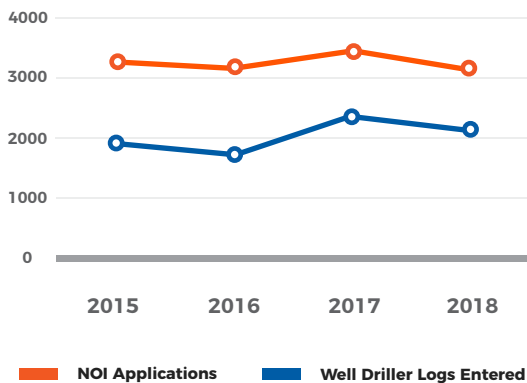


The number of NOIs filed in the past several years has increased. In FY 2017, the Groundwater Permitting and Wells Program Unit received and processed 3,398 NOIs. In 2018, the Unit received and processed 3,655 NOIs. The Unit's goal is to maintain an average of six calendar days or less to process an NOI. The Unit averaged 5.90 days for the past four years.

WELL DRILLER ONLINE REPORTING TOOL

A notable success was a project that simplified the Well Drilling reporting process. Through AMS problem-solving methods, ADWR launched an online application for licensed well drillers to file their reports online, making the information publicly available instantaneously. In the first month after the online application was launched, 18 percent of the reports from the paper-oriented well drillers were filed online, thus freeing up staff for other duties.

NOI Applications/Well Driller Report & Log



Registry of Wells in Arizona (Wells 55)

ASSURED & ADEQUATE WATER SUPPLY

ADWR's Assured and Adequate Water Supply Program administers the assured water supply requirements within the state's five AMAs and the adequate water supply requirements outside of the AMAs. These requirements are designed to provide consumer protection for buyers of homes in new subdivisions within the state.

The assured water supply requirements, which were established as part of the 1980 Groundwater Management Act, mandate that developers of new subdivisions in AMAs demonstrate to ADWR that there is a 100-year assured water supply for their subdivision before obtaining plat approval or selling lots. A developer can comply with this requirement by demonstrating that the water supply for the subdivision meets the criteria for a 100-year assured water supply in ADWR's rules. If successful, this results in ADWR issuing a Certificate

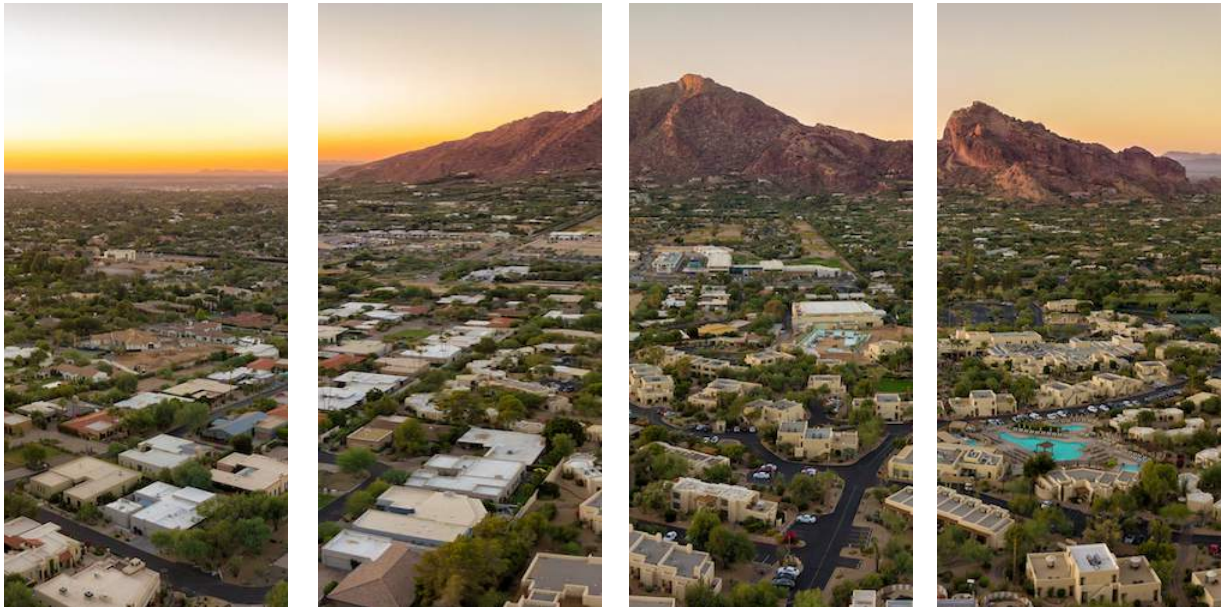


of Assured Water Supply for the subdivision, or by obtaining a commitment of water service from a water provider that has been designated by ADWR as having a 100-year assured water supply.

One of the requirements for demonstrating an assured water supply is that any groundwater use by the subdivision or water provider will be consistent with the AMA's management goal. This requirement is designed to preserve groundwater supplies in the AMAs by requiring new subdivisions to rely primarily on renewable supplies, such as Central Arizona Project water, effluent or surface water. In the Phoenix, Pinal and Tucson AMAs, a subdivision or water provider can meet this requirement by becoming a member of the Central Arizona Groundwater Replenishment District, which replenishes groundwater used by its members.

