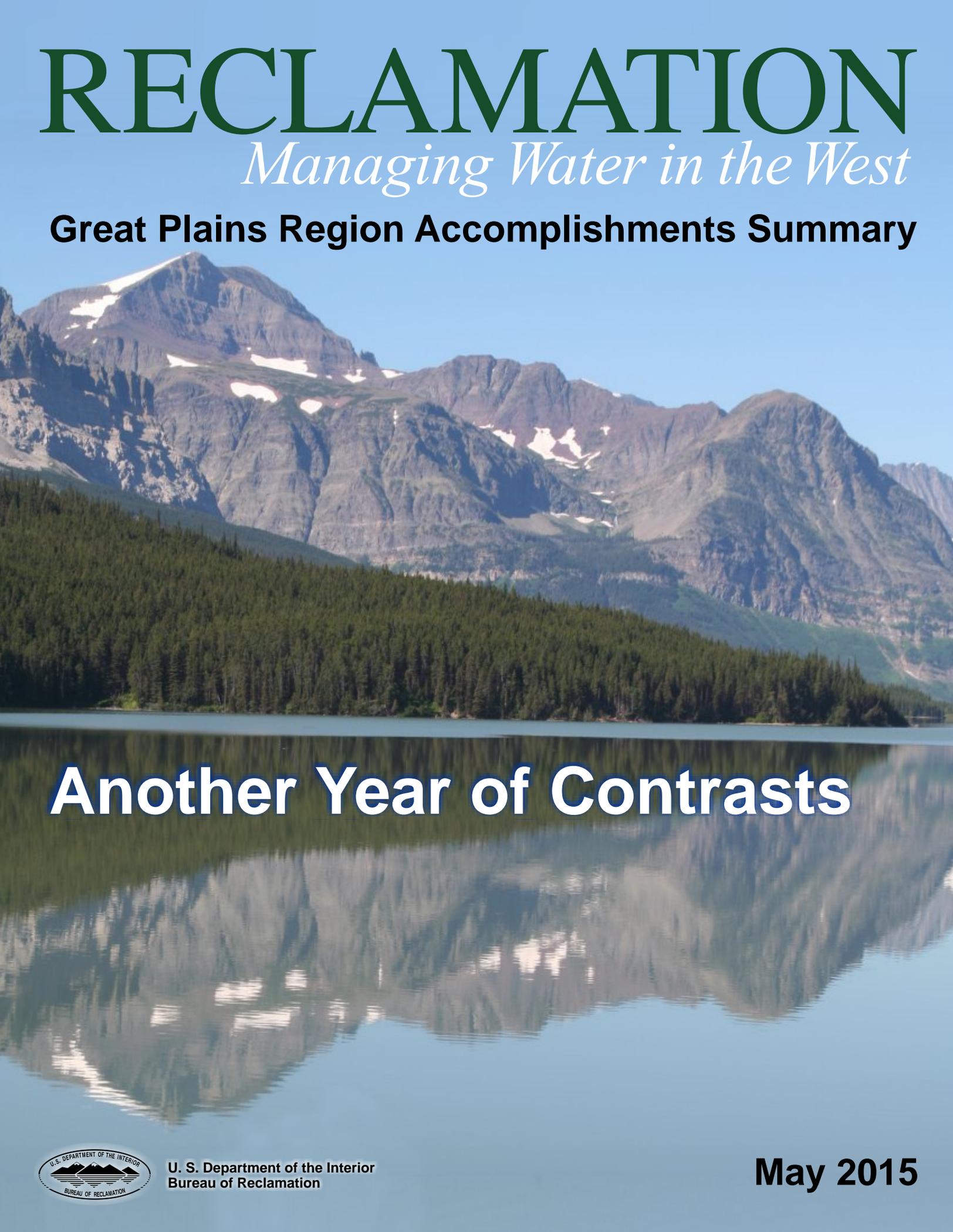


# RECLAMATION

*Managing Water in the West*

**Great Plains Region Accomplishments Summary**



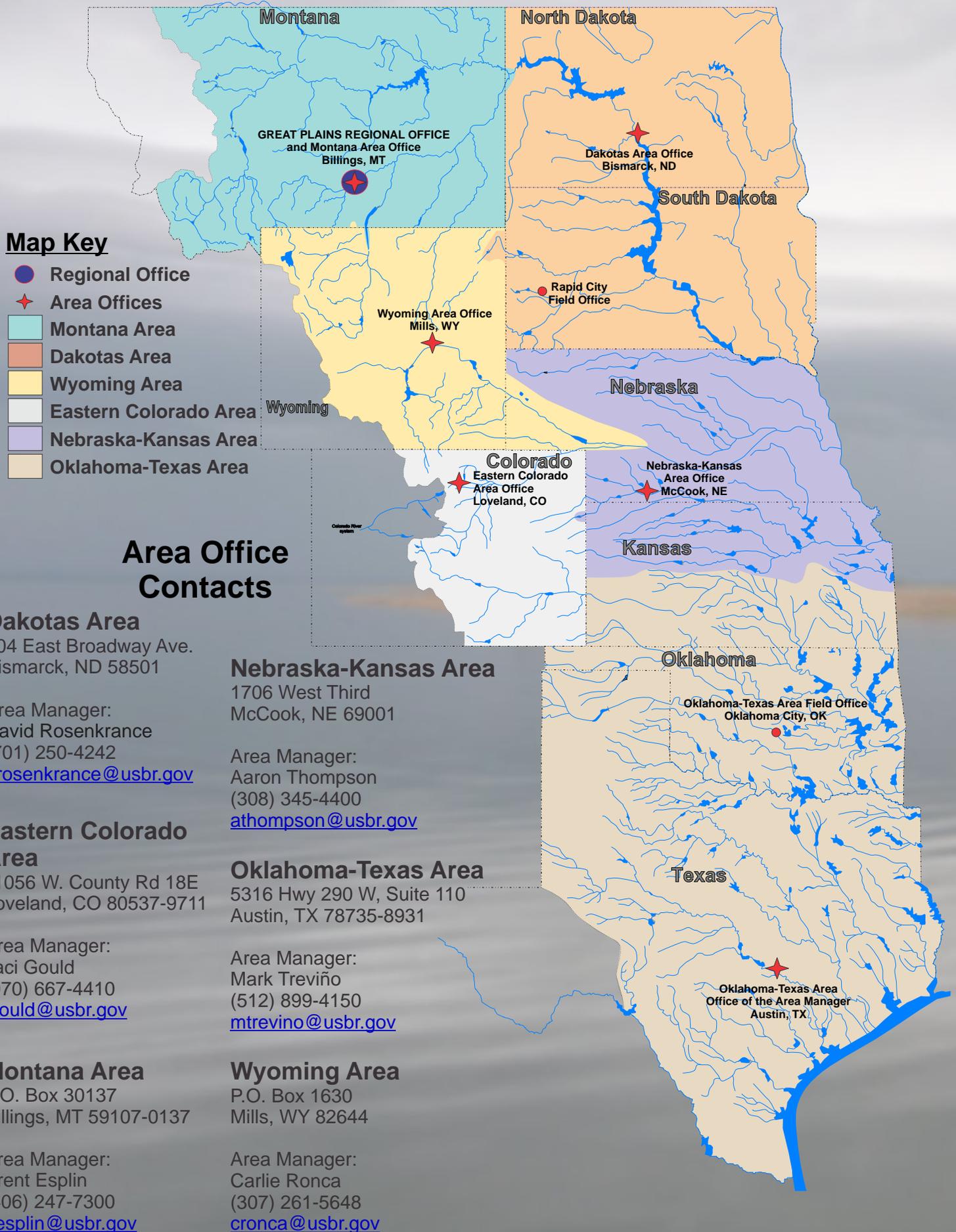
**Another Year of Contrasts**



U. S. Department of the Interior  
Bureau of Reclamation

**May 2015**

# The Great Plains Region





## From the Regional Director

Every time I begin to explain what the Great Plains Region is like, the more I am amazed by the ever changing contrasts we face. There is great geographic, social, economic and political diversity in the nine states of the Bureau of Reclamation's Great Plains Region. That's what makes this a very interesting place to work. But there's a lot of diversity in the weather, too. While we were dealing with flood operations in Oklahoma recently, we also faced dwindling water supplies in Nebraska and continued drought in Texas.

Throughout the year, Great Plains has labored on agreements affecting the future of communities in our region. From tribal rights in Montana to improved delivery systems for the front range in Colorado, or water recycling efforts in Texas, we seek to serve the American public.

No matter the challenge, the Region's employees and the agencies and organizations we work with always rise to meet challenges and accomplish great things. We worked closely this year with our partners to best use our facilities to get water where it was needed, when it was needed and to prevent it from being where it wasn't supposed to be. We have met the challenges and completed a successful year.

