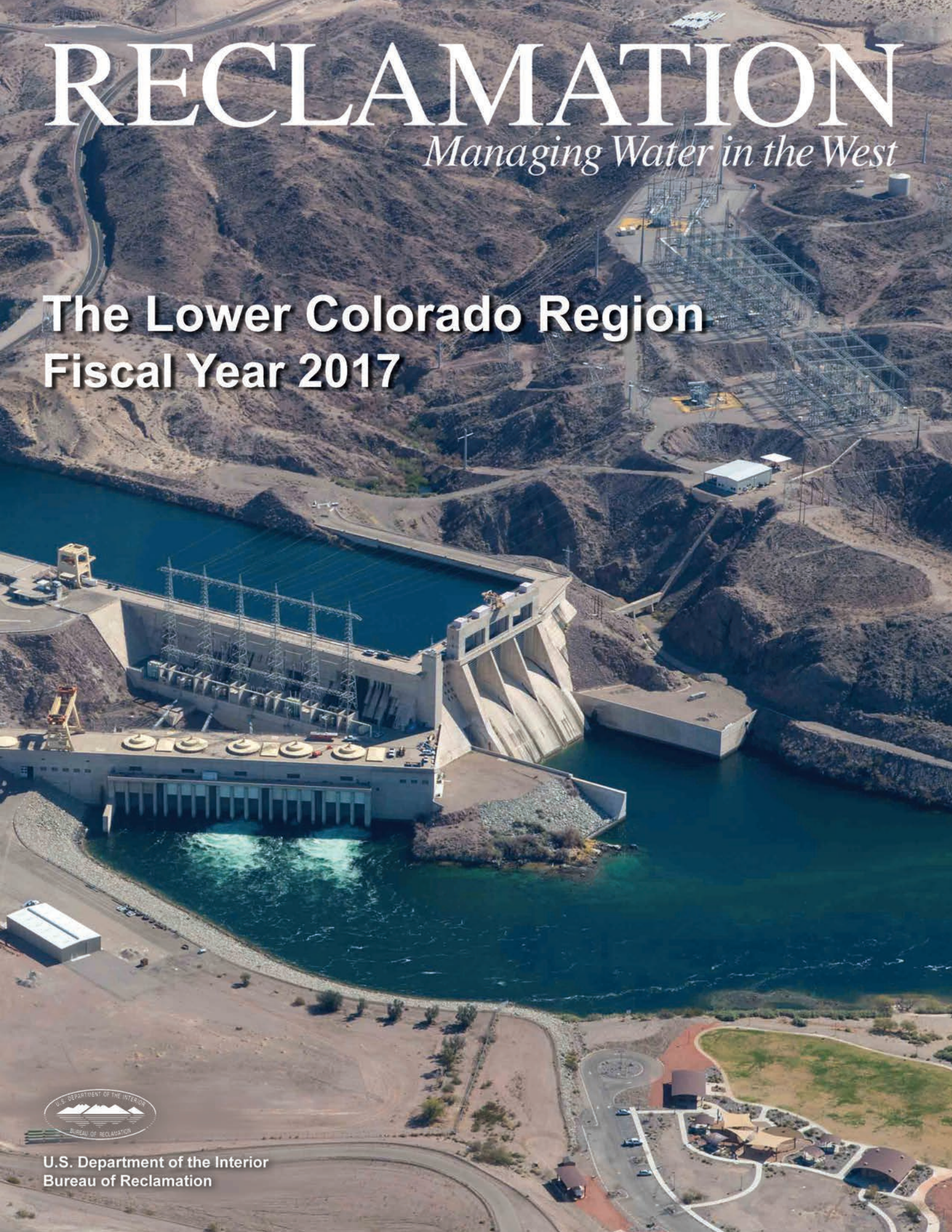
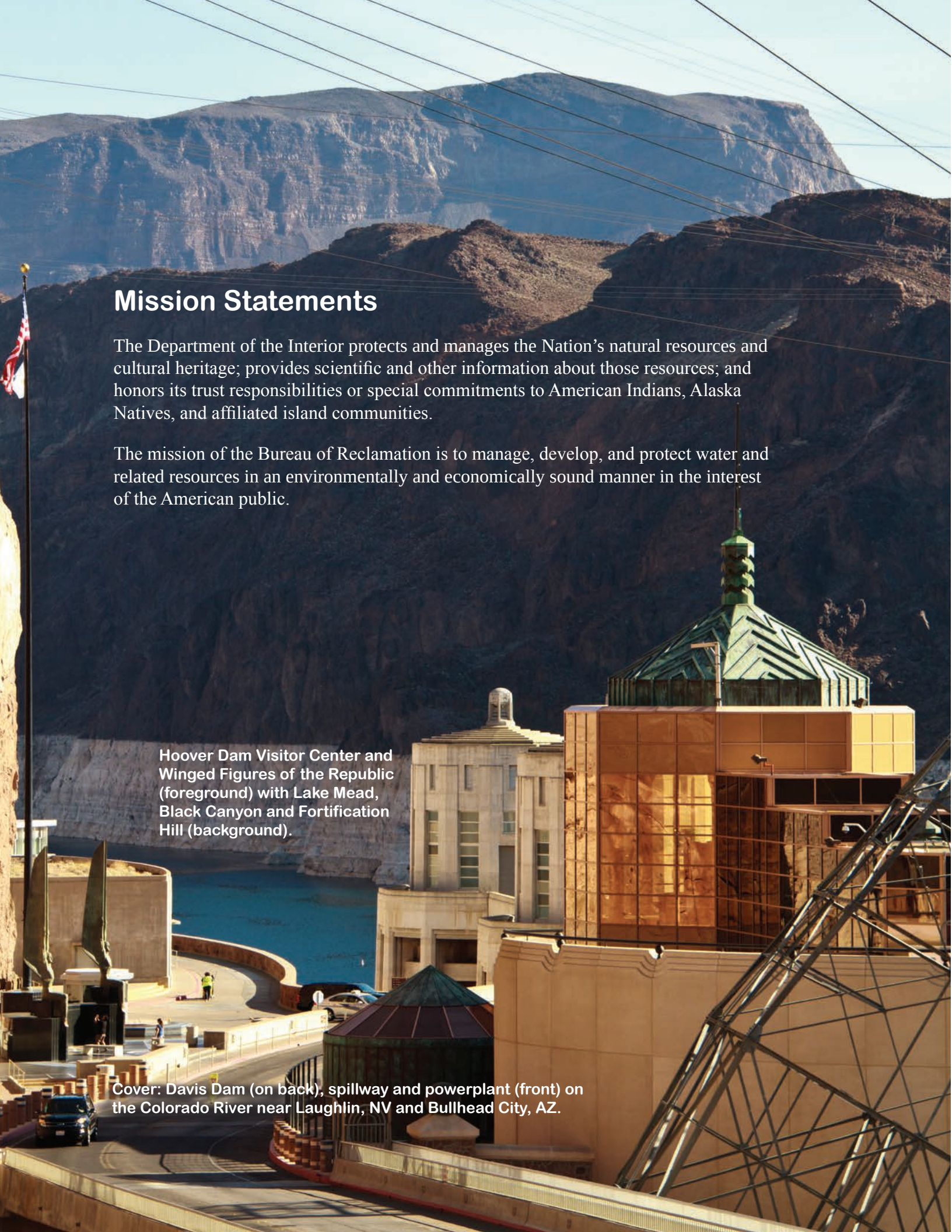
RECLAMATION

Managing Water in the West

The Lower Colorado Region
Fiscal Year 2017



U.S. Department of the Interior
Bureau of Reclamation



Mission Statements

The Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Hoover Dam Visitor Center and Winged Figures of the Republic (foreground) with Lake Mead, Black Canyon and Fortification Hill (background).

Cover: Davis Dam (on back), spillway and powerplant (front) on the Colorado River near Laughlin, NV and Bullhead City, AZ.

Regional Director's Message

I am pleased to share with you the Lower Colorado Region's annual report for Fiscal Year 2017. This report highlights many of the Region's accomplishments, achieved only through the skill, dedication and hard work of our approximately 850 employees.

Our Region continues to manage, protect and enhance a broad range of water, power, land and ecosystem resources in the interest of the American public. Our commitment to transparent and collaborative problem-solving, with the involvement of all our partners and stakeholders, is paramount to the way we have and will continue to do business.

I am extremely proud of what we have been able to accomplish this year, yet we also know many challenges remain. One thing is certain – the complexity of the issues we face on the lower Colorado River and Region-wide continue to increase. I assure you that we'll continue to work diligently to address those issues and continue to effectively and efficiently accomplish our mission.

I invite you to read this report and learn more about our challenges and successes over the past year. Please share any feedback you may have via email at LC_report_feedback@usbr.gov.

Sincerely,

Terrance J. Fulp, Ph.D.
Regional Director
Lower Colorado Region

Lake Mead framed by Joshua trees near Boulder City, Nevada.

Table of Contents

The Colorado River carves its way through the Grand Canyon before entering Lake Mead.

Who We Are

The Lower Colorado Region was established by the Bureau of Reclamation in 1943 to design, construct, manage, and maintain projects and facilities in the southwestern United States.

The Region spans the Lower Colorado River Basin, which encompasses southern Nevada, southern California, most of Arizona, a small corner of southwest Utah, and the Gila and Little Colorado River Basins in west-central New Mexico – or about one-tenth of the land area of the western United States. Reclamation employees began working in this area soon after Congress passed the Reclamation Act in 1902.

Reclamation's numerous projects and facilities in the Region – including the Salt River Project and Theodore Roosevelt Dam, Hoover Dam and the All-American Canal, the Yuma and Gila Projects, Parker-Davis Project, the Central Arizona Project, and the Robert B. Griffith Project (now Southern Nevada Water System) – have and will continue to contribute significantly to the Southwest's economic growth and development.

Building water and power facilities was the Region's major role for most of the 20th century. Today, we are focused primarily on operating and maintaining our facilities; ensuring the safety and security of our projects, employees and visitors; ensuring efficient delivery of water and power; and protecting, preserving and enhancing natural and recreational resources.

The Region, headquartered in Boulder City, NV, is comprised of offices located in Boulder City; Phoenix and Yuma, AZ; Temecula, CA; and at Hoover Dam that perform critical functions necessary to ensure successful program accomplishment.

Reclamation reservoirs, like Lake Mohave seen here, provide year-round water supplies for residents and wildlife throughout the arid Southwest.

Colorado River Basin

The Colorado River and its tributaries, the primary sources of water in the Basin, serve some of the most arid lands in the U.S.

Our FY 2017 Budget

The Lower Colorado Region's total operating budget in Fiscal Year (FY) 2017 was $516.8 million, from the following funding sources:

- Congressional appropriations
- "permanent funding" from the sale of Hoover Dam power;
- revenues received for Central Arizona Project (CAP) activities including Navajo Generating Station surplus power sales;
- non-federal funds from Parker-Davis Project power contractors and the Lower Colorado River Multi-Species Conservation Program cost-share partners; and
- other federal funds provided by the Bureau of Indian Affairs through the Southern Arizona Water Rights Settlement Act.

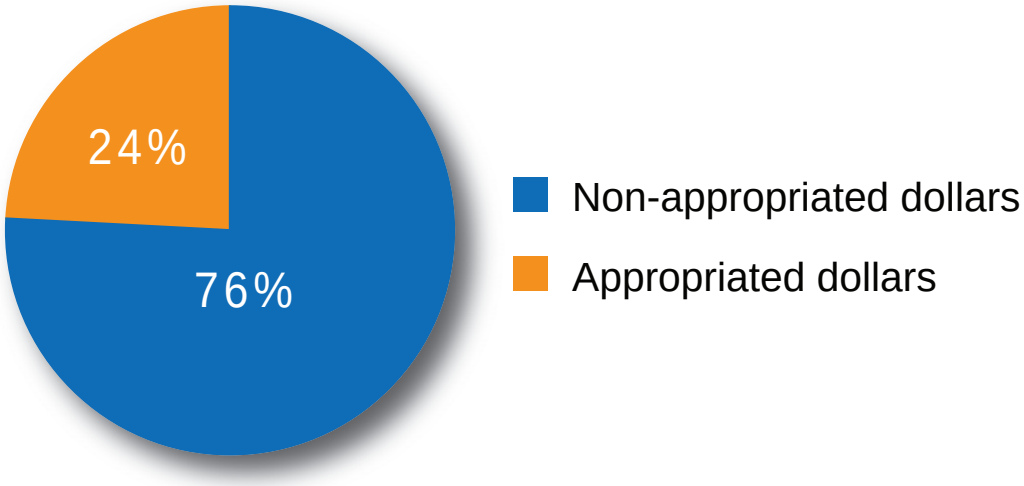
Most of our annual operating funds are provided by program revenues or project partners. In FY 2017, ***76 percent*** of the Region's total operating budget came from project revenues collected from the Region's non-federal partners and stakeholders.

Approximately ***24 percent*** of the total operating budget came from Congressionally appropriated dollars.

In FY 2017, **Congress appropriated $119.8 million** for Region-wide programs, projects, and activities including water operations and a portion of the costs of maintaining facilities on the lower Colorado River, meeting Endangered Species Act requirements, implementing drought contingency plans, supporting water conservation and reuse, complying with the 1944 Water Treaty with Mexico, and meeting legislative mandates.

Permanent funding totaled $102.8 million for this FY. These revenues come from entities that have long-term contracts for power generated at Hoover Dam. The 1984 Hoover Dam Power Plant Act requires that revenue from the sale of Hoover Dam power be deposited into the Colorado River Dam Fund and made available to pay for operations, maintenance, replacement, and repayment associated with the Boulder Canyon Project.

FY 2017 Funding Sources

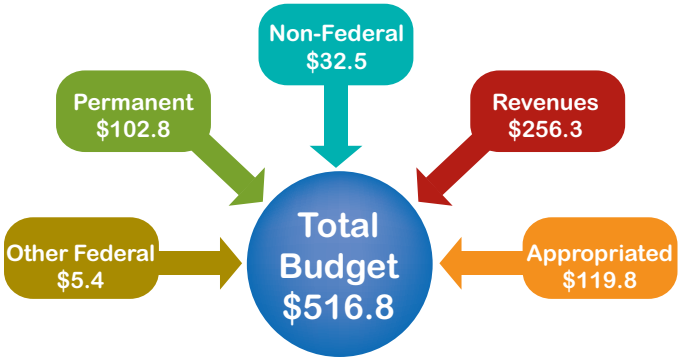


Revenue program funds totaled $256.3 million in FY 2017. Payments made each year by the Central Arizona Water Conservation District to repay construction of the CAP are deposited into the Lower Colorado Basin Development Fund (established by the 1968 Colorado River Basin Project Act).