The adequate water supply requirements mandate that developers of new subdivisions outside of AMAs apply for and obtain a water report from ADWR determining whether there is a 100-year adequate water supply for the subdivision and disclose the report to prospective buyers. In most areas outside of AMAs, there is no requirement that the developer demonstrate that a 100-year adequate water supply exists for the subdivision before obtaining plat approval or selling lots. However, as a result of legislation enacted by the Arizona Legislature in 2007, cities, towns and counties outside of AMAs are authorized to enact an ordinance requiring that developers of new subdivisions either demonstrate to ADWR that there is a 100-year adequate water supply for the subdivision or obtain a commitment of water service from a water provider that has been designated by ADWR as having a 100-year adequate water supply before obtaining plat approval or selling lots. Some local jurisdictions, including Cochise County, Yuma County, Clarkdale and Patagonia, require a 100-year water adequacy determination from ADWR before completing the final plat approval process. Unlike the assured water supply program, the adequate water supply program does not require the use of renewable water supplies or replenishment of groundwater use by new subdivisions.

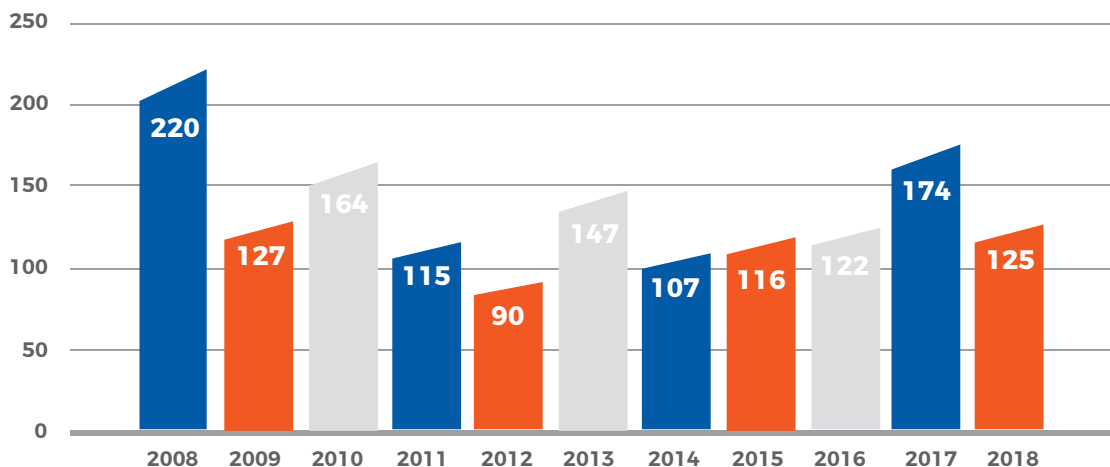
FY 2019 continued to be a very active year in the Assured and Adequate Water Supply Program. The staff hosted 20 pre-application meetings with potential applicants. During the year, the Program issued 125 determinations of assured or adequate water supply.



Those issued determinations included 22 Certificates of Assured Water Supply, seven extensions of Analyses of Assured Water Supply, and three water reports. In terms of the impact on growth to our State, these determinations represent the potential of more than 130,000 homes in 110 subdivisions throughout the State.

The Assured Water Supply team also processed 52 new applications for extinguishment credits and 20 applications for conveyance of existing credits. Extinguishment credits help developers comply with the AMA management goal through exchanging groundwater rights for credits that can be pledged to certificates or designated water providers. In 2019, staff processed applications that resulted in extinguishing grandfathered groundwater rights on 4,648 acres in exchange for 98,088 credits. In all, 8,740 of these credits were pledged to Assured Water Supply determinations in order to help achieve safe yield.

ISSUED DETERMINATIONS OF ASSURED OR ADEQUATE WATER SUPPLY



UNDERGROUND WATER STORAGE, SAVINGS, & REPLENISHMENT PROGRAM

Recharge



The Underground Water Storage, Savings, & Replenishment (Recharge) Program promotes the use of renewable water supplies, particularly Arizona’s entitlement to Colorado River water, while reserving groundwater through a flexible and effective regulatory program for the underground storage, savings and replenishment of water. The goals of the Recharge Program are to promote the use of renewable supplies; to augment the water supply; to help reduce groundwater overdraft; to provide for the efficient use of all water resources by allowing water to be “transported” by storing water in one location but recovering a like quantity elsewhere; and, to accommodate seasonal demand for water through recharge and recovery.

PERMITS AND TOTALS

The Recharge team issued the following permits in FY 2019:

5

New Underground Storage Facility (USF) permits were issued for an **8,211 acre-feet per year** increase in storage capacity

4

USF permits were modified or renewed this fiscal year

11

WS permits were issued, modified or renewed this fiscal year

3

Groundwater Savings Facility (GSFs) were renewed

TOTAL REPORTED VOLUME OF WATER DELIVERED FOR STORAGE IN REPORTING YEAR 2018

- Delivered 907,026 acre-feet of renewable water supplies to active facilities
-

LONG TERM STORAGE CREDITS

A total of 158 long-term storage accounts were updated and certified in FY 2019.