This publication is designed to give an overview of the many things the Region accomplished in the past year. We can't possibly cover everything, but we can give you an idea of the many aspects of our work that enable us accomplish our primary mission: delivering water and generating power for the American public.

**Michael J. Ryan, PE,  
Great Plains Regional Director**



### **Great Plains Region**

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# Area Office Accomplishments

## Montana Area Activities

### Fort Peck/Dry Prairie Rural Water System

Water will be delivered to off-reservation communities this year.

- ◆ Reclamation funding through 9/30/2014 has been \$148 million.
- ◆ Unfunded federal commitments remain for \$152 million.



Yellowtail Afterbay Dam.

### Crow Tribal Hydropower Agreement signed with the Crow Tribe for the development of hydropower at Yellowtail's Afterbay Dam.

- ◆ The March 26, 2015, agreement outlines terms and conditions for Reclamation to cooperate with the Crow Tribe and their exclusive right to develop and market hydropower generation.

### Goose Bay Marina

A modern marina at the southern end of Canyon Ferry Reservoir will be partially open to the public this year.

### Lower Yellowstone Fish Passage

Reclamation, the Army Corps of Engineers, the Fish and Wildlife Service, the State of Montana, and project irrigators have been working for a number of years to address ESA compliance issues related to pallid sturgeon.

- ◆ In 2014, Reclamation constructed a physical model of the Lower Yellowstone River Intake Diversion Dam Fish Bypass system which provided a detailed evaluation of flow conditions.