In addition to these payments, other revenues deposited into this account come from the sale of power that is surplus to CAP pumping needs, a surcharge on power sold in Arizona from Hoover, Parker, and Davis dams, miscellaneous revenues from CAP operations, and other sources. The Arizona Water Settlements Act of 2004 also authorizes revenues that would have been returned to the Treasury for repayment of CAP construction costs to be retained in this account and invested with any earned interest deposited back into the account. Revenues remaining after the CAP construction repayment are used to pay for the cost of constructing tribal distribution systems and delivering CAP water to tribal lands, along with other costs authorized under the Act.

Non-federal funding totaled $32.5 million in FY 2017. Of this funding, the Parker-Davis Project power contractors provided approximately $15.9 million to operate and maintain Parker and Davis dams. The Lower Colorado River Multi-Species Conservation Program partners provided $16.6 million to match appropriations to carry out efforts to conserve native species and their habitats in compliance with the Endangered Species Act.

FY 2017 Budget
($ in millions)



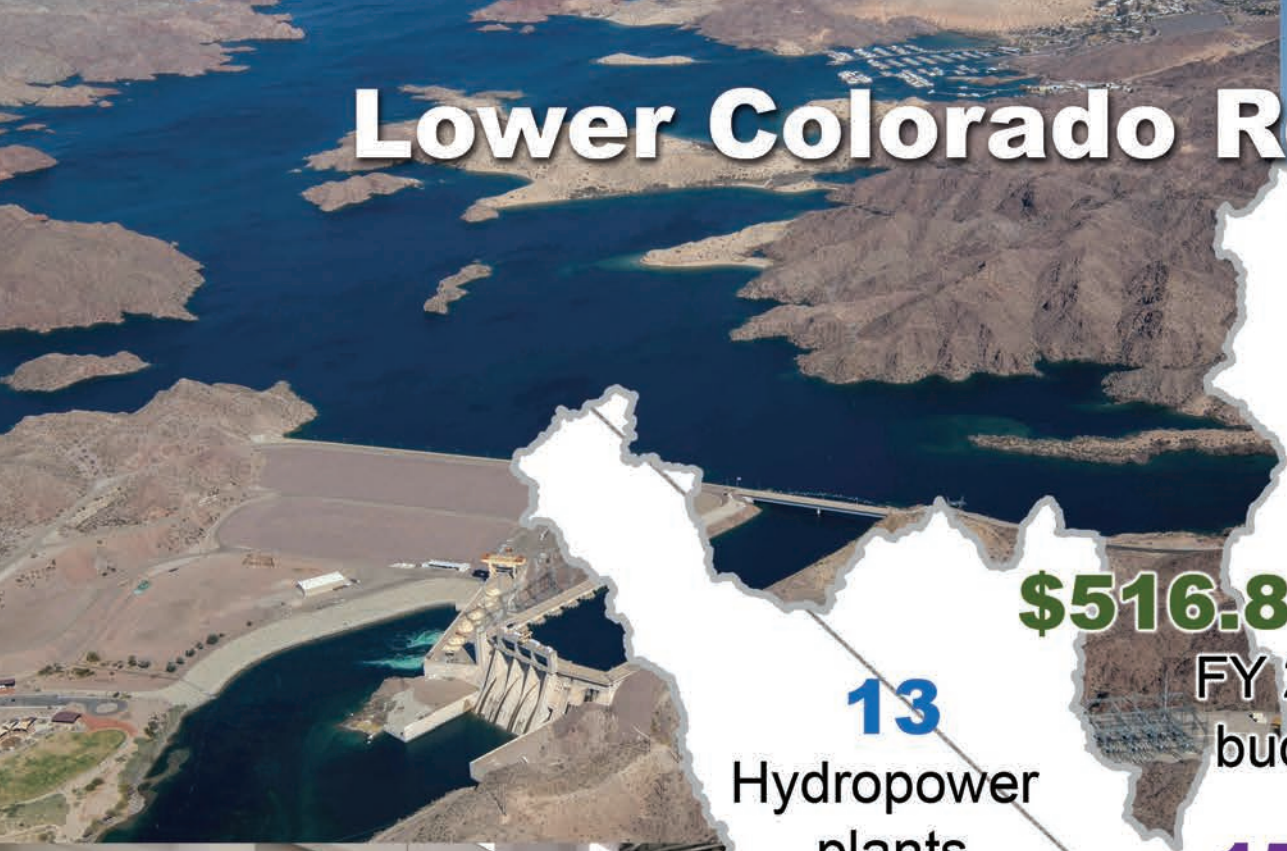
Other federal funding, a total of $5.4 million, was provided by the Bureau of Indian Affairs as required by the Southern Arizona Water Rights Settlement Act. These funds are used for the annual delivery of irrigation water to the 2.8 million-acre Tohono O'odham Nation tribal community in southern Arizona.

FY 2017 Financial Commitments

The Region obligated approximately $132.2 million for project-related activities through the award of 838 contract actions, 185 financial assistance agreements, 10 Public Law 93-638 Indian Self-Determination contracts (new contracts and modifications), and 14,433 micro-purchases.

Through these awards and purchases, small businesses and tribes benefited by approximately $53.1 and $34.7 million, respectively. About 28.5 percent of the funds obligated through these awards and purchases were from non-appropriated funds.

Lower Colorado Region



$516.8 Million
FY 2017 budget

13
Hydropower plants

15
Dams

5.56 Billion
Kilowatt-hours produced in 2017

13
Reservoirs

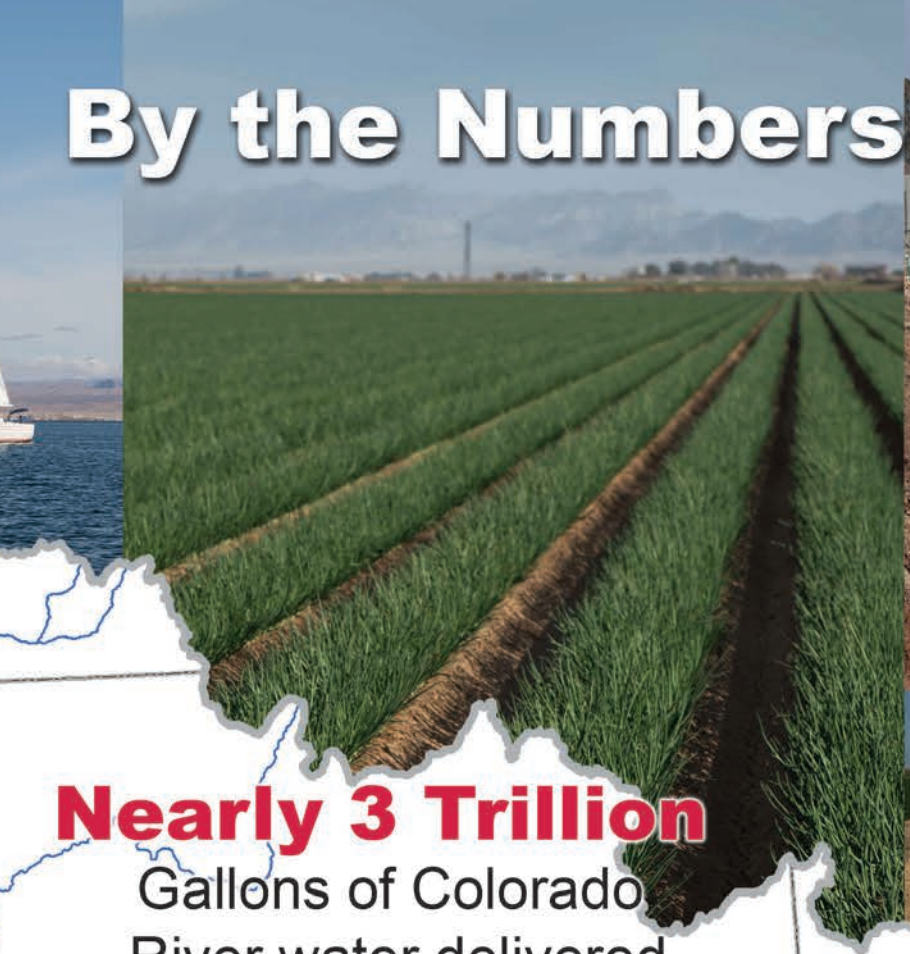
2,746
Megawatts of hydropower capacity

844
Employees

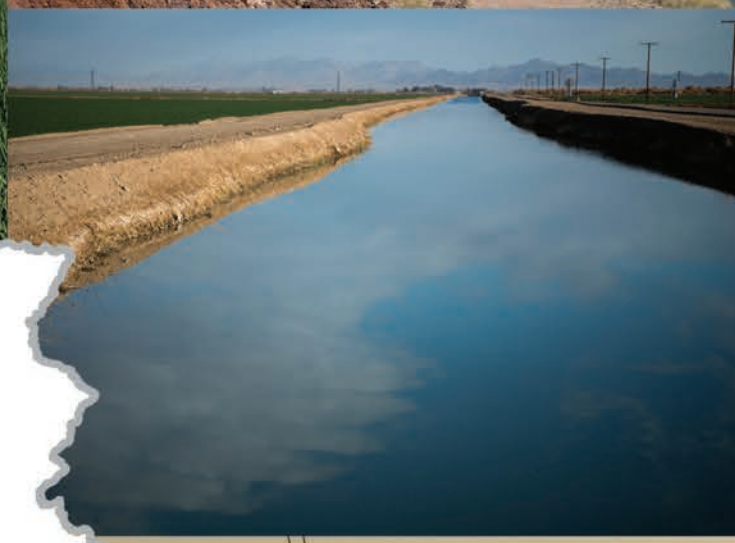
1
National Water Trail

1
Border neighbor (Mexico)

By the Numbers



Nearly 3 Trillion
Gallons of Colorado River water delivered



34.1 Million
Acre-feet of reservoir capacity
(An acre-foot is 325,851 gallons)

$3 Billion
Value of water related outdoor recreation activities

32
Recreation areas

1.3 Million
Acres of land owned/managed

Managing the Lower Colorado River

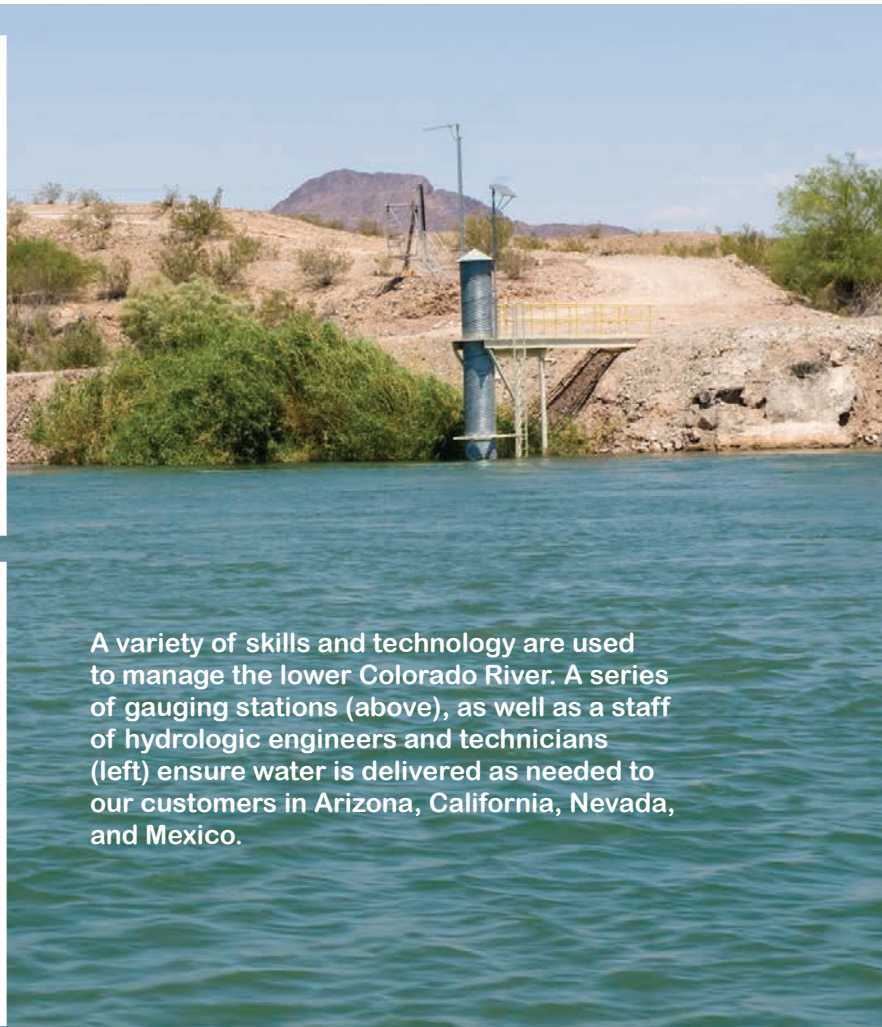
The Water Master Role

Under the Law of the River, the Secretary of the Interior manages the last 688 miles of the Colorado River, from Lee Ferry in northern Arizona to the border with Mexico. This includes the contracting, delivery, and accounting of all water use from the mainstream of the lower Colorado River.

The Region implements these management functions on the Secretary's behalf. Staff schedule water releases from mainstream facilities on a monthly, daily, and for some facilities, hourly basis; measure, record and report water diverted and returned to the mainstream; administer contracts for water delivery; account for all water use; and, with Reclamation's Upper Colorado Region and in close coordination with a broad range of partners and stakeholders throughout the Basin, develop the Annual Operating Plan for Colorado River Reservoirs (AOP).

The AOP documents operating decisions for the reservoirs for the completed year, as well as projected operations for the upcoming year. For Lake Powell and other Upper Basin reservoirs, the standard time period for a year is the "Water Year" (WY), from October 1 through September 30. For Lake Mead and other Lower Basin reservoirs, the calendar year (CY), January 1 through December 31, is the standard time period.

Documented decisions include the amount of water to be released from Lake Powell through Glen Canyon Dam to the Lower Basin; whether a "surplus, normal, or shortage" condition will govern the



A variety of skills and technology are used to manage the lower Colorado River. A series of gauging stations (above), as well as a staff of hydrologic engineers and technicians (left) ensure water is delivered as needed to our customers in Arizona, California, Nevada, and Mexico.

operation of Lake Mead; and the amount of water available to Mexico under the 1944 Water Treaty and subsequent U.S.-Mexico agreements (referred to as "Minutes"). Because the water supply for the coming year is uncertain, operational changes are made within the appropriate operating guidelines and documented in the AOP as water supply conditions change during the year.

In a "normal" year, water users in Arizona, California, and Nevada are apportioned 2.8, 4.4, and 0.3 million acre-feet (MAF), respectively, and Mexico is allotted 1.5 MAF under the 1944 Water Treaty.

To date, there has not been a shortage in the Lower Basin, nor a reduction to Mexico. This is due primarily to the ability of Colorado River system reservoirs, particularly Lake Mead and Lake Powell, to store water during high flow years.