These accounts hold long-term storage credit (LTSC) balances ranging from a few credits to over a million credits, with over 11.7 million acre-feet of credits stored throughout the four AMAs.

A total of 65 long-term storage credit transfers were processed in FY 2019.

Review of FY 2018 Annual Report data and calculation of LTSCs in all three AMAs was completed for the Arizona Water Banking Authority by the deadline of June 30, 2019.



HYDROLOGY

The Hydrology Division collects and analyzes statewide water resources data, maintains a groundwater database, and develops groundwater models. The Hydrology Division is comprised of two sections: Groundwater Modeling and Field Services.

GROUNDWATER MODELING

The primary responsibility of the Groundwater Modeling Section is to develop, update, and document regional groundwater flow models within the five AMAs and other selected areas in the State. ADWR uses regional groundwater flow models to evaluate current conditions and simulate possible future scenarios. ADWR groundwater models are important tools used internally and by outside parties in support of water management policies and decisions.

In addition, Groundwater Modeling staff review hydrologic studies and groundwater flow models produced by others outside of ADWR on behalf of other ADWR programs, support other programs at ADWR, and perform geographic information systems (GIS) analysis of hydrologic data.

HIGHLIGHTS

- Prepared and published Willcox Basin Groundwater Model.

- Updated and published North Santa Cruz AMA Groundwater Model.

- Developing a Phoenix AMA Groundwater Model that replaces the Salt River Valley (SRV) model and provides more comprehensive coverage of the Phoenix AMA.

- Developing and calibrating a groundwater-flow model to assess groundwater conditions in the Buckeye Water Logged Area (BWLA).

- Conducted the initial consultation with parties in the BWLA on the scope of the review related to extension of the BWLA exemptions.

Groundwater Modeling has a total of 10 models, six for the AMAs and four for areas of the state outside the AMAs.

In cooperation with other ADWR staff, developed presentation materials and delivered the first-ever Junior Hydrologist Day which introduced children of ADWR employees to the world of water resources and hydrology.





FIELD SERVICES

The Field Services Section's main responsibilities include collecting, analyzing and interpreting hydrologic data. Field Services also prepares and publishes numerous reports and maps based on the data and information collected in the field. Field Services is comprised of the Basic Data Unit, Automated Groundwater Monitoring Unit and the Geophysics/Surveying Unit.

Basic Data staff collect groundwater-level data from wells and conduct well inventories throughout the State. They also collect stream flow and discharge data. Collected data is recorded and found online in the GWSI, which is maintained by Field Services staff.

The Automated Groundwater Monitoring Unit deploys and maintains automated groundwater monitoring devices in wells that record water levels on a predefined frequency on a continuous basis. Some of these wells are equipped with telemetry systems which transmit data to ADWR via satellite.

The Geophysics/Surveying Unit collects and processes data and interprets land subsidence and aquifer storage in order to better manage the State's water resources.

HIGHLIGHTS

- In cooperation with other ADWR staff, developed workflow process for identifying, reporting, notifying, and capping open (uncapped) wells.
- Prepared and submitted summary report for Phase 1 of the National Groundwater Monitoring Network (NGWMN) cooperative agreement with the U.S. Geological Survey (USGS). Completed development of Oracle database structure for inputting lithology and hydrogeologic data.
- Completed a well discharge project within the Pinal AMA collecting over 100 discharge measurements while training new staff on process and procedures of well discharge measurements.
- Prepared and published Statewide Water Level Change Report for Water Year 2016 and currently working on three other hydrology data reports to be completed in 2019.
- Completed inventory of newly drilled Non-Exempt wells within the last five years within all Active Management Areas and Irrigation Non-Expansion Areas.
- Conducted over 2,300 water-level measurements at over 1,800 index wells across the State.
- Reduced the number of "unable to measure" (UTM) water levels at index wells as part of AMS.



This photo shows the approximate land surface in 1969 and 2018, with nearly ten feet of land subsidence over that time period.

HIGHLIGHTS

- Collected over 1,800 water-level measurements during two basin sweeps in the Pinal AMA and Upper San Pedro groundwater basin.

- Completed new GWSI data download file that contains statewide GWSI water-level data for release to public.

- Supported development and conducted testing of IT projects including the AZ Wells Hub and Online Drillers Log. Completed numerous enhancements and functionality improvements to GWSI.

- Completed and submitted business case for 3rd Party Water Level Portal Phase 2.

- Created and published ADWR’s first-ever “story map” on land subsidence in the Willcox Basin (see image above).

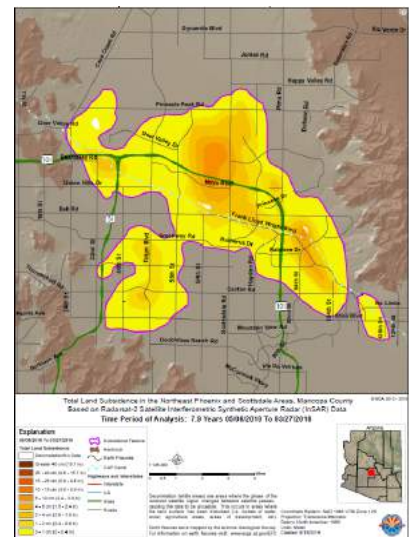
- Drafted and published Land Subsidence Monitoring Report #4 which describes ADWR’s Land Subsidence Monitoring Program and documents the findings.