- ◆ Reclamation and the Army Corps of Engineers continue working on bypass channel designs based on results of the modeling.

## Dakotas Area Activities

### Northwest Area Water Supply

The final Supplemental Environmental Impact Statement was released to the public April 2015. This was a culmination of a multi-year effort after a 2010 District Court ruling.

### Rural Water Construction in FY 2015, Reclamation provides \$16.8 million in North Dakota and \$9 million in South Dakota.

- ◆ North Dakota systems are serving more than 280,000 people.
- ◆ South Dakota systems are serving more than 356,000 people.



Lifting the second gate tower frame into place at Snake Creek Pumping Plant in March 2014.

### Facility Rehabilitation

- ◆ **North Dakota:** The Snake Creek Pumping Plant superstructure replacement was completed at a contract cost of \$3.9 million.
- ◆ **South Dakota:** Reclamation assisted the Belle Fourche Irrigation District with improvements to the Indian Creek and Horse Creek Siphons, the North and South Gate Control Houses, and dredging of the South Canal intake. The \$5 million projects were funded by the irrigation district.

### Youth Initiative

In support of President Obama's initiative, DKAO provided work experience opportunities at Shadehill, Dickinson, Keyhole and Belle Fourche performing fencing and maintenance projects.

## Wyoming Area Activities

### Water Supplied

3.3 million acre-feet of reservoir releases were made in FY14.