2017 System Status and River Operation Highlights

Approximately 90 percent of the Colorado River Basin's annual water supply originates in the Upper Basin. In WY 2017, the cumulative precipitation within the Upper Basin was 110 percent of the 30-year average from 1981 through 2010. Inflow into Lake Powell during WY 2017, taking into account the effects of operations upstream, was 110 percent of the 30-year average.

The total inflow into Lake Mead is a combination of the water released from Glen Canyon Dam and inflows to the river from tributaries between Glen Canyon and Hoover dams.

In WY 2017, inflow into Lake Mead was 9.99 MAF, including 9.0 MAF released from Glen Canyon Dam and 994,000 acre-feet (AF) of tributary inflow, primarily from the Little Colorado and Virgin rivers. Inflow into Lake Mead for CY 2017 was 9.66 MAF and release through Hoover Dam was 8.73 MAF. Lake Mead's condition improved slightly during CY 2017. Lake Mead began CY 2017 at elevation 1,080.82 feet, with 10.08 MAF of water in storage (approximately 39 percent full), and ended CY 2017 at elevation 1,082.52 feet with 10.22 MAF of water in storage (also approximately 39 percent full), an increase of 1.7 feet in elevation, or approximately 140,000 acre-feet in additional storage.

Basin-wide, the amount of water stored in Colorado River system reservoirs increased from 51 to 55 percent of capacity during WY 2017.

As documented in the 2017 AOP, 7.5 MAF of water (plus or minus credits for conserved water that remains in Lake Mead) was available for delivery to entitlement holders in the Lower Basin in CY 2017. In accordance with the 1944 Water Treaty, 1.5 MAF was also available for delivery to Mexico in CY 2017, subject to adjustments provided for in Minutes 319 and 323.

In FY 2017, we continued efforts to efficiently operate the river by working with irrigation districts to improve the accuracy of water orders and subsequent diversions. Also, Brock Reservoir in Southern California, coupled with other operational improvements, enabled us to continue to capture water arriving at Mexico's Northerly International Boundary that was in excess of scheduled deliveries.

Brock Reservoir

Brock Reservoir (inset photo) in Southern California helps manage Colorado River water supplies by capturing water that is in excess of scheduled deliveries at Mexico's Northerly International Boundary. Water stored in the Reservoir is subsequently delivered to the Imperial Irrigation District as part of its annual entitlement in lieu of releasing water from system storage.

In CY 2017, due in part to the operations of this Reservoir, excess flows to Mexico were 16,691 acre-feet (AF), as compared to the annual average of approximately 65,000 AF from 2007 through 2016.

A 6.5 mile-long inlet canal conveys water from the All-American Canal to the Brock Reservoir.

Increasing Water Availability

Water is the Southwest's most precious natural resource. Water supplies, however, are increasingly stressed by demand from a variety of sources including an economically viable agricultural industry, rapid urban growth, and environmental needs. These needs, combined with a highly variable water supply, require the development of new water sources. Adequate supplies are essential to survival, to a healthy ecosystem, to energy production, and to economic sustainability.

Reclamation works through a variety of programs with water resource stakeholders to develop innovative strategies to ensure adequate supplies are available to meet these increasing demands into the future.

To address projected impacts and help relieve demand on the Colorado River and other sub-basins in the Region, we work with state and local water agencies, tribes, and non-governmental organizations to participate in the Department of the Interior's WaterSMART (Sustain and Manage America's Resources for Tomorrow) program. This initiative, under the SECURE Water Act, provides resources to address changing water supplies and demands, and enables us to take action to secure water resources for communities, economies, and ecosystems. This is achieved through a number of programs including Basin Studies, Water Conservation Field Services Program (WCFSP), Water and Energy Efficiency Grants, Small Scale Water Efficiency Projects, Cooperative Watershed Management, Title XVI Water Reclamation and Reuse, Drought Response, and the Reservoir Operations Pilot Initiative.

Collectively, these programs provide technical and financial assistance to organizations with water and/or power delivery authority through agreements typically requiring a 50 to 75 percent non-federal cost share. In 2017, the Region awarded 10 WCFSP grants totaling $670,000 that was cost-shared by $1.6 million from non-federal partners.

In FY 2017, we participated in the San Diego River Basin Study in California, and continued the West Salt River Valley and Lower Santa Cruz River Basin Studies in Arizona. We also initiated the Eloy and Maricopa-Stanfield Basin Study in southeast Arizona to project the potential variability of future water supply and demand in those areas. The Region continued our partnership with the Salt River Project on the Reservoir Operations Pilot Study to identify a range of potential changes in surface water availability, and determine the resulting effects on operations of the Salt and Verde river systems in Arizona.

Projected long-term water supply and demand imbalances were identified in the 2012 Colorado River Basin Water Supply and Demand Study, which documented the need and commitment to undertake a Tribal Water Study. During FY 2017, the Region continued working with the members of the Ten Tribes Partnership to assess tribal water supplies, current water use, and future water demand. The Tribal Water Study will identify opportunities and challenges associated with tribal water resources.

Additionally, 24 water and related resources planning studies totaling $2.6 million, including $1.3 million of in-kind services provided by study partners, continued in 2017. These studies are designed to help local and state water managers and agencies

Demands on the resources of the Colorado River are diverse, including (clockwise from top left) agriculture, recreation, hydropower, and increasing urban and municipal needs.

develop strategies to sustainably meet their current and future water supply needs.

Under the Title XVI program, the Region awarded five grants totaling $19.4 million to help Southern California agencies design and construct water recycling and treatment plants. These include the Chino Desalter expansion project, the City of San Diego Pure Water Program, the Padre Dam Municipal Water District water recycling project, the Hi-Desert Water District wastewater collection and reuse project, and the City of Pasadena non-potable water project. The Region also awarded two grants totaling $300,000 to help the Las Virgenes Municipal Water District and the Valley Center Municipal Water District prepare feasibility studies for their proposed recycled water projects. Additionally, three grants totaling $648,526 were awarded for research projects related to water recycling: two to the City of San Diego, and one to Las Virgenes Municipal Water District. In FY 2017, Title XVI projects in Southern California produced over 354,000 AF of water.

Yuma Desalting Plant: A Potential Tool to Increase Water Supply

The Yuma Desalting Plant (YDP), a reverse osmosis desalting facility near the border with Mexico, was constructed to desalinate up to 72 million gallons per day of highly saline flows that originate in the Wellton-Mohawk Valley east of Yuma, AZ. The desalinated water would be returned to the Colorado River to be included in deliveries to Mexico. After construction was completed in 1992, Reclamation did not operate the YDP due to surplus water conditions in the system. With the prolonged drought in the Southwest, however, there is renewed stakeholder interest in Reclamation operating the facility to increase system water supply.

Reclamation is maintaining the YDP while using available funding to replace aged infrastructure to ready the plant for potential future operations. In FY 2017, we continued to make progress on designs for equipment replacements and awarded $1.2 million in contracts to modernize equipment at the facility. Additionally, $2 million was invested in infrastructure repairs and replacements on the 23-mile long canal system that carries the saline flow that is the source water for the plant.

New Mexico's Central Arizona Project 'Unit'

Like other states, New Mexico is looking at its potential future water needs, and pursuing actions that will help it meet those needs.

The Colorado River Basin Project Act of 1968 and the 2004 Arizona Water Settlements Act (AWSA) authorized the Secretary of the Interior to enter into contracts with southwestern New Mexico water users that would, under certain conditions, allow them to consumptively use Gila River water that is currently being used by entities in Arizona. In exchange, an equivalent amount of Colorado River water from the Central Arizona Project (CAP) would be delivered to users in Arizona.

The State of New Mexico has elected to pursue and construct a diversion project, also known as a "Unit," under the AWSA.

Reclamation, as specified in the AWSA, is conducting National Environmental Policy Act reviews of the potential Unit. In conjunction with these reviews, Unit alternatives will be analyzed using the *Federal Principles, Requirements, and Guidelines for Water and Land Related Resources Implementation Studies.*

In FY 2016, Reclamation and the Department of the Interior finalized and executed the Unit Agreement with the New Mexico Interstate Stream Commission (ISC). Reclamation also completed Memorandums of Understanding with the ISC and with the New Mexico CAP Entity for project design, and engineering coordination and review.

In FY 2017, Reclamation, the New Mexico CAP Entity, and ISC executed another Memorandum of Understanding for preparation of an Environmental Impact Statement (EIS). Reclamation awarded a contract to prepare the EIS and continued outreach to federal agencies and others that are involved in the EIS process.

Power Operations

Historically, the combined generation of the Hoover, Davis, and Parker dam powerplants has been more than 6 billion kilowatt-hours (kWh) each year. Although drought has drastically lowered Lake Mead's water level and reduced Hoover Dam powerplant's rated capacity from 2,074 megawatts (MW) to about 1,600 MW (about a 23 percent reduction), the powerplant generated nearly 3.4 billion kWh of energy in FY 2017, and net generation from the three plants exceeded 4.8 billion kWh.

Hoover Dam

Hoover Dam provides benefits beyond its annual power generation. It operates as a peaking powerplant, responding at four-second intervals to meet peak electrical demands of the Western Area Power Administration (WAPA), which markets the electricity produced under long-term contracts. Its generation is combined with other sources to provide a consistent amount of electricity to meet changing demands. It also has a key role in restoring the Southwest's power grid should a major blackout occur.

Continuing the multi-year modernization program agreed to by the Region and Hoover Dam power contractors, five of the dam's 17 generating units were retrofitted with 'wide-head' turbines. The last of the five turbines was installed in FY 2017. These units operate more efficiently under the reduced water pressure that has resulted from Lake Mead's lower water levels.

Along with other modernization efforts, we have recovered 105 MW of capacity that would have otherwise been lost at these lower lake levels, an amount nearly equal to adding another generator to the facility. Reclamation and the power contractors continued to study the potential benefits and feasibility of further improvements.

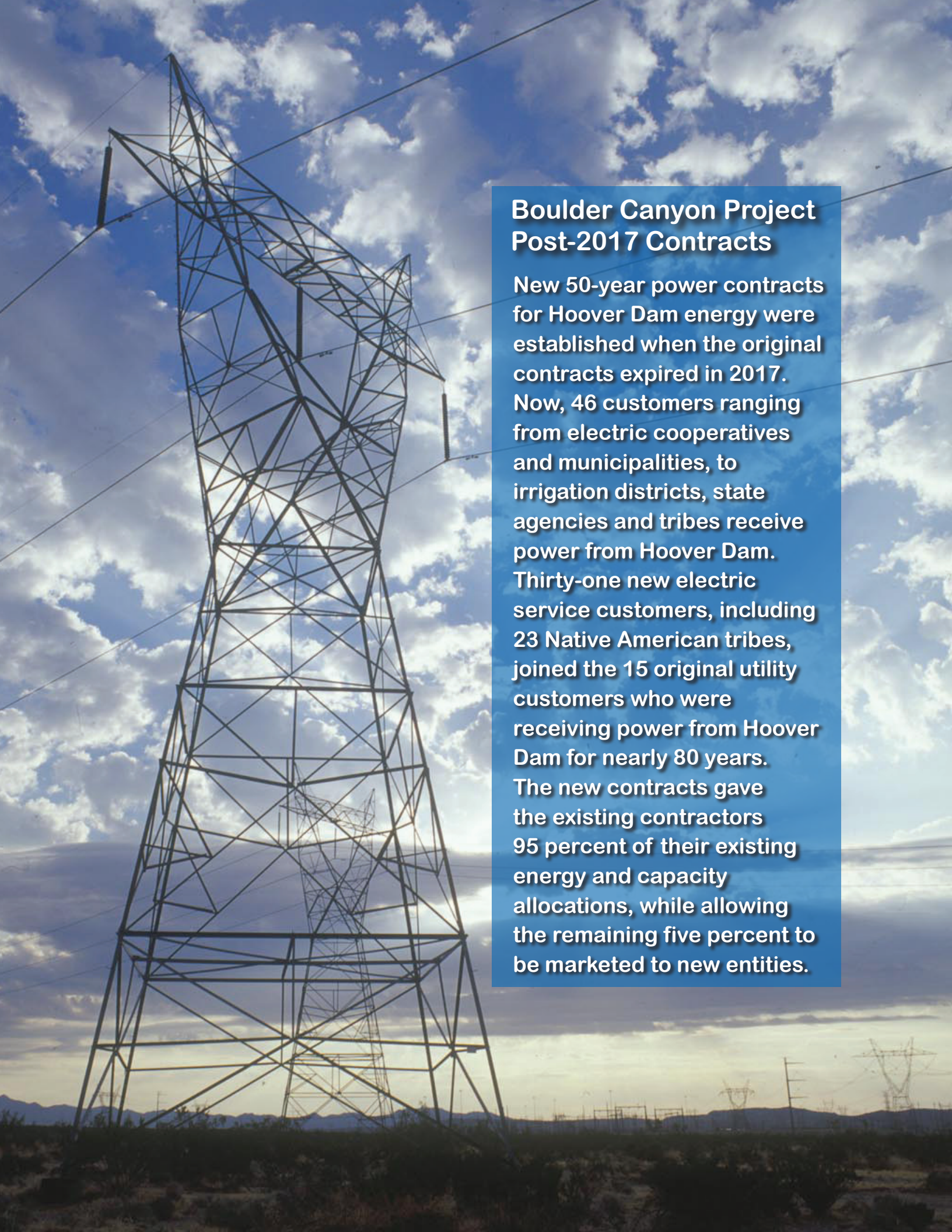
Boulder Canyon Project Post-2017 Contracts

In FY 2016, Reclamation and WAPA signed new 50-year term contracts with 46 Hoover power contractors, of which 23 are tribal entities. FY 2017 served as a transition year to allow the power contractors and Reclamation to prepare for the implementation of the new contracts on October 1, 2017 (FY 2018). These contracts provide for continued maintenance and operation of Hoover Dam to generate affordable and reliable hydropower for Indian tribes, municipalities, and power utilities in the Region. They build on long-standing practices to effectively manage Hoover Dam and provide flexibility to address changing conditions in the future.

Parker-Davis Project

Davis Dam, about two miles upstream of Laughlin, NV, and Parker Dam, 30 miles south of Lake Havasu City, AZ, were combined into the Parker-Davis Project in 1954. Operations and maintenance of these facilities are funded by the entities that receive the energy they generate.

The Davis Dam powerplant generated 1.06 billion kWh in FY 2017. During the year, we replaced the first of five transformers in a multi-year replacement program. In FY 2017, the Parker Dam powerplant generated nearly 434 million kWh. Work to replace the plant's generator cooling water system also continued.



Boulder Canyon Project Post-2017 Contracts

New 50-year power contracts for Hoover Dam energy were established when the original contracts expired in 2017. Now, 46 customers ranging from electric cooperatives and municipalities, to irrigation districts, state agencies and tribes receive power from Hoover Dam. Thirty-one new electric service customers, including 23 Native American tribes, joined the 15 original utility customers who were receiving power from Hoover Dam for nearly 80 years. The new contracts gave the existing contractors 95 percent of their existing energy and capacity allocations, while allowing the remaining five percent to be marketed to new entities.