- Published 44 new land-subsidence maps, bringing the total number of maps available in ADWR’s Hydrology eLibrary to more than 500 land subsidence maps (see image right).

- Completed update of Field Services Training Manual.

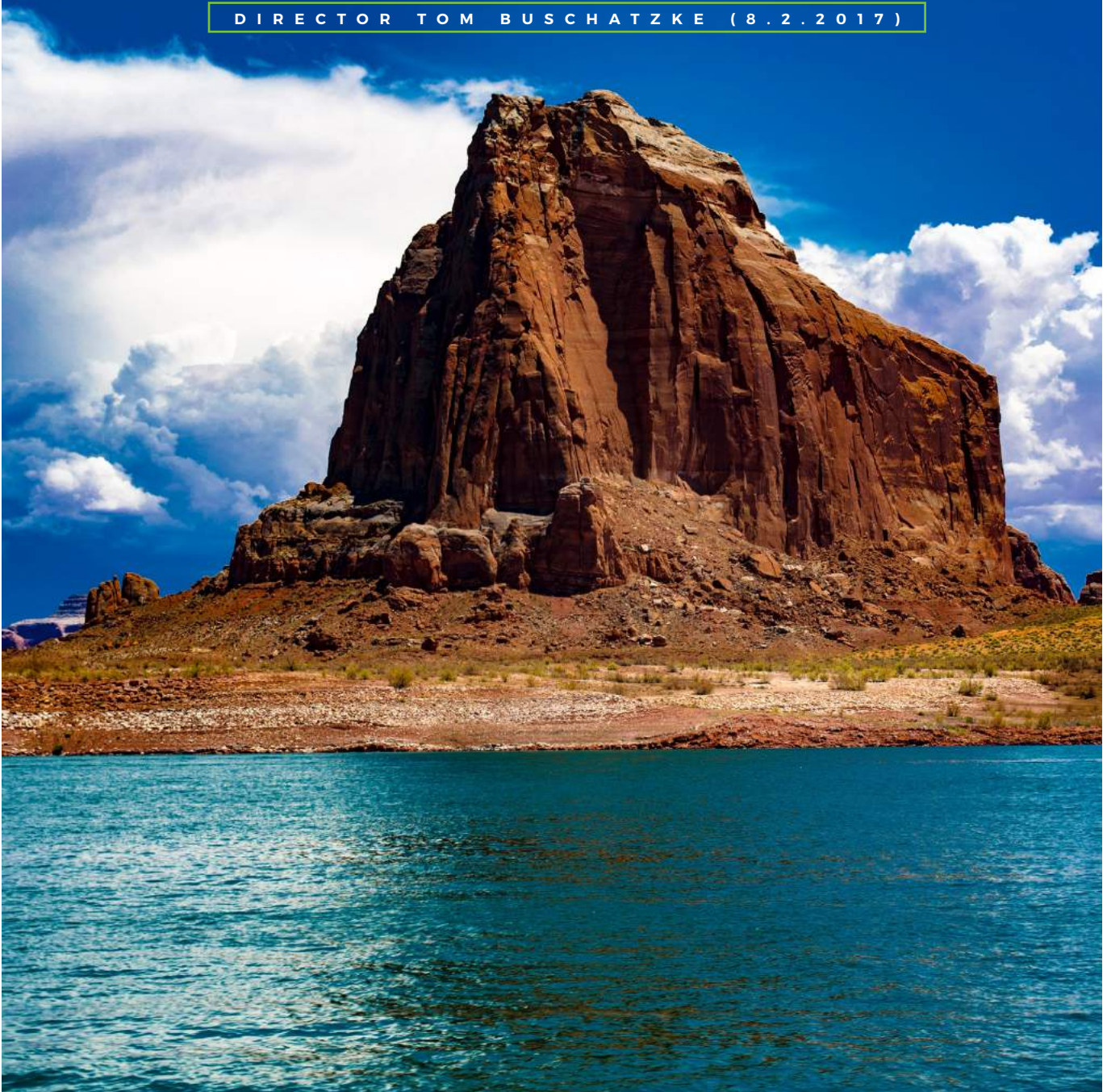
- Repaired automated monitoring device equipment at 63 sites statewide.

- Completed standard operations and maintenance site visits at all 129 well sites with automated monitoring equipment three times each this fiscal year.



“ARIZONA HAS CREATED A ROBUST WATER MANAGEMENT STRUCTURE TO MAXIMIZE ITS RESOURCES AND TO CREATE AND CONTROL ITS OWN DESTINY TO THE MAXIMUM EXTENT POSSIBLE.”

DIRECTOR TOM BUSCHATZKE (8.2.2017)



ENGINEERING



■ Flood Warning & Floodplain Management, & Dam Safety

The Engineering Section manages floodplains and jurisdictional dams in the state to reduce the risk of loss of life and property resulting from flooding or dam failure. The Engineering Section consists of two programs – Flood Warning and Floodplain Management, and Dam Safety.