Navajo Generating Station

The Navajo Generating Station (NGS), a 2,250 MW coal-fired generating plant in northern Arizona, is operated by the Salt River Project. Salt River Project holds 24.3 percent of the plant's output for the "use and benefit" of the United States. The U.S. is one of five participants that obtain power from NGS.

The Lower Colorado Region manages the federal interest in the plant. About two-thirds of the federal share of the plant's output can provide approximately 90 percent of the energy needed by the Central Arizona Project (CAP) to pump Colorado River water from Lake Havasu to users in central and southern Arizona. The remaining one-third of the federal share of the power is sold and the revenue is used, among other things, to help repay CAP construction costs and fund Indian water rights settlements in central Arizona in accordance with the Arizona Water Settlements Act.

Coal for NGS is supplied exclusively by the Kayenta Mine, located near the town of the same name in northern Arizona. The mine is on lands leased from the Navajo Nation and the Hopi Tribe, and both the powerplant and the mine provide significant economic benefits and job opportunities to these tribes.

In FY 2017, the non-federal utility owners of NGS voted to discontinue operations at the end of the current lease term in December 2019. The Interior Department and Reclamation initiated a facilitated stakeholder process to evaluate future NGS operations. Options currently being considered include: the conditions for NGS operations to the end of 2019 and potential decommissioning; potential owners and energy buyers to continue operations post-2019 with subsequent decommissioning; and strategies to minimize the socioeconomic impacts of a potential NGS closure.

Reclamation and the Navajo Nation also worked toward developing a transmission agreement allocating 500 MW of federal transmission rights (300 MW Western Transmission, 200 MW Southern Transmission). We also extended cooperative agreements to continue technical assistance to formulate clean energy development plans with the Hopi Tribe, Navajo Nation, and Gila River Indian Community. In collaboration with the National Renewable Energy Laboratory, a landmark study, *Navajo Generating Station & Federal Resource Planning Volume 1: Sectoral, Technical and Economic Trends,* was also published in FY 2017.

Furthering Renewable Energy

The Region continued to advance renewable energy development, integration, and production in FY 2017, collaborating with stakeholders to support renewable energy facility development through the Lease of Power Privilege program and technical assistance to Arizona tribes through funding agreements and an Interagency Agreement with the National Renewable Energy Laboratory.

We also continued to administer the Secretary of the Interior's Technical Work Group Agreement goals to earn over 27 million clean energy development credits, and over 11 million carbon emission reduction credits. These credits are largely projected to be earned through upgrades to our existing hydroelectric facilities.

Protecting and Enjoying Water-related Natural Resources

Managing and protecting natural and cultural resources is an important part of the Lower Colorado Region's mission. More than one million acres of land have been acquired for Reclamation projects in the Region. Evolving public demands and regulatory requirements mean these lands are now also needed for other purposes, such as local utility and renewable energy projects, communications facilities, electric transmission lines, non-hydro renewable energy production, recreation, and environmental activities.

The Region complies with National Environmental Policy Act (NEPA) in decision-making related to the use of Reclamation-managed lands and resources. Through NEPA and all other pertinent laws, regulations, Executive Orders, and policies, the Region ensures environmental and related social and economic effects of our actions are considered prior to implementation to maintain conditions under which humans and nature can co-exist.

In carrying out our mission and under the National Historic Preservation Act, we have consulted with more than 40 Native American tribes, numerous public and non-government organizations, and five state historic preservation offices to identify and protect cultural and historic resources on Reclamation lands.

Additionally, a Sustainability and Environmental Management System is in place to ensure sustainable practices are followed in energy efficiency, water conservation, waste reduction, and the conservation of biological, cultural and natural resources. This regional program continues to be used as a "best practice" model throughout the Bureau of Reclamation.

Hart Mine Marsh, a conservation area near Blythe, California, provides about 255 acres of marsh vegetation and open water for resident and migrating wildlife and birds. Prior to its reconstruction under the Lower Colorado River Multi-Species Conservation Program, the location featured poor quality water dominated by invasive salt cedar.

Lower Colorado River Multi-Species Conservation Program

The Lower Colorado Region administers and manages one of the largest environmental programs in the United States – the Lower Colorado River Multi-Species Conservation Program (LCR MSCP).

This 50-year, 50/50 cost-share partnership among federal and non-federal entities balances the use of lower Colorado River water resources with the conservation of native species and their habitats in compliance with the Endangered Species Act and associated state laws.

The program area extends more than 400 miles along the lower Colorado River, from Lake Mead's upper reaches to the Southerly International Boundary with Mexico.

The partnership is currently comprised of 57 entities, including state and federal agencies, water and power users, Native American tribes, conservation organizations, and other interested parties. The partners primarily participate through the program's Steering Committee to coordinate implementation of the program.

The Program's Habitat Conservation Plan (HCP) includes 13 general conservation measures and 65 species-specific conservation measures. Twenty-six species, including seven listed as threatened or endangered under the Endangered Species Act, are covered. Many of the conservation measures require ongoing management through the duration of the program. Since the LCR MSCP was implemented in 2005, five HCP conservation measures have been completed and 13 conservation areas established. Conservation areas contain a variety of habitat types that enable multiple species to benefit from a specific area. We established 225 acres of new riparian habitat in FY 2017, bringing the total acreage actively managed for native species to more than 5,700 since the program began. Based on program requirements at this stage, we are ahead of schedule.

The program also calls for the stocking of approximately 660,000 razorback suckers and 620,000 bonytail, two endangered native Colorado River fish, in the lower river. In FY 2017, more than 38,000 native fish were raised and/or stocked, bringing the totals to about 180,000 razorback suckers and 83,000 bonytail stocked since the program began in 2005. Approximately 122,000 razorback have been placed in Lake Mohave to maintain the genetic diversity of this important brood stock.

Other Environmental Programs

In Arizona, barriers are being constructed on small, remote streams to protect native fish. These barriers prevent non-native fish from moving upstream into areas where native fish populations historically thrived in their natural habitats. Upstream of these barriers, Reclamation is working with the Arizona Game and Fish Department to remove non-native fishes and repatriate the streams with native species. These management practices were implemented as conservation measures associated with the delivery of CAP water to the Gila River Basin of Arizona and New Mexico.

As of the end of FY 2017, eight of 12 fish barriers had been constructed on Gila River Basin streams. Currently, two barriers are being designed for locations on Eagle Creek and Redfield Canyon. Reclamation also completed Phase II of the expansion and modernization of Arizona Game and Fish Department's Aquatic Research and Conservation Center, a native fish hatchery

in Yavapai County that holds and propagates the spikedace and loach minnow, two of the rarest fishes of the Gila River basin.

In Nevada, we continued to participate in the partnership effort to protect the Las Vegas Wash. This "urban river" runs from the Las Vegas Valley to Lake Mead, carrying an average of more than 150 million gallons of water a day through a wetlands corridor on its way from the Valley to the lake.

A riparian corridor in an urban area, the Wash is an important ecological resource for southern Nevada, providing habitat for about 300 fish and wildlife species and more than 200 species of plants. The Lower Colorado Region is one of the 29 members of the Las Vegas Wash Coordination Committee, formed in 1998 to protect this valuable water resource.

In FY 2017, we continued to partner with the Southern Nevada Water Authority and Reclamation's Provo Area Office construction crew to support the ongoing maintenance of the weirs which control water flows in the Wash. We also helped stabilize the Wash's banks against further erosion, and monitored the effects of other protective and environmental work.

Maintaining the water control structures at Las Vegas Wash helps sustain the high quality of the water flowing into Lake Mead from this source.

Tackling Invasive Species

Several invasive species have migrated into the lower Colorado River Basin. The Lower Colorado Region is tackling the threats these invasive species pose to water, hydropower, the environment, and recreational activities.

Quagga Mussels

Quagga mussels were discovered in Lake Mead in 2007. The mussel can block water intake structures, pumps and delivery pipes; damage boats, docks, and other recreation facilities; and generally upset the ecological balance of water bodies.

In FY 2017, we continued to participate in Reclamation-wide and interagency task forces seeking to determine and understand the potential future impacts of quagga infestations on water-related infrastructure. These groups are identifying potential mitigation activities and costs, and implementing strategies to help keep mussels from spreading to other Western water bodies. They use National Invasive Species Council rapid response plans, which are designed to contain, and where possible, eradicate invasive populations. Because response efforts are localized, they are often led by state and local governments, but collaboration among local, state and federal entities, as well as the private sector, is critical to containing invasive species. For example, Regional representatives participated in a Value Planning exercise in the

Upper Colorado River Basin, sharing their extensive knowledge to provide cost effective solutions to mitigate quagga mussel impacts in Upper Basin projects.

In FY 2017, the Secretary of the Interior established a "Safeguarding the West" initiative to address the nationwide spread of invasive mussels. In response to the initiative, control and containment efforts in Lake Havasu and Lake Mead increased through expansion of existing interagency agreements.

We are also participating in several activities to evaluate and demonstrate effectiveness of various measures to mitigate the impacts of quaggas. For example, various types of coatings and underwater treatment technologies are being tested to determine their effectiveness in deterring mussels from attaching to submerged metal surfaces, including trashracks and intake pipes.

At Hoover Dam, pumps have been installed in the tailbay (the area immediately downstream of the dam where water exits after flowing through the generators) to provide water to the generator cooling systems. Tailbay water is preferable to forebay water (the water flowing from Lake Mead into the generators) for the cooling systems because tailbay water contains less quagga larvae which, upon reaching maturity, can obstruct and damage the generator systems.

In collaboration with experts from Reclamation's Technical Service Center, Regional staff also conducted various research efforts, including an evaluation of chemical and non-chemical control methodologies, for reducing the quagga's impacts on the lower Colorado River dams.

To prevent the spread of invasive quagga mussels, Reclamation's Dive Team participated in a dive-gear decontamination study at Lake Mead in June 2017. The Dive Team conducts underwater inspections of Reclamation facilities, and treats – using the practices of 'clean, drain and dry' – all exposed underwater dive gear on-site after the completion of dive activities, often in very isolated conditions.

The preferred treatment method is to install ultraviolet light systems on the generating unit cooling water systems to kill quagga larvae. The systems have been installed on all four Parker Dam generators, on one of the five generators at Davis Dam, and will be installed on all Hoover Dam generators by the end of FY 2019.

Other Invasive Species Efforts

In an effort to address the growing concerns about new invasive species potentially colonizing in the Lower Colorado Region, we established the Regional Integrated Pest Management Team. The focus of the Team is to revise plans and share information that will allow Reclamation and its partners and water users to respond collaboratively to new invasive species issues.

FY 2017 marked the 13th consecutive year we have partnered with Palo Verde Irrigation District, the U.S. Department of Agriculture, and the U.S. Fish and Wildlife Service in an effort to reduce and control the further spread of giant salvinia, an invasive weed discovered in the District's drainage system near Blythe, CA in 1999. The plant, which has migrated into the lower Colorado River, reduces oxygen content in water, eventually causing its quality to degrade to the point of stagnation. Giant salvinia can also block waterways, threatening both municipal and agricultural water delivery systems.

Reclamation staff assisted the Arizona Game and Fish Department with the physical removal of two species of floating aquatic plants: water hyacinth and water lettuce. No recurrence of these species has been documented to date, but both plants have the potential to significantly increase operations and maintenance costs of facilities that rely on Colorado River water and to intensify negative environmental effects. This emergency removal effort potentially saved significant future time and effort related to managing or controlling this aquatic invasive species.

Although the Lower Colorado Region does not have a specific program to address the invasive, non-native tamarisk plant, we participate in an interagency agreement that uses the National Park Service's (NPS) Exotic Plant Management Team (EPMT) to conduct invasive species removal, and plant native vegetation on lands throughout the Region.

Tamarisk plants, which have a significant presence along the lower Colorado River, can narrow and channelize streams and rivers, displace native vegetation, increase the risk of wildfire, and limit human and animal access to and use of waterways. We have removed tamarisk and other invasive plants, resulting in an increase in desirable habitat or native species, including some birds listed under the Endangered Species Act.

We also employ youth conservation corps crews to remove invasive plant species and restore project lands. During FY 2017, roughly 20 acres were treated for tamarisk and other weeds by Nevada Conservation Corps crews and the EPMT.

Desert Landscape Conservation Cooperative

The Desert Landscape Conservation Cooperative (LCC), jointly led by Reclamation and the U.S. Fish and Wildlife Service, is one of 22 LCCs across North America. The Desert LCC is a binational, regional partnership that includes more than 70 organizations working together to provide scientific and technical support, coordination, and communication to resource managers within large-scale ecosystems. The Desert LCC works to increase understanding of natural resource management that includes providing water for ecosystem health, municipal and industrial demands, energy and economic development, and recreation. Because communities are increasingly attuned to the

need for water to ensure healthy ecosystems and avoid environmental degradation, collaborative efforts such as the Desert LCC are bringing people together to prioritize issues and collectively work on solutions.

In the Lower Colorado Region, the Desert LCC has leveraged funding from multiple partners to develop and implement collaborative and cooperative pilot area Landscape Conservation Designs. The Desert LCC also has worked with partners to identify common goals that integrate societal and ecological values in the Mojave Desert and Madrean watersheds (that span Arizona, New Mexico, Sonora, and Chihuahua). Partners have prioritized stressors that are affecting the ability of natural and cultural resource managers to conserve water, grasslands, and biodiversity, and have combined existing data and efforts to make information more accessible to those who need it. For example, the Desert Flows Database combines data from 408 sources to provide a one-stop shop for managers seeking information on water flow needs and environmental responses.

In FY 2017, Reclamation awarded over $680,000 for seven applied science projects to support resource managers in addressing management issues that cross jurisdictions and political boundaries. In the Lower Colorado Region, these projects include training for resource management staff and improvements to the online Springs Database developed by Springs Stewardship Institute; developing tools for enhanced springs monitoring and restoration under drought conditions; and water quality modeling to assess how changes in elevation at Lake Mead affect drinking water treatment needs, and planning efforts for endangered fish, such as razorback suckers and humpback chub.

Salton Sea

The Bureau of Reclamation is an active participant in the State of California's process to coordinate stakeholders and draft a long-term management strategy for the Salton Sea. The Sea, located in Southern California, is the state's largest lake, known for its extremely high salt content – more than 30 percent saltier than ocean water. It is the modern incarnation of a prehistoric waterbody that filled and evaporated multiple times over thousands of years as the Colorado River shifted between emptying into the Gulf of California or diverting northwest into the Salton Trough (or Basin). In 1905, a flood caused the Colorado River to breach a private irrigation company's diversion structure, and the river once again flowed into the Salton Basin. After two years, the river was engineered back to its course, but it left behind a "new" Salton Sea.