FLOOD WARNING AND FLOODPLAIN MANAGEMENT

Flood Warning and Floodplain Management programs reduce risk to life and property by assisting local flood control and floodplain management efforts. The Flood Warning program coordinates with local communities, and state and federal agencies for the planning, design, construction and operation of flood warning systems, operates and maintains field equipment, and hosts the statewide flood warning website (afws.org). The Floodplain Management program coordinates the National Flood Insurance Program (NFIP) in Arizona, assists local communities participating in the NFIP through the implementation of the federally funded Community Assistance and cooperating Technical Partners programs, and publishes state criteria for floodplain delineations at the local level.

HIGHLIGHTS

ADWR received two grants from the Federal Emergency Management Agency: 1. A Community Assistance Program – State Support Services Element (CAP-SSSE) grant with a budget of approximately \$155,000, and 2. A Cooperating Technical Partners (CTP) grant of over \$120,000. Together, these grants support 2.5 FTEs in the Floodplain Management program. Both grants have primary objectives to assist local communities in Arizona with their floodplain management programs, and for ADWR to serve as a liaison between these local communities and

FEMA. Staff deployed elements of AMS to complete all task obligations under these grants successfully.



1. The Daily Team Huddles facilitated early identification of potential problems and allowed for rapid corrections in processes, as needed other programs at ADWR, and perform geographic information systems (GIS) analysis of hydrologic data.

2. Via the Huddle Board Metrics, the staff was able to set goals and milestones for the year and then track progress throughout the year.

3. Visual Management techniques were deployed to monitor the process flow and progress of two essential asks under this grant.

These techniques allowed ADWR to use available resources to maximize benefits to local communities seeking assistance with their floodplain management programs. Key achievements and accomplishments under these grants include:

- Staff led Community Assistance Visits (CAVs) and Community Assistance Contacts (CACs) with 19 NFIP communities in the State. These community contacts allow ADWR staff to interact with floodplain management staff from the local communities, provide communities with latest information on the NFIP, audit the communities' floodplain management programs, and provide the communities with information on available funding and training opportunities at the State and Federal levels.

- Staff conducted three training workshops on key elements of the NFIP. These workshops are well-attended and the audience typically includes local floodplain administrators, community building officials, consultants, and registered land surveyors.

- Staff provided General Technical Assistance (GTA) related to floodplain management to several communities including City of Buckeye, City of Bullhead City, Coconino County, Graham County, Navajo County, Town of Payson, City of Phoenix, Pinal County, Town of Quartzsite, City of Sedona, City of Somerton, City of Tucson, City of Goodyear, Town of Chino Valley, and Santa Cruz County and Yavapai County.

- As the lead State agency providing flood warning services in Arizona. Staff chaired the bi-annual Arizona Flood Warning System (AFWS) Multi-Agency Task Force (MATF) group meetings. The MATF includes staff from local, state and federal agencies involved in flood warning activities. The purpose of the meetings is to share flood warning information and to retain coordination among agencies.

- ADWR staff assisted the Arizona Department of Emergency and Military Affairs (DEMA) by serving on the Hazard Mitigation Grant Program's Review and Ranking Panel to review grant applications submitted by various stakeholders. This panel reviews proposals by communities for the FEMA grants under Pre-Disaster Mitigation, Flood Mitigation Assistance, Hazard Mitigation Grant, and Hazard Mitigation Grant Program - Post Fire programs.

- ADWR floodplain management staff participated in the semi-annual conferences hosted by the Arizona Floodplain Managers Association. These conferences present opportunities for staff to remain abreast of current floodplain management practices. In addition, ADWR and FEMA staff conduct "Office Hours" for communities to meet and discuss their floodplain management issues and projects with FEMA and ADWR. During this past year, Pima County, Mohave County, City of Prescott, La Paz County, Gila County, Maricopa County, Navajo County, and the City of Scottsdale participated in Office Hours.

DAM SAFETY

The mission of the Dam Safety Program is to maximize protection of human life and property against dam failure by ensuring the safety of jurisdictional dams in Arizona (256 dams) through reviewing and approving permits for construction of new dams and repairs to existing dams, inspecting dams and working with dam owners to remediate safety deficiencies.

HIGHLIGHTS

Inspections: During FY 2019, ADWR staff inspected all 108 high hazard potential dams under ADWR's jurisdiction. The dam engineering community recognizes safety inspections by knowledgeable and experienced individuals are key tools in identifying and managing risk associated with dams, particularly at a time when aging infrastructure is a known problem in Arizona and across the country.

The use of the Huddle Board and the Daily Huddles were instrumental in staff achieving this goal of inspecting all 108 high hazard potential dams in FY2019, even with the Dam Safety Section being one FTE short for nearly a year. Monthly targets for inspections were established at the start of the year, and then monitored in an easy-to-read visual format. This process allowed for early identification and addressing of potential problems that developed during the course of the year.

The dam safety inspections also allowed staff to identify safety deficiencies at dams, and to develop a list of priorities for corrective actions. Based on this prioritization, ADWR is currently providing financial assistance to the City of Safford for hiring an engineering consultant to assess the stability of Frye Mesa Dam under hydraulic and seismic loading conditions. The analyses are expected to be completed in FY 2020.