In 1924, a Presidential Order designated approximately 90,000 acres of federal lands beneath the Sea a drainage reservoir. The Sea, which would have evaporated naturally, has been sustained by agricultural runoff from the Imperial and Coachella valleys and other sources over the last century. However, Salton Sea water levels are projected to steadily decline due to a combination of factors, including record drought conditions, water transfers, and on-farm irrigation efficiencies. Declining habitat conditions and windblown dust from the exposed lakebed are anticipated to increase when mitigation flows for agricultural to urban water transfers under the Quantification Settlement Agreement end in December 2017, accelerating the Sea's decline.

The Sea is a vital stop on the Pacific Flyway for millions of birds; over 400 bird species,

including several endangered species, have been identified at the Sea. The ecological benefits of the Sea for these birds are being severely compromised due to the Sea's increasing salinity, which decreases available food sources and habitat. Through the 1990s, some of the largest bird die-offs in U.S. history brought national attention to the Sea's declining conditions.

Reclamation has been working with the State and other partners to develop activities that protect air quality, reduce adverse impacts to habitat, and maintain a secure Colorado River water supply. The State's *Salton Sea Management Program Phase 1: 10-year Plan*, released in March 2017, includes the development of new bird and wildlife habitat, and dust suppression projects to reduce air quality impacts on communities in Imperial and Riverside Counties. Also in FY 2017, Reclamation received $350,000 to determine the suitability of local groundwater for dust control where fresh surface water is limited near the Sea.

Recreational Opportunities

Lower Colorado Region projects and lands provide substantial year-round recreational opportunities, generally through partnerships with state, local, public and private entities, and other federal agencies. The recreation industry along the lower Colorado River alone generates about $3 billion annually.

In FY 2016, a partnership with NPS, the City of Bullhead City, and Mohave County developed plans to build the Arizona Heritage Trail from Davis Dam to the Laughlin Bridge, which crosses the Colorado River just north of the cities of Laughlin, NV, and Bullhead City, AZ. Environmental and other compliance for this $5.9 million project, which is funded through the Southern Nevada Public Lands Management Act's sale of federal lands, was completed in FY 2017, and work to award a design contract began. Once the trail is constructed, the City of Bullhead City and Mohave County will patrol, operate, and maintain it.

Because the Salton Sea is so flat and shallow, a vertical foot of drop can expose thousands of feet of horizontal lakebed that dries quickly in the desert heat and sun, creating air quality problems. Windblown dust from the exposed lakebed is anticipated to increase as the Sea continues to shrink.

Reclamation trails -- on both land and water -- provide numerous opportunities to enjoy the outdoors. Pictured above are the Black Canyon River Trail on the Colorado River below Hoover Dam (top) and the River Mountains Loop Trail near Lake Mead (bottom).

We are also working with Arizona and Nevada Departments of Transportation to improve the pedestrian walkway on the Laughlin Bridge in FY 2019/2020. By connecting Davis Dam, the bridge, and the existing Colorado River Heritage Greenway Trails on the Nevada side of the river with the new Arizona Heritage Trail, a seven-mile loop trail will be established for hikers, bicyclists, and other users to enjoy both the waters and lands in this area.

The Colorado River Heritage Greenway Park and Trails near Laughlin and Bullhead City

is another developing recreational project. A two-mile long trail along the river links these communities to Lake Mead National Recreation Area. An additional 11 miles of trails associated with the project will offer equestrian and hiking opportunities to view the river and explore the desert landscape.

In our continued partnership with the City of Scottsdale, Reclamation lands in Arizona are annually the site of some of the City's largest public events including the Waste Management Phoenix Open, the Barrett-Jackson Scottsdale Collector Car Auction, and the Scottsdale Arabian Horse Show. In FY 2017, the PGA Tour's Waste Management Phoenix Open continued to be a popular event as it set new week-long (655,434) and Saturday (204,906) attendance records. The 2017 Barrett-Jackson Auction brought in approximately 350,000 people to WestWorld of Scottsdale.

Ongoing planning partnerships are developing trails along the Central Arizona Project canal in southern Arizona as part of the Sun Corridor Trail System that links several regional trails throughout Arizona and southern Nevada. As part of this effort, in FY 2017, we continued planning and design of two trail segments in Pinal and Pima counties.

We continued to provide outdoor recreation opportunities on Reclamation lands through our partnership with Maricopa County (AZ) at Lake Pleasant Regional Park. The newly renovated Discovery Center received the 2017 National Association of County Park and Recreation Officials Award for best Park and Recreation Facility - Class II category. The Center provides an opportunity for approximately 800,000 annual Park visitors to connect with nature and learn the history of Lake Pleasant and New Waddell Dam.

In FY 2017, Reclamation awarded a contract to install a new fishing pier at Contact Point on Lake Havasu as part of the Lake Havasu Fisheries Program. The project was funded by BLM and Reclamation, and Arizona State Parks is operating and maintaining the facility. Arizona State Parks, with Reclamation support, has also obtained Federal Highways Administration funding to construct a new road and trail system for Cattail Cove State Park on the shore of Lake Havasu.

We partnered with NPS and the Lower Colorado River Water Trail Alliance to begin planning the 76-mile Mohave Water Trail on the lower Colorado River. The trail would begin where the existing Black Canyon Water Trail ends south of Hoover Dam, traverse both sides of Lake Mohave to Davis Dam, and then continue two miles beyond Davis Dam to the Laughlin Bridge.

Reclamation led the development of the proposal to designate the Mohave Water Trail as a National Water Trail, with active support from the partners. The nomination was submitted in FY 2017, and includes a supplement that features descriptions of natural and cultural features of the Lake Mohave area, as well as historical highlights. This is Reclamation's second proposed water trail, and has support from Nevada State Parks, Arizona State Parks, Mohave County (AZ), Clark County (NV), the Nevada Department of Wildlife, and the National Park Service.

Supporting Native American Communities

There are 61 federally recognized tribes in the Lower Colorado Region, and we provide many of them financial and technical assistance to develop their water resources, facilitate self-sufficiency, and help fulfill Reclamation's trust responsibilities.

In FY 2017, the Region awarded contracts totaling $34.7 million under Public Law 93-638, the Indian Self-Determination and Education Assistance Act, to the Tohono O'odham Nation, the Gila River Indian Community, and the San Carlos Apache Tribe in Arizona. These contracts are related to planning and construction of tribal irrigation distribution systems that advance tribal sovereignty, self-governance, and self-determination efforts.

We provided $503,000 in technical assistance funding to aid seven tribes in California and Arizona with water management activities. The support ranged from helping the La Jolla Band of Luiseno Indians design an irrigation system to assisting the Colorado River Indian Tribes in restoring native habitat.

We also continued to participate in activities related to the implementation of Indian water rights settlements approved by Congress, and in active Indian water rights settlement negotiations. In addition, the Regional and Phoenix offices initiated and had a significant role in several formal tribal consultations with tribes on multiple issues, including the Navajo Nation and the Hopi Tribe, regarding future Navajo Generating Station options.

The 1,200+ acres of the Colorado River Indian Tribes' Ahakhav Tribal Preserve is centered on a reconstructed Colorado River backwater. The Preserve is being revegetated with native plants to provide habitat for endangered and threatened animals and birds native to the Lower Colorado River Basin.

Protecting Our Resources

Maintaining Safe Infrastructure

Lower Colorado Region engineers and other staff work to ensure the Region's dams and other facilities, many of which are over 50 years old, continue to operate safely and reliably. To reduce potential risk, we assess structural and performance reliability and implement modifications using state-of-the-art design and construction practices as necessary.

Inspecting dams for structural safety requires a number of skills and talents, as demonstrated by engineers using rope access techniques to examine the spillway gates of Horse Mesa Dam on the Salt River north of Phoenix, AZ.

Safety of Dams

The Safety of Dams program ensures our dams are safe and helps protect downstream communities through periodic reviews of each dam's stability and physical integrity.

Reclamation owns 15 dams in the Lower Colorado Region and two dikes – one at Brock Reservoir in Southern California and the other on Reach 11 of the Central Arizona Project. Each year, these structures are given a Facility Reliability Rating score of 'Good', 'Fair', or 'Poor'. This rating is based on points earned for a variety of Safety of Dam and operations and maintenance factors. During this FY, 14 of the dams received the highest rating of 'Good' and one received a rating of 'Fair', demonstrating the effectiveness of the safety review program.

The major Safety of Dams program components are Comprehensive Reviews (CRs), Periodic Facility Reviews (PFRs), and Annual Site Inspections. CRs, performed every eight years, include a detailed on-site physical examination and design, geology, hydrology, and seismology evaluations. PFRs, which are also performed every eight years, midway between CRs, involve a detailed on-site examination of the structures. Annual Site Inspections are conducted in those years in which there are no CRs or PFRs, and each dam undergoes a visual inspection at least quarterly to supplement the formal inspections.

For the one CR and two PFRs conducted in FY 2017, no major findings or recommendations were identified.

In addition to inspecting each dam's physical condition, Emergency Action Plans (EAPs) and emergency management exercises help maintain the safety of our dams. Although there has never been a dam failure in the Region, an EAP has been prepared for each dam that could cause economic damage or loss of human life if it failed, and these EAPs are updated annually.

Tabletop and functional exercises are performed for each dam every four and eight years, respectively. Tabletop exercises involve an informal discussion of actions to be taken in a potential emergency situation. Functional exercises practice a timed, emergency response to a simulated incident. In FY 2017, we successfully conducted two tabletop exercises.

Review of Operations and Maintenance

We also conduct a routine Review of Operations and Maintenance (RO&M) program to periodically review and examine other structures, including canal turnouts and check structures, bridges, siphons, and pipelines, to ensure they are operated consistent with Standing Operating Procedures, and to identify maintenance deficiencies or safety concerns.

Issues identified in the RO&M process are used to develop preventive maintenance programs, identify actions to improve operations, and create/update Standard Operating Procedures related to maintaining structural, electrical, and mechanical equipment. The examinations ensure each facility is safely operated and maintained to reduce in-service failures and unplanned outages and to protect the federal investment. Thirteen RO&M inspections were performed on Lower Colorado Region projects this FY, and no major deficiencies were found.

Urbanized canals are sections of canals that are located within urban areas that could potentially be flooded if a failure were to occur. Because of this risk, Reclamation inspects these canal sections more frequently. The Region inspected six urbanized canals in FY 2017; all were found to be in good condition.

The Region owns more than 200 bridges. Many of these are open only to government employees and operating districts, but are reviewed through the RO&M inspection process. Some of the bridges are open to the public; these are inspected every two years, as required by the Federal Highway Administration. In FY 2017, we inspected 30 bridges that are open to the public. No significant safety issues or concerns were found during these inspections.

Reclamation bridges are examined from all angles, by both land and water. In the photo above, divers inspect the underwater features of a bridge across the Gila Gravity Main Canal near Yuma, AZ.

Inaccessible Features and Inspections

Some areas at dams or other facilities are considered "inaccessible" because they cannot be accessed without special equipment.

Using drop cameras, remotely operated underwater vehicles, or rope access and dive techniques, the Region's teams of uniquely skilled individuals regularly inspect these areas to assess structural soundness and identify maintenance needs.

Our dive and rope access teams also support other federal agencies in inspecting inaccessible features, as this capability is somewhat unique in the federal government. In FY 2017, ten inaccessible features exams were performed.

A Safe Workplace

Our Region's safety commitment is, "Every employee, contractor, and visitor arrives at work safely, conducts business safely, and returns home safely every day."

To that end, we continue to promote ongoing workplace safety activities, such as enhancing safety awareness through Safety Fairs and Safety Days, annual watercraft safety events, engaging employees in local safety committees, and publishing safety articles.

We issued Regional guidance that reaffirms roles and responsibilities of every employee to ensure a safe work environment and empowers employees to "Stop Work" without fear of reprisal, and requires each facility to establish a local safety plan to better communicate safety goals, resources, and local procedures to employees.

Additionally, the Region-wide Safety Advisory Committee developed a safety guidance document for the analysis of job hazards. The Committee continues to foster a climate where safety and productivity are equally important objectives for employees in accomplishing their work, and through improved communication, safety issues common across the Region are being identified and resolved.

Safe practices are highlighted in all Reclamation activities, including the annual C.A.S.T. for Kids event where participants are all fitted for life jackets before a day of fishing at Lake Mead.

Security and Law Enforcement

A primary focus of the Region is to ensure its employees, contractors, visitors, and facilities are safe and secure. Security personnel, and a BLM Special Agent and BLM Ranger assigned to the Region, work closely with local law enforcement, including our partners at the National Park Service (NPS) and other Reclamation and non-Reclamation entities, to assess security needs and develop or improve threat detection, identification, deterrence, and response.

Vessel barriers, like the one seen here at Canyon Lake behind Mormon Flat Dam on the Salt River northeast of Phoenix, AZ, are one of many physical security components used to keep Reclamation facilities safe and secure.

The BLM Special Agent manages investigative and intelligence-related activity and represents Reclamation at meetings and exercises of the Las Vegas Joint Terrorism Task Force, the Southern Nevada Counter-Terrorism Center, the Arizona Counter-Terrorism Information Center, and other regional law enforcement agencies. The uniformed BLM Ranger addresses public conduct and resource-related issues on Reclamation lands throughout the Region.

In FY 2017, six Periodic Security Reviews at Lower Colorado Region dams were conducted along with one Comprehensive Security Review at Roosevelt Dam, a Major Mission Critical infrastructure facility in central Arizona. Along with our partners, the Salt River Project and the U.S. Navy, Regional security staff continued to implement an innovative security solution for the Region's thin arch dams.

The security staff also conducted a comprehensive evaluation of the security and safety of pedestrians along the roadway atop Hoover Dam. Each year, millions of people visit this historic and world-renowned national icon, and to augment the safety features at the site, a temporary barrier system was installed to reduce the likelihood of pedestrian and moving vehicle interactions. This temporary pedestrian protection barrier, as well as the permanent solution that is being designed and installed, is a marked enhancement to security and safety at the site.

The Human Element

Reclamation's Pathways Program allows potential new employees to become familiar with natural resource management careers through shadowing opportunities with agency professionals.

A dedicated, diverse workforce accomplishes the Lower Colorado Region's programs. Each employee contributes to our program achievements, whether they are based in Nevada, Arizona, or California. Every day, at every level, the Region relies on them and their commitment to public service to reach our goals and objectives.

We employ many strategies to recruit, develop, and retain a skilled and diverse workforce. Our professional Equal Employment Opportunity (EEO) and Human Resources staff conduct various activities to recruit and train people who can perform the work we do now and will do in the future. These outreach activities include participating in job fairs, visiting college campuses, and other recruitment efforts. In FY 2017, we participated in 41 career fairs that reached nearly 2,300 potential job applicants.

We also train our employees so they can maintain skills and develop new proficiencies needed to successfully accomplish our programs now and into the future. In FY 2017, we hosted a Leadership Development Program (LDP) for career employees at all grade levels to help them cultivate the skills needed to attain more challenging positions with greater responsibilities, including top leadership positions. This program allows for on-the-job development to increase participants' confidence and an opportunity to demonstrate a personal commitment to real change for themselves and the agency. In FY 2017, 60 Regional employees successfully completed the LDP.

Reaching New Generations

We know it is important to integrate and engage the next generation into our workforce. Key FY 2017 activities included participation in the Las Vegas Science & Technology Expo, which reached an estimated 9,000 students from throughout the U.S. over a one-week period, and support of the Southern Nevada Regional Student Model Bridge Building Contest, in which more than 800 students from 65 schools participated. We also provided Hoover Dam tours for nearly 8,900 students, sponsored the annual Nevada Regional Science Bowl, and provided expert speakers at local schools, from elementary to college level, to present information about us and our work, and to share their knowledge about careers and specific jobs that support Reclamation programs.

We also created opportunities for young people to experience potential federal careers. During FY 2017, the Region employed 52 students.

In addition to educational and outreach activities, we encourage new generations to connect with the natural resources we manage.

In FY 2017, we held our annual "Catch A Special Thrill" (C.A.S.T.) event at Lake Mead. The C.A.S.T. for Kids Foundation, in which Reclamation has been a partner since 1992, joins volunteers and individuals with special needs for a day of fishing, allowing children and their families to enjoy a day of outdoor experiences. The event attracted 28 participants and several family members and caretakers, and was supported by 78 volunteers, including 18 boat captains. Lake Mead Marina provided 12 pontoon boats and the venue for the event, and many entities, including the NPS, U.S. Fish and Wildlife Service, Clark County, Nevada Department of Wildlife, Outside Las Vegas Foundation, and Reclamation, contributed activities or informational exhibits.

U.S. Fish & Wildlife Service mascot Puddles the Blue Goose brings smiles to volunteers at the Lake Mead C.A.S.T. for Kids event.

Additionally, our Phoenix Area Office conducted its 18th C.A.S.T. for Kids event at Lake Pleasant, with 43 special needs children and their families in attendance. Forty-four boat captains volunteered their boats and time for this event. With the help of these captains and more than 100 volunteers from Reclamation, the CAP, Bass Fishing clubs, Maricopa County Parks and Recreation Department, and Arizona Game and Fish Department, the participants were treated to an outdoor adventure that many experienced for the first time.

Regional staff also participated in other outdoor-related educational activities, including Nevada History Field Trips, Las Vegas Science Festival, Arizona Game and Fish Outdoor Expo, Get Outdoors Nevada Day, National Trails Day, Bill Williams River National Wildlife Refuge Day, Clark County Wetlands BioBlitz, Clark County Wetlands International Bird Migratory Day, Laughlin Wings and Wildlife, and several Public Lands Day events.

With more than 160 canals in the Yuma, AZ, area, our Yuma Area Office hosted 'Otto Otter', Reclamation's mascot, at several events to educate children and their parents about canal safety. These included the Wellton Tractor Rodeo, as well as the Yuma Getting Involved in Neighborhoods (G.A.I.N.) and the City of San Luis Safety Days, which were both open to kindergarten through 8th grade students.

The Southern California Area Office also continued an ongoing collaboration with the San Diego River Park

Reliable technical support is provided in both office (left) and field (above) settings, ensuring power and water are reliably delivered from Reclamation facilities.

Foundation on nine river cleanups. As part of these activities, 927 volunteers, including a large number of youth and school groups and military services members, removed 68,548 pounds (nearly 35 tons!) of trash along the San Diego River and recycled more than 500 pounds of discarded e-waste.

Program/Project Support

Without the employees and offices that support our programs, projects, and activities, we could not successfully accomplish our mission.

For example, the Region's Information Technology (IT) employees continually enhance and improve our IT systems while ensuring those systems are secure. They also respond to a multitude of daily service requests, which can include software and hardware problem fixes, software installations, hardware installations and moves, webinar setups, and telecommunications system maintenance. During FY 2017, the IT Helpdesk closed 5,044 trouble tickets, or approximately 20 per workday.

Another vital activity essential to our mission is property management. The Region is responsible for a number of assets including accountable personal property (equipment worth $5,000 or more, or considered sensitive and at risk of theft, such as IT and electronic equipment) and real property (buildings and structures).

During FY 2017, Property Management oversaw the acquisition, tracking, and disposition of 3,932 accountable equipment items valued at $34.5 million, including 239 vehicles. Real property accounted for 226 buildings, totaling 1.1 million square feet with a total replacement value of nearly $188 million; and 385 structures with a total replacement value of more than $22 billion.

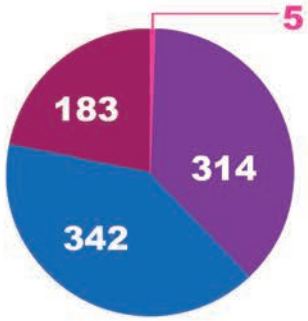
WORKFORCE SNAPSHOT

844
Total Employees

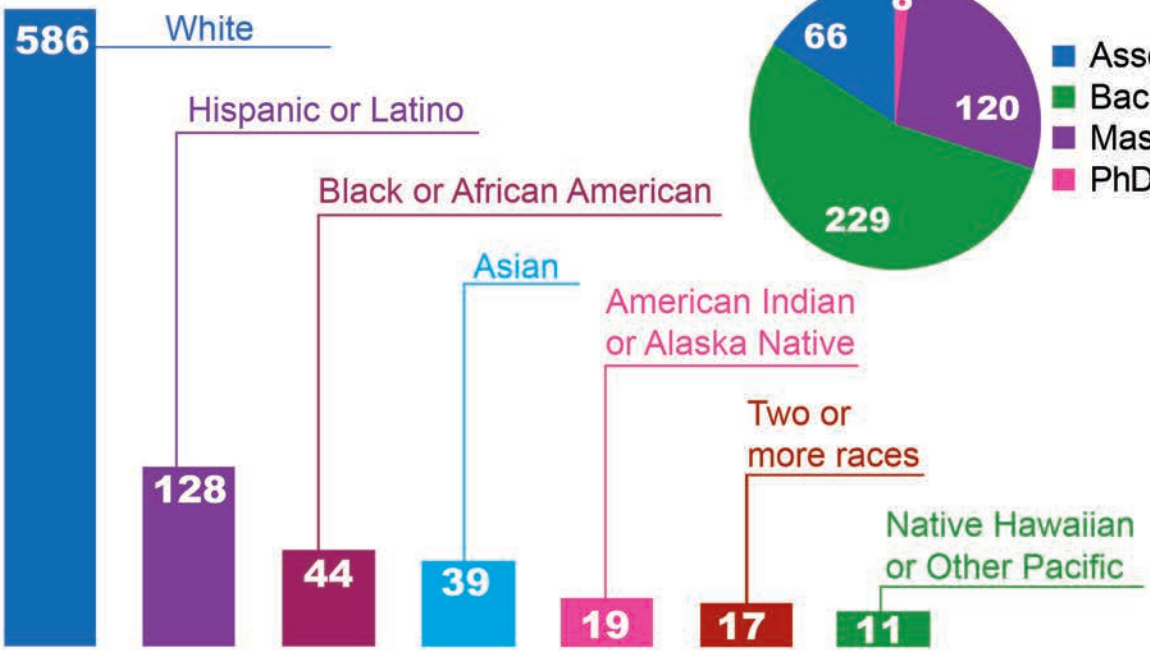
558 male — 66%

286 female — 34%

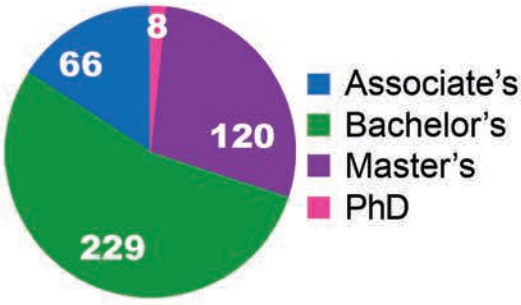
GENERATIONS (AGE GROUPS)



DIVERSITY



EDUCATION



as of September 30, 2017

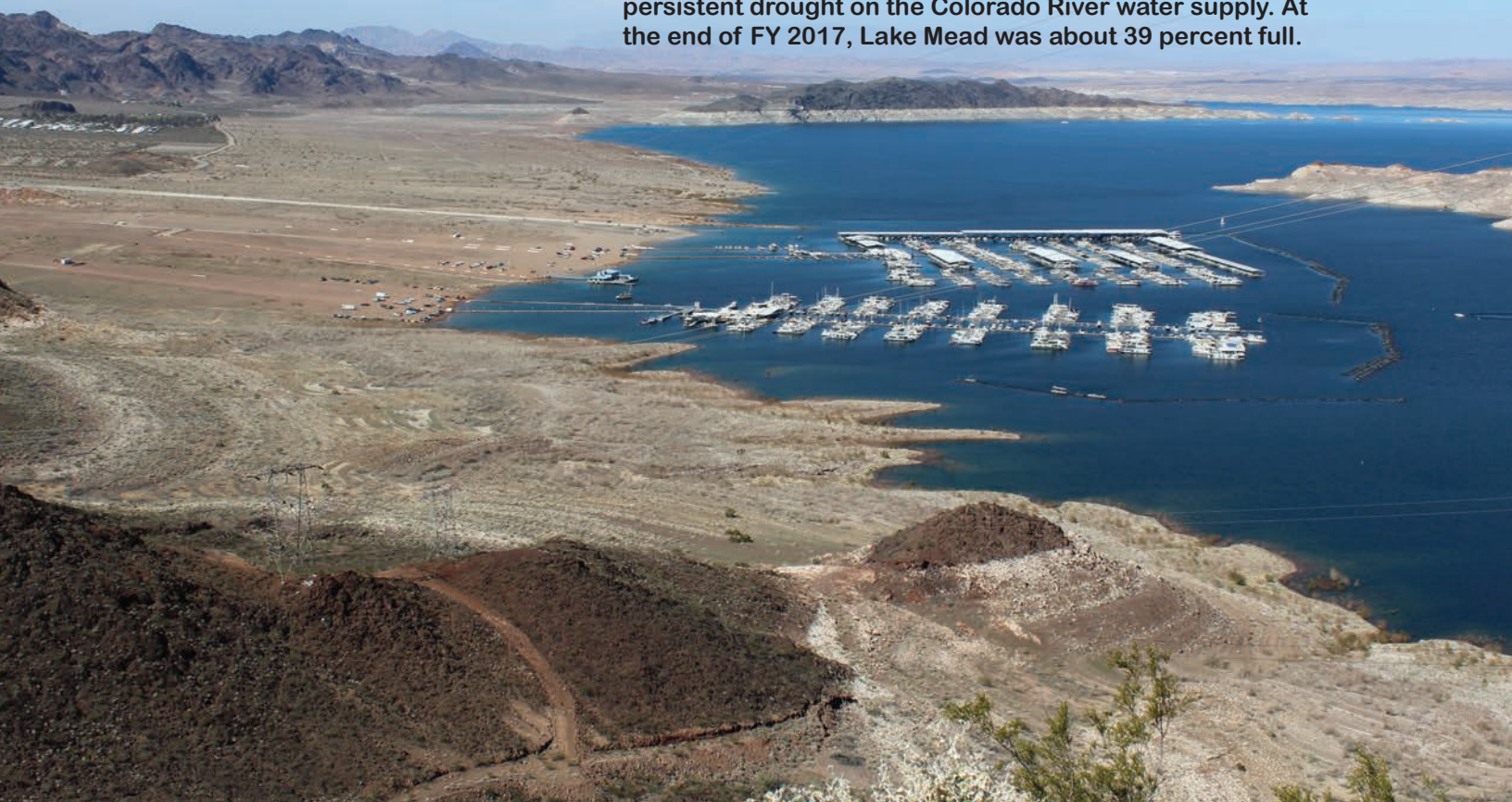
What's Ahead

During FY 2017, we continued to focus on two critical initiatives regarding management of the lower Colorado River – planning for the potential of enduring drought and enhancing our binational cooperation with Mexico. Although some progress was made toward negotiating and implementing a consensus-based "Lower Basin Drought Contingency Plan", such a plan is still not in place. This will be one of our highest priorities in FY 2018. In September 2017, a new agreement with Mexico was signed, providing an additional nine years of operational certainty (through 2026) for water users on both sides of the border. Implementation of this cooperative agreement will be a major focus for us in 2018 and beyond.

Addressing Drought – Taking Action to Protect Lake Mead

The Colorado River Basin continues to experience its worst drought in recorded history. The period from 2000 through 2017 marks the driest 18-year period in more than 100 years of record-keeping on the Colorado River. In the first five years of this present drought, storage in the Colorado River system reservoirs declined approximately 30 MAF, from nearly full to about half of capacity; the system is still about half-full today.

Through this period of persistent drought, water conservation and storage activities implemented since 2007 have added approximately 1.6 MAF to Lake Mead storage, bolstering its elevation by nearly 20 feet. Approximately 700,000 AF of water was stored and conserved in Calendar Year 2017 alone, equivalent to 8.5 feet in Lake Mead elevation. The additional water stored and conserved in Lake Mead, combined with additional releases from Lake Powell, has kept the Lower Basin out of a shortage condition since 2015.



The increasing width of the shoreline of Lake Mead's Boulder Basin demonstrates the impact of years of persistent drought on the Colorado River water supply. At the end of FY 2017, Lake Mead was about 39 percent full.

While these water conservation and storage activities have been successful, Lake Powell and Lake Mead remain at risk of declining to critically low elevations under sustained and severe drought. The Interior Department and Reclamation continued to work collaboratively with our partners to develop consensus-based "drought contingency plans" in both the Upper and Lower Basins until new operational guidelines can be developed by 2026 to ensure long-term sustainable operation of the Colorado River System. The Lower Basin's proposed drought contingency plan is comprised of proactive water conservation and system efficiency improvement actions to be taken by water users in Arizona, California, and Nevada, and by Reclamation. These actions will result in additional water in Lake Mead and a significant reduction in the risk of reaching critically low elevations.

Below are summaries of key programs that are already helping to conserve water in Lake Mead.

Lower Basin Drought MOU

On December 10, 2014, Reclamation signed a Memorandum of Understanding (MOU) for Lower Basin Pilot Drought Response Actions with Arizona, California, and Nevada, Southern Nevada Water Authority (SNWA), The Metropolitan Water District of Southern California (MWD), and Central Arizona Water Conservation District (CAWCD). Under this MOU, the parties agreed to use "best efforts" to implement further voluntary measures designed to add to storage in Lake Mead. The MOU established goals to create 740,000 acre-feet of protection volume for Lake Mead by the end of 2017, and between 1.5 and 3.0 MAF in total by the end of 2019. Preliminary estimates indicate that approximately 900,000 acre-feet of protection volume was created by the end of calendar year 2017, exceeding the goal of 740,000 acre-feet.