Staff Training: Technical training is vitally important so that staff keep abreast with technical and regulatory developments in the field of dam engineering. Furthermore, the Annual State Employee Survey identified staff training opportunities as an issue that required attention. As a result, the Dam Safety Section made a concerted effort to increase opportunities for technical training opportunities for staff. The Huddle Board includes a section where staff can identify training opportunities. A grant from FEMA and the National Dam Safety Board provided

Dam Safety Board provided funding for this training. As a result of these efforts, ADWR staff attended the annual conference of the Association of State Dam Safety Officials in Seattle, WA, and the West Regional Conference of ASDSO in Westminster, CO. In addition, staff also participated in various other classroom and online training sessions offered by local and national agencies.

The conference in Colorado was particularly useful because it included a visit to the Hydraulics Laboratory at Colorado State University to learn about hydraulic modeling and analyses of spillways.

Standard Work Development: Staff developed Standard Work to document several tasks crucial to the Dam Safety Program including inspections of embankment and non-embankment dams, reviewing Construction Quality Assurance Plans, reviewing applications, and coordinating with other sections within ADWR. These documents promote quality and consistency in the section and help with coordination and communication across sections at ADWR.



REGIONAL PLANNING

■ Planning Areas & Rural Water Studies

The Rural Programs Section of ADWR's Statewide Planning Division provides resources to areas of the State located outside of AMAs. This section carries on work initiated as part of the 1999 Rural Watershed Initiative, providing citizen organizations and local governments with technical information, administrative support, and advice on water issues.

ADWR's regional planning activities in FY 2019 included data collection and technical studies of specific areas throughout the State. These activities were conducted by ADWR and by the United States Geological Survey (USGS) through contractual agreements.

ADWR provided funding to the USGS in FY 2019 for the following:

- Irrigation field verification in the Bill Williams, Gila Bend, Hualapai, Sacramento, McMullen Valley, Upper San Pedro, and Willcox groundwater basins
- Hydrologic data collection in support of analysis of the hydrologic system of the Middle Verde River watershed
- Statewide water use information compilation



PLANNING AREAS

Activities associated with the former Planning Area Process of the Governor's Arizona Water Initiative began in 2016 and will continue for all planning areas in coordination with ADWR's regional planning efforts.

PLANNING AREA UPDATES

The planning area work has focused on collecting water-use information across the state. In FY 2019, updates of agricultural, municipal, and industrial use sector demands for six planning areas were completed: Cochise, Northwest Basins, West Basins, Lower Gila, Gila Bend, and Hassayampa/Agua Fria.





RURAL WATER STUDIES

The Arizona Legislature has annually provided funding to ADWR for Rural Water Studies since FY 2000. In recent years, those funds have been used for a variety of hydrogeologic monitoring purposes in rural areas, to support local water demand and supply studies, augmentation feasibility studies, and water loss technical assistance program to help water systems determine sources of water losses and the anticipated cost to reduce those losses. This funding also supports personnel and water resources data collection and investigations assisting rural communities with long-term planning and management programs. These data collection efforts directly support the expanded monitoring strategy identified in Arizona's Strategic Vision for Water Supply Sustainability.

ADWR actively participates with 10 groups including rural watershed partnerships, municipal water users, and other entities that represent water interests within Arizona. ADWR provides technical support, policy information, and assistance as requested to these groups and attends multiple meetings per month with the associated governing bodies, executive committees, and technical advisory committees.



HIGHLIGHTS

Regional Planning Presentations and Stakeholder Outreach outside of the AMAs:

ADWR Statewide Planning staff:

- Participated in phase 2 of the Arizona Water Loss Technical Assistance Program

- Provided letters of support for Bureau of Reclamation WaterSMART grants for two successful grantees to establish a new watershed partnership (Cobre Valley) and expansion of an existing partnership (Coconino Plateau)

- Participated in discussions with County Board of Supervisors' and representative regarding studies for West Basins and Northwest Basins planning areas

- Assisted stakeholders in the Coconino Plateau area of northern Arizona to assess potential for amendments to ADWR's Adequate Water Supply rules

- Provided a presentation at the Water Resources Research Center annual water conference

- Participated as speakers for the Cobre Valley Water Forum events in Gila County

- Participated as a speaker for the Coconino Plateau Watershed Partnership and Coconino Center for the Arts water bootcamp

- Participated in the Arizona Cross Watershed Network Statewide Partners meeting for rural watershed partnerships

TRIBAL WATER SETTLEMENT NEGOTIATIONS

ADWR represents the State of Arizona in negotiations for the settlement of tribal water rights claims. Eleven of Arizona's 22 federally recognized Indian tribes have outstanding water rights claims. Resolution of these claims through settlement rather than litigation is a priority for the State of Arizona. Settlement avoids the significant costs associated with litigation and generally results in benefits for both tribal and non-tribal water users, including greater certainty regarding available water supplies.

During FY19, the following tribal settlement activities occurred:

HUALAPAI TRIBE

The Bill Williams River Water Rights Settlement Act of 2014 approved a settlement of the Hualapai Tribe's water rights claims in the Bill Williams River Watershed, south of the Tribe's main reservation, between the Tribe, the United States and Freeport Minerals Corporation ("Freeport"). The settlement did not settle the Tribe's other water rights claims in the state, including its claims to groundwater and Colorado River water for its main reservation.