System Conservation

In FY 2015, Reclamation initiated the Pilot System Conservation Program (PSCP), voluntary compensated efforts to conserve water in Lake Powell and Lake Mead for the benefit of all Colorado River system users, with partners Denver Water, CAWCD, MWD, and SNWA. Participants in the PSCP represent all seven Basin States and are comprised of agricultural, municipal, and tribal entities. The PSCP continued in FY 2017; to date, $18.6 million (with approximately 46 percent funded by Reclamation and 54 percent from the non-federal partners) has been allocated for Lower Basin projects that will ultimately conserve approximately 117,000 AF, or about 1.5 feet of Lake Mead elevation.

In addition to the PSCP activities, additional system water was created in 2017 when two agreements were entered into with the Gila River Indian Community (GRIC) to conserve 80,000 acre-feet of Central Arizona Project water in Lake Mead. In January 2017, Reclamation entered into an agreement with GRIC to fund 40,000 acre-feet of conservation. In July 2017, new partners (the City of Phoenix, the Walton Family Foundation, and the Arizona Department of Water Resources) and Reclamation entered into a second agreement with GRIC to fund an additional 40,000 acre-feet of conservation.

242 Wellfield Expansion

Additionally, the Region continued excavation for the 242 Wellfield Expansion Project, which will convey groundwater pumped from the 242 Wellfield on the U.S.-Mexico border into the Colorado River near Yuma, AZ.

The 242 wellfield consists of 21 groundwater wells within a strip of land along the U.S.-Mexico border. Its name originated in Minute 242 of the 1944 Water Treaty which limits U.S. and Mexico pumping within this zone to no more than 160,000 AF of water annually by each country. The 242 Wellfield Expansion Project will pump approximately 25,000 AF of low salinity drainage water from the wellfield and deliver it to the Colorado River, reducing the amount of water that must be released from Lake Mead to meet water delivery commitments. The project consists of a 13-mile long, 48-inch diameter pipeline connecting the wells in the 242 wellfield to the Yuma Mesa Conduit that drains into the river.

The Gila River Indian Community south of Phoenix has the largest entitlement of Colorado River water delivered through the Central Arizona Project. The tribe's irrigation system is presently under construction, and when complete, is expected to deliver water to more than 146,000 acres.

Binational Cooperation

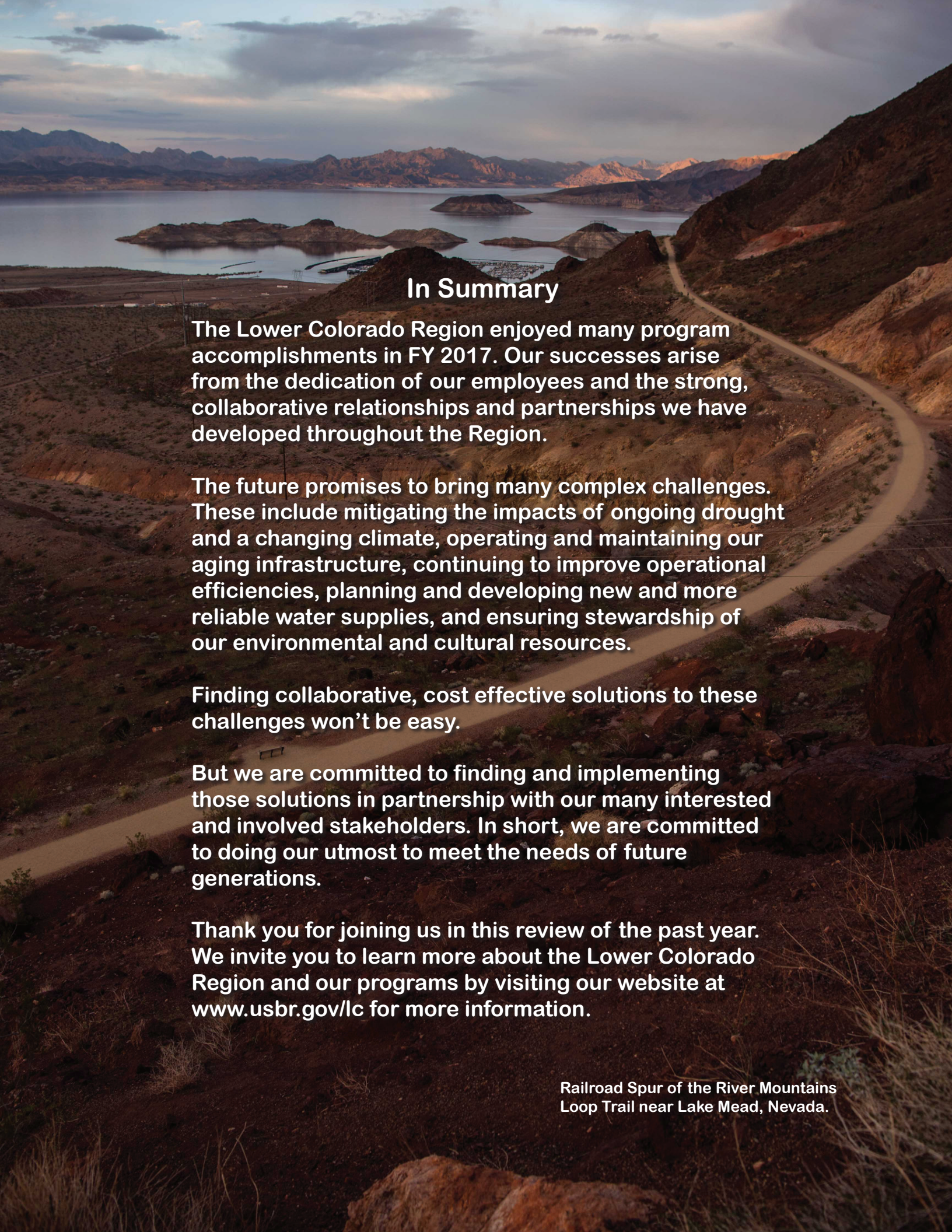
The Colorado River is shared between the United States and Mexico pursuant to the 1944 Water Treaty that addresses both operational issues and allocation of the river between the two countries. The Treaty also provides a mechanism for adoption of binational agreements to address issues that arise during Treaty implementation. These implementing agreements are known as "Minutes" to the 1944 Water Treaty, and are negotiated under the authority and direction of the U.S. State Department and the U.S. Section of the International Boundary and Water Commission (IBWC) and their counterparts in Mexico.

Through a binational cooperative process that began in 2007, Reclamation has been working in partnership with the seven Colorado River Basin States, IBWC, and Mexico to develop binational approaches to address water conservation, responses to historic drought, and environmental enhancement along the Colorado River in the border region. In September 2017, after more than two years of negotiations, the U.S. and Mexico signed "Minute 323" to the

1944 Water Treaty. Adopted to be in force through 2026, it provides an additional nine years of operational certainty for both U.S. and Mexico water users by extending proactive, cooperative reservoir management strategies previously agreed to in 2012 through "Minute 319" (which was scheduled to expire on December 31, 2017). Importantly, Minute 323 includes a new concept of a "Water Scarcity Contingency Plan" whereby additional water savings will be implemented by Mexico when Lake Mead reaches certain low elevation reservoir conditions. This innovative program is conditioned on – and will only take effect upon – the execution of a Lower Basin Drought Contingency Plan in the U.S., which is under active negotiation.

In FY 2017, Reclamation continued to implement the provisions of Minute 319, assisted in completion of the negotiation and finalization of Minute 323, and began work to implement Minute 323. These provisions include the sharing of hydrologic and operational information with Mexico, storing of deferred Mexican water in U.S. reservoirs, and further implementation of environmental enhancement projects through an ongoing binational work group process. These topic-specific, multi-stakeholder groups (that include federal, state, local and NGO participants from both nations) will continue in 2018 and during the remaining term of the Minute 323.

Signed on September 21, 2017 by International Boundary and Water Commission Mexican Commissioner Roberto Salmon and U.S. Commissioner Edward Drusina, Minute 323 demonstrates the collaboration and cooperation of all Colorado River water users on both sides of the border.



In Summary

The Lower Colorado Region enjoyed many program accomplishments in FY 2017. Our successes arise from the dedication of our employees and the strong, collaborative relationships and partnerships we have developed throughout the Region.

The future promises to bring many complex challenges. These include mitigating the impacts of ongoing drought and a changing climate, operating and maintaining our aging infrastructure, continuing to improve operational efficiencies, planning and developing new and more reliable water supplies, and ensuring stewardship of our environmental and cultural resources.

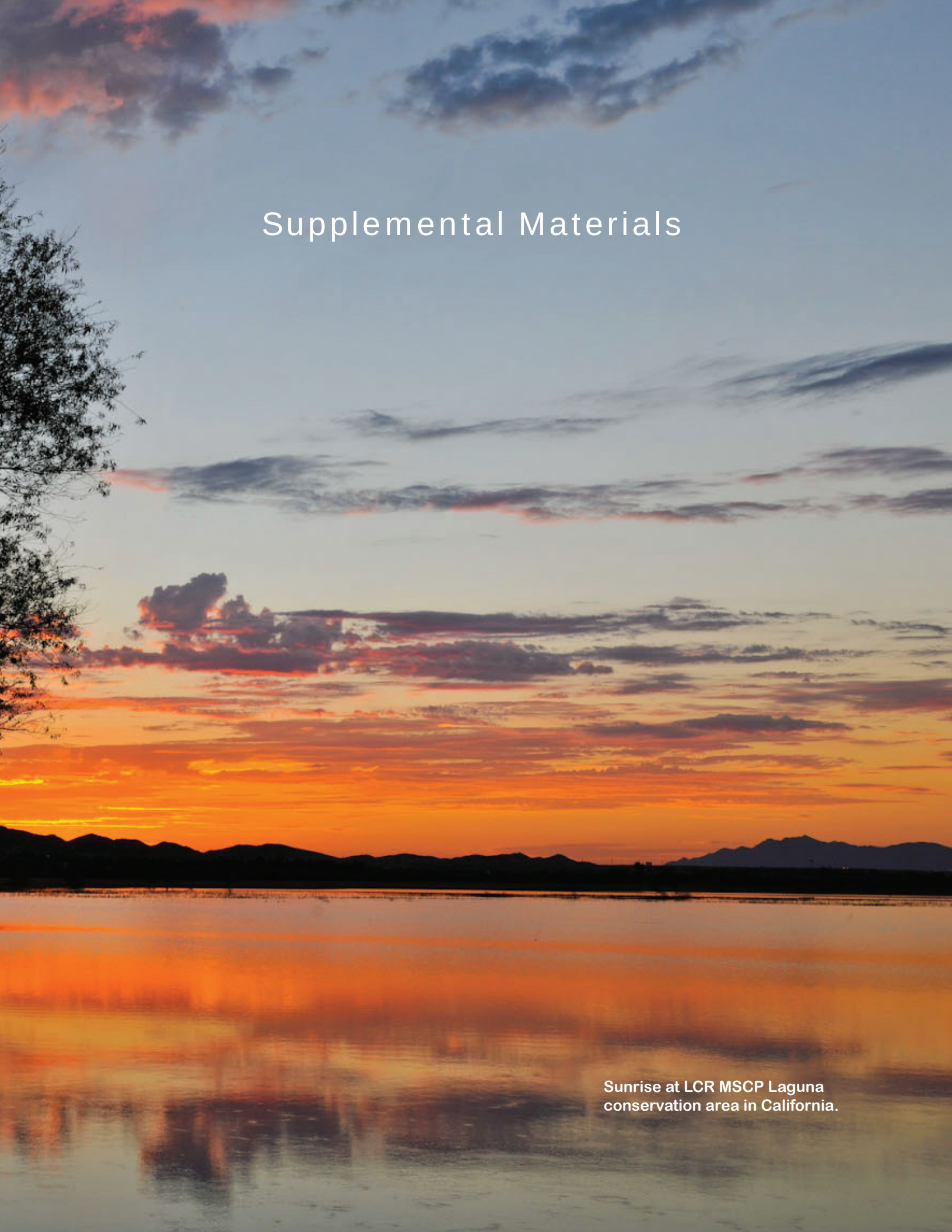
Finding collaborative, cost effective solutions to these challenges won't be easy.

But we are committed to finding and implementing those solutions in partnership with our many interested and involved stakeholders. In short, we are committed to doing our utmost to meet the needs of future generations.

Thank you for joining us in this review of the past year. We invite you to learn more about the Lower Colorado Region and our programs by visiting our website at www.usbr.gov/lc for more information.

Railroad Spur of the River Mountains Loop Trail near Lake Mead, Nevada.

Supplemental Materials



Sunrise at LCR MSCP Laguna conservation area in California.

Label	Southern California Tribe Name
1	Agua Caliente
2	Augustine
3	Cabazon
4	Cahuilla
5	Campo
6	Capitan Grande
7	Ewiiaapaayp
8	Iipay
9	Inaja
10	Jamul
11	La Jolla
12	La Posta
13	Los Coyotes
14	Manzanita
15	Mesa Grande
16	Morongo
17	Pala
18	Pauma
19	Pechanga
20	Ramona
21	Rincon
22	San Manuel
23	San Pasqual
24	Santa Rosa
25	Soboba
26	Sycuan
27	Torres-Martinez
28	Twenty-Nine Palms

This map is intended for general informational purposes only. It is not intended to be used for description or authoritative definition of location or legal boundary. Prepared by the Bureau of Reclamation, Lower Colorado Region, 2017 update.

Lower Colorado Region

Offices	Location
Boulder Canyon Operations Office	Boulder City, NV
Lower Colorado Dams Office	Hoover Dam
Lower Colorado Region Headquarters	Boulder City, NV
Phoenix Area Office	Glendale, AZ
Southern California Area Office	Temecula, CA
Yuma Area Office	Yuma, AZ

Legend

- Dam without powerplant
- Dam with powerplant
- Other powerplants
- Reclamation Office
- Canal or Aqueduct
- Indian Reservation
- Water Users Service Area
- Irrigation District
- Lower Colorado Area
- Phoenix Area
- Southern California Area
- Yuma Area
- MODE Main Outlet Drain Extension

0 50 100 Miles

Bureau of Reclamation Regions

The Secretary of the Interior is the "water master" for the last 688 miles of the Colorado River in the United States. The Lower Colorado Region implements many of the water master functions on behalf of the Secretary. In a normal year, the Region delivers 7.5 million acre-feet of Colorado River water to Arizona, California, and Nevada. In addition,1.5 million acre-feet of water is delivered annually to Mexico in accordance with the 1944 Water Treaty. This water is used to irrigate about 2.5 million acres of land in the U.S. and Mexico, and helps meet the needs of more than 25 million people, including Native American tribes and communities. Hoover, Davis, and Parker hydroelectric powerplants annually generate more than 6 billion kilowatt-hours of electricity, enough energy to meet the needs of 2 million people. These dams also provide significant flood control and recreational benefits.

Lower Colorado Region Employees

Angela Adams • Bruce Adams • Pamela Adams • Elissa Aguilar • Genevieve Allan • Megan Allen • Bonnie Allison • Aaron Alton
Jesus Alvarado • Cort Ancman • Mark Anders • Jeffrey Anderson • Laken Anderson • Lisa Anderson • Tracy Anderson • Tara Andre • Kevin Andrews
Angela Aniasco • John Arcenas • David Arend • Michael Arend • Randolph Argote • William Arndt • Christopher Arnold
Jessica Asbill-Case • Andrew Ashby • Douglas Ashford • Patrick Atkinson • Eugene Authery • Elizabeth Bailey • Brian Baker • Jason Baker • Micheal Baker
Sarah Baker • Scott Baker • Derek Ball • Dianne Bangle • Michael Banting • Aaron Baptista • Antonio Baquera • Todd Baribault
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Bryan Bedoya • Dustin Bedoya • Sheldon Bedoya • Joseph Beebe • Bradley Belford • Alexander Belous • Fernando Beneduce • Kelly Bergin
Michael Bernardo • Alexander Berry • Andrew Berryman • Justin Bicknell • Elena Big-Payte • Joseph Billerbeck • Donald Black • Kevin Black
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Rodney Chelius • Wade Chenoweth • Cynthia Choa • Thad Christensen • Alan Clabeaux • Robert Clark • Travis Clark • Olivier Clavel
Howard Clayton • Nicholas Clements • Leslie Cleveland • Nicholas Coe • Daniel Colang • Dana Coleman • Eric Collins • Kevin Collins
Kelly Conner • Manuel Contreras • Brock Cook • Mark Cook • Myra Cordero • Henry Corretjer • Cecilia Cortazar • Jay Corum
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Laura Fernandez • Michael Findley • Andrea Finnegan • Robert Firasek • John Fitzsimmons • John Fleming • Cynthia Flores • Roy Flores
Joseph Ford • Ernest Foster • Nicole Fox • Michael Franklin • Karla Fritchman • Terrance Fulp • Owen Fulsome • Jason Fyffe • Meagan Fyffe
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Kathryn Gegen • Christa Gerber • Maria Germain • David Gifford • Jeremy Giralde • Cody Goering • Hazel Gomez • Kattie Gomez • Susana Gomez
Joseph Gonzales • Peter Gonzales • George Gonzalez • Cha-On Gordon • George Gorum • Leslie Goudie • Jacklynn Gould
Danielle Grabish • Joseph Grabish • Joseph Graef • Dominic Graziani • Kelli Greene • Jeffrey Griffith • Suzanne Grinsted • Candace Grof • Raedell Grosvenor
Chas Gruber • Joanie Guerrero • Michael Guerrissi • Keith Guidry • Andre Gulley • David Gunderson • David Gundlach • Daniel Gurrola
Angel Gutierrez • Reymundo Gutierrez • Juan Guzman • Aaron Haack • Shawn Haaksma • Connie Hack • Michael Hack • Harry Hairston
Jane Hale • Alexis Hall • Geoffrey Hall • Matthew Hall • Randall Hall • Eve Halper • John Hamamoto • Christopher Hamilton
Shanon Handley • Storm Hanks • Keith Hannon • Christopher Hanson • Peter Harbauer • Daron Hargadine • James Harris • Mark Harris • Cristina Hayden
Charles Hays • Sean Heath • Nicholas Heatwole • Douglas Hendrix • Riva Heninger • Laura Henning • Roy Henry • Jeffrey Henshaw
Jessica Herndon-Ladewig • Dalenna Hessling • Charles Hibbard • Athena Higgins • Elizabeth Higgins • John Higgins • Julian Higuera
Hal Hill • Holly Hill • Jeffrey Hill • Denise Hinds • Daigo Hirayama • William Hodges • Matthew Hoholik • Brian Hollandsworth • Michael Hollins
Teresa Holm • Michael Holmes • Nanette Holmes • Jason Holt • Jesse Holt • Jordan Holt • Lee Holt • Robert Holt • Christopher Hoolihan
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Layne Huber • Christopher Hutchinson • Steven Hvinden • Michael Igoe • Michael Ireland • Kenneth Isakson • Joseph Israel • Michael Jackson
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Bridget Johanning • Angelina Johnson • Brittany Johnson • David Johnson • Destiny Johnson • Genevieve Johnson • Robert Johnson
Devin Jones • Jessie Jones • John Jorgenson • Christopher Joyce • Joseph Kahl • James Kangas • Geoffrey Keller
Timothy Kelly • Cindy Kenny • David Kent • Scott Kerns • Lesli Kirsch-Burke • Brian Kitt • Kathleen Kitt • Ronald Knight • James Knowles • Jeffrey Koerschen
Edward Kromer • Gary Krzisnik • Donna Krzystek • Ricky Labistre • John Ladd • Matthew Lafave • John Lakovich • Vincent Lammers
Jeffrey Lantow • Felix Lanz • Valerie Leclerc • Raymond Leday • Jong Lee • Jose Lee • Nathan Lehman • Joseph Lejeune • Michael Lendway

as of September 30, 2017

Nathan Lenon • John Leslie • Susan Levin • Cecil Levy • Desi Lewis • Ingrid Lewis • Eric Liming • Kevin Lister • Elijah Long • Eric Loomis Tracie Lopata • Chris Lopez • Ezequiel Lopez • Iris Lopez • Lonnie Lopez • Marteen Lopez • Brendan Ludington • Shannon Lynch Shawn Lynch • Jeffrey Lynn • Deborah Lyons White • Frank Macaluso • Jacob Magaw • Jason Magdaleno • Jordan Magdaleno Toyya Mahoney • Karen Majewski • Keshaw Mallick • Olivia Manary • Savanna Manning • Kevin Margetts • Jeffrey Margo • Kimberly Marinkovic Lawrence Marquez • Thomas Marsh • Bill Martin • William Martin • Joe Martinez • Ruben Martinez • Michael Massey • Doreen Masterson Kyle Matney • Kristen Matthews • Mark Mattozzi • Paul Matuska • Gordon Matzinger • Marc Maynard • Brittany McAleese Bruce McBride • Donald McBride • Tracy McCabe • Victor McCall • Charles McCaughey • Jennifer McCloskey • Marc McClung • Jeffrey McCormick Kevin McDowell • Lee McDowell • John McElrath • Richard McEntee • Benjamin McKevitt • Melissa 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Stephenson • Paula Stetka • Kathleen Stewart • Larry Stewart • Richard Stewart • Thomas Stewart • William Stewart • James Stolberg Rebbecca Stolberg • Jeffrey Stone • Faye Streier • Teigan Struck • Joseph Stubitz • Maria Stubitz • Timothy Sullivan • Bruce Swanson John Swatzell • John Swett • Katherine Swinn • Faith Swisher • Marcos Tabieros • Jason Takeshita • James Tate • Lisa Tate-Jones James Taylor • Timothy Taylor • Aaron Tellez • Bernadette Thomas • Lori Thomas • Michael Thomas • Warren Thomas • Samuel Thompson • Kevin Tibbs Shana Tighi • Glenn Timme • Kenneth Tindall • Virginia Toledo • Pedro Torres • Ronnie Torres • Deborah Tosline • Daniel Townsend Andrew Trader • Jeremy Tripp • Tanya Trone • Andrew Trouette • Phyllis Tsosie • Edith Tucker • Caireen Ulepic • Daniel Umshler Randall Unverrich • Lindsey Upton • Paul Valdez • Patricia Vanderwal • Dennis Vanryckeghem • Gustavo Varela • Laura Vecerina Lorena Vera • Daniel Vernon • Edward Virden • William Waddilove • Stacy Wade • Maria Wallior • Christopher Wallis • James Wambeke • Bart Wapler Nathalie Washington • April Webb • Henry Weckesser • Rebecca Weir • John Weiss • Valerie Weisser • Veronica Welch • Scott Wells George Wendt • Crystal White • Julie White • Dwight Whitlow • Vivian Whitlow • Debra Whitney • Mark Wilkinson • Allison Williams Dedina Williams • Rusty Williams • Sandra Williamson • Eric Willson • Brenda Wilson • Mark Wilson • Nicole Wilson • Terri Wilson Brian Wingfield • Troy Wirth • Edward Wisner • Amy Witherall • Corinna Wittig • Dennis Wolfe • George Wolfe Charles Wolford • Ty Wolters • Peter Wong • Cheri Woodward • Linda Wright-Mitchell • Damon Yabo • Kevin Yancy • Tess Yiamarelos Gloria Yoakum • Helena Yomantas • Elizabeth Young • Gary Zahlen • Katherine Zander • Alexis Zegers • Kevin Zito • Leticia Zuniga • Christopher Zurkan

LCR MSCP Laguna Conservation Area, Arizona

Regional Management Team

Regional Director
Terry Fulp

Deputy Regional Director
Jennifer McCloskey

Deputy Regional Director
Jacklynn Gould

Acting Deputy Regional Director
Terri Thomas

Chief of Staff
Michael Bernardo

Safety & Occupational Health Office
Juli Smith

Lower Colorado Dams Office
Len Schilling

Phoenix Area Office
Leslie Meyers

Southern California Area Office
Jack Simes (Acting)

Yuma Area Office
Maria Ramirez

Acquisition & Assistance Management Office
Beverly Nelson

Boulder Canyon Operations Office
Steve Hvinden

Engineering Services Office
Nathaniel Gee

Equal Employment Opportunity Office
Brittany Johnson

Public Affairs Office
Colleen Dwyer (Acting)

Financial Management Office
Stacy Wade

Human Resources Office
John Cardiff

Management Services Office
Bill Bruninga (Acting)

Lower Colorado River Multi-Species Conservation Program
John Swett

Power Office
Dave Arend

Resource Management Office
Marc Maynard

Security Office
Dan Cowden

Offices and Facilities

Our activities are accomplished through the cooperative, coordinated efforts of several offices. We also work closely with federal, state and local entities; Indian Tribes; water and power constituents; environmental groups; and other interested groups to achieve our goals.

Regional Office

Location: Boulder City, NV

Area of Operation: Primarily southern Nevada and southern Utah; works with Area Offices to accomplish Region's programs.

Major Responsibilities: The Regional Director and Deputies oversee and have overall management responsibility for Regional activities. Program offices – Acquisitions and Assistance, Equal Employment Opportunity, Engineering Services, External Affairs, Financial Management, Human Resources, Management Services, Native American Affairs, Power, Resources Management, Safety and Occupational Health, Security, and Lower Colorado River MSCP – direct, manage or work closely with Area Offices to accomplish various programs and activities.

Contact: Lower Colorado Regional Office, Bureau of Reclamation, PO Box 61470, Boulder City NV 89006
Phone: (702) 293-8000 Web site: www.usbr.gov/lc

Boulder Canyon Operations Office

Location: Boulder City, NV

Area of Operation: Colorado River from Lee Ferry in northern Arizona to Davis Dam north of Laughlin, NV/Bullhead City, AZ
Major Responsibilities: Supports the Region's water and hydropower management efforts. Works closely with the Yuma Area Office, Lower Colorado Dams Office, water and power contractors, Indian Tribes, and others to manage and schedule water and power operations on the lower Colorado River. Develops and administers water delivery contracts. Accounts for annual Colorado River water use in the Lower Basin and deliveries to Mexico. Oversees the regional water conservation program.

Contact: Boulder Canyon Operations Office, Bureau of Reclamation, PO Box 61470, Boulder City NV 89006
Phone: (702) 293-8400 Web site: www.usbr.gov/lc/riverops.html

Lower Colorado Dams Office

Location: Headquartered at Hoover Dam

Area of Operation: Manages, operates, and maintains Hoover, Davis and Parker Dams and their associated powerplants and facilities.

Major Responsibilities: Through coordinated operations with Boulder Canyon Operations and Yuma offices, delivers reliable water supply to contractors in Arizona, Nevada, California, and to Mexico. Generates power that is marketed in the three states under long-term contracts. Operates dams to provide flood protection when needed. Manages public tours of Hoover Dam; about one million people a year tour this iconic engineering structure.

Contact: Lower Colorado Dams Office, Bureau of Reclamation, PO Box 60400, Boulder City NV 89006
Phone: (702) 494-2301 Web site: www.usbr.gov/lc/hooverdam/lcdo.html

Phoenix Area Office

Location: Glendale, AZ

Area of Operation: Most of Arizona and the Gila River Basin in western New Mexico.

Major Responsibilities: Oversees the operation and maintenance of the Salt River and Central Arizona Projects, both of which are owned and constructed by Reclamation, but are managed by other entities. Maintains an oversight role with the entities that manage recreation at the New Waddell Dam reservoir and canal-side facilities developed on Reclamation-owned project lands. Partners with state, local and tribal governments and others to address contemporary water management needs. Works with the Department of the Interior and others to implement Indian water rights settlements.

Contact: Phoenix Area Office, Bureau of Reclamation, 6150 W. Thunderbird Rd., Glendale AZ 85306
Phone: (623) 773-6200 Web site: www.usbr.gov/lc/phoenix/

Southern California Area Office

Location: Temecula, CA

Area of Operation: California south of the Tehachapi Mountains except for the Imperial, Coachella and Colorado River valleys.

Major Responsibilities: Supports and cooperates with southern California water agencies, Tribes, and others to develop or enhance their water supplies or improve their water management practices. Administers water conservation, wastewater reclamation and reuse projects, desalination research, and drought assistance programs. Provides technical assistance to Indian tribes, and water resources planning activities throughout Southern California.

Contact: Southern California Area Office, Bureau of Reclamation, 27708 Jefferson Ave., # 202, Temecula CA 92590 Phone: (951) 695-5310 Web site: www.usbr.gov/lc/socal/

Yuma Area Office

Location: Yuma, AZ

Area of Operation: Lower Colorado River below Davis Dam; southwestern Arizona and southeastern California.

Major Responsibilities: Coordinates with Boulder Canyon Operations and Lower Colorado Dams offices to schedule and deliver Colorado River water to users in southwest Arizona, southeast California, and Mexico. Operates and maintains large-scale well fields to help maintain water tables near Yuma. Oversees the Yuma Desalting Plant, one of the world's largest reverse osmosis desalination facilities. Conducts advanced water treatment research at a state-of-the-art research center. Participates in water conservation outreach and demonstration projects with local irrigation districts and Native American tribes. Maintains the river system including levees and other Reclamation facilities; and provides oversight of transferred works.

Contact: Yuma Area Office, Bureau of Reclamation, 7301 Calle Agua Salada, Yuma AZ 85364
Phone: (928) 343-8100 Web site: www.usbr.gov/lc/yuma/