In FY 2019, the Hualapai Tribe, the State of Arizona, the Central Arizona Water Conservation District, the Salt River Project and Freeport signed a comprehensive settlement agreement settling all the Tribe's water rights claims in Arizona. Legislation approving the settlement was introduced in Congress on May 1, 2019. On June 26, 2019, Director Buschatzke testified in support of the settlement before the House Subcommittee on Water, Oceans, and Wildlife. ADWR will continue to provide support for this proposed settlement.

TOHONO O'ODHAM NATION

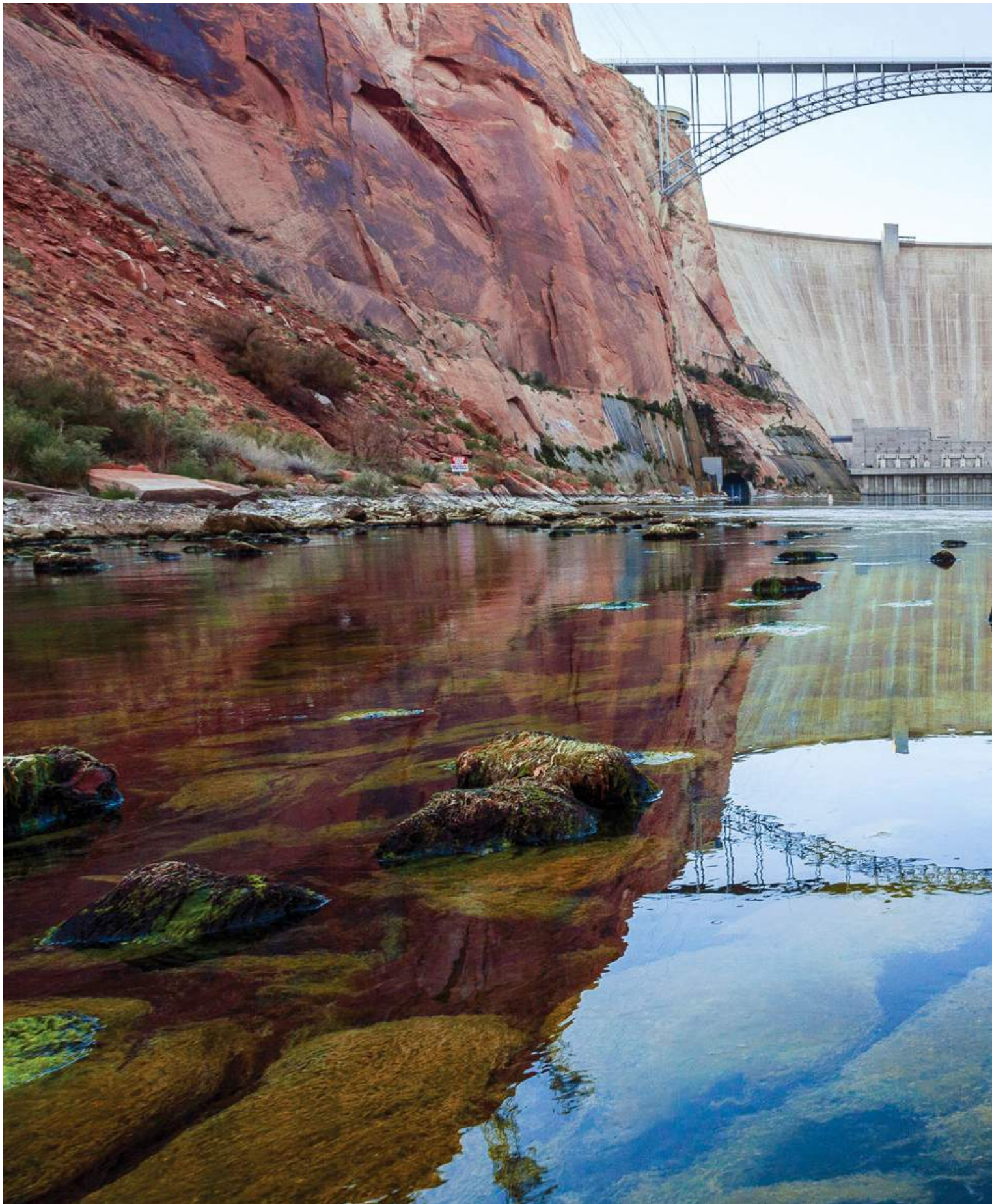
Federal legislation enacted in 1982, 1986 and 2004 settled the Tohono O'odham Nation's water rights claims for some, but not all, of the Nation's lands. Discussions to settle the Nation's remaining water rights claims, including claims for its Sif Oidak District, occurred in 2010, but did not result in a settlement. During FY 2019, ADWR met with representatives of the Tohono O'odham Nation to discuss re-initiating negotiations for a settlement of the Nation's outstanding water rights claims. ADWR anticipates that settlement discussions will occur during the next fiscal year and will include the Tribe, ADWR, the United States and various State water users. Those discussions will be confidential.

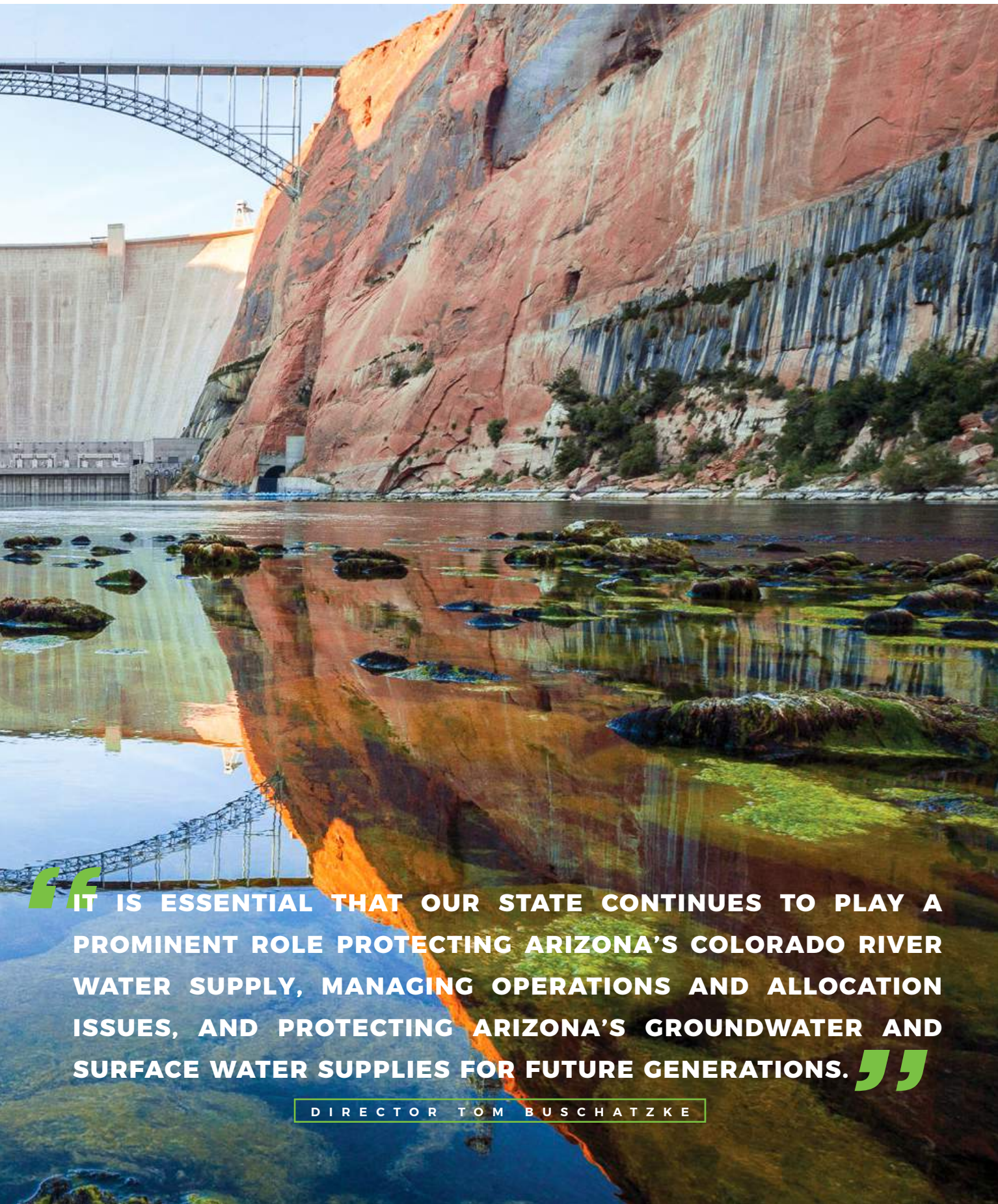
WHITE MOUNTAIN APACHE TRIBE

The White Mountain Apache Tribe's water rights claims were resolved through a water rights quantification agreement (Agreement) approved by Congress in 2010 (Public Law 111-291). Although the Agreement was approved by Congress, the Agreement will not become enforceable until certain conditions are met, including the issuance of a Record of Decision by the Secretary of the Interior approving construction of the Miner Flat Dam and other water infrastructure for use by the Tribe as authorized in the Federal legislation approving the Agreement. After the Federal legislation was enacted, it was discovered that construction costs would likely exceed the \$126 million appropriated for construction due to seepage and stability issues at the dam site. To address this issue, federal legislation was enacted in 2018 authorizing monies appropriated to the Tribe for other water-related purposes to be used for the construction of Miner Flat Dam (Public Law 115-227).

YAVAPAI-APACHE NATION

During FY 2019, ADWR had discussions with the Yavapai-Apache Nation regarding a potential settlement of the Nation's water rights claims. It is expected that settlement discussions will be ongoing during the next fiscal year and will involve the United States and a number of State water users. Those discussions will be confidential.





“ IT IS ESSENTIAL THAT OUR STATE CONTINUES TO PLAY A PROMINENT ROLE PROTECTING ARIZONA’S COLORADO RIVER WATER SUPPLY, MANAGING OPERATIONS AND ALLOCATION ISSUES, AND PROTECTING ARIZONA’S GROUNDWATER AND SURFACE WATER SUPPLIES FOR FUTURE GENERATIONS. ”

DIRECTOR TOM BUSCHATZKE



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