- ◆ Irrigated roughly 648,000 acres of land.
- ◆ 90 water contracts for delivery of water with a majority for irrigation.
- ◆ Other uses include municipal and industrial by the state of Wyoming, towns, and private companies.

### Generation of Electricity

Wyoming Area manages 11 hydro-power plants that produced a net generation of nearly 770,000 megawatt-hours in FY14.

- ◆ Equates to nearly \$32 million.
- ◆ Enough to power 70,000 homes at 11 megawatt-hours per year.

### Flood Control Operations

FY14 was another flood operations year for the Wyoming Area.

- ◆ The Corps of Engineers estimates that WYAO facilities provided more than \$14 million in prevented damages.
- ◆ The Wyoming Area total since records were kept is \$330 million.



Fishing the Miracle Mile on the North Platte River.

### Recreation

Wyoming continues to be a popular destination for reservoir based recreation.

- ◆ An estimated 1 million recreation visitors enjoyed Wyoming Area reservoirs and lands in FY14.
- ◆ Visitors generated approximately \$1.6 million in revenue for local economies.

# Area Office Accomplishments

## Eastern Colorado Area Activities

### Big Thompson Recovery

During the September 2013 flood, the Big Thompson Canyon was severely impacted, including Dille Diversion Dam, near the mouth of the canyon.

- ◆ The small diversion dam, designed to pass up to 1300 cubic-feet-per second over the spillway, withstood a range of flow between 15,000 and 24,000 cfs at the peak.
- ◆ Repairs to Dille were completed October 22, 2014 with the placement of a new bridge to access controls.
- ◆ Big Thompson Diversion Structure, located downstream from Dille, is currently being repaired under a \$1.4 million contract.



Partially reconstructed Dille Diversion Dam.

### Windy Gap Project

The signing of the Record of Decision on December 19, 2014, culminated a multiple-year effort by multiple partners toward providing more reliable water deliveries for front range communities.

### Proactive Fire Management

Reclamation, Northern Water, the Colorado State Forest Service and the Arapaho-Roosevelt National Forest put together a plan for sharing resources and problem solving as a result of recent wildfires.

- ◆ The partnership facilitates activities such as forest thinning, minimizing post-wildfire erosion and sedimentation, and restoring areas recovering from past wildfires.

## Nebraska-Kansas Area Activities



Completed Kirwin Dam spillway repair.

### Kirwin Spillway Repair

A \$2.7 million repair to the spillway floor, apron, stilling basin and chute blocks was completed in April 2015.

### 2015 Republican River Agreement

In March 2015, the Republican River Compact Administration, Reclamation and the Bostwick Irrigation Districts reached an agreement that allowed Nebraska to lift its water closure notices on all surface rights in the basin.

- ◆ The agreement allows Nebraska to ensure no additional administration on surface water rights in 2015 and provides surface water users with more certainty.
- ◆ It allowed the Bostwick Irrigation District to amend its Memorandum of Agreement to ensure the water supply from Nebraska's augmentation projects for Compact compliance is available to Kansas water users.
- ◆ In return, Kansas agreed to provide additional flexibility to Nebraska to achieve its Compact obligations.

### Basin Studies

- ◆ The Niobrara Study partners with the Nebraska Department of Natural Resources and includes a surface-groundwater model and evaluates management options.
- ◆ The Republican Study is with the Colorado Division of Water Resources, Nebraska Department of Natural Resources, Kansas Division of Water Resources, and the Kansas Water Office and also studies surface and groundwater use.

## Oklahoma-Texas Area Activities

### Reservoir Operations and Flood Control

Due to a series of rainfall events in May 2015, six of the seven Reclamation reservoirs in Oklahoma were in flood operations, with three of those reservoirs rising into surcharge storage. Reclamation staff coordinated closely with operating partners and emergency management officials to minimize property damage and ensure public safety.

### Drought Response and Resiliency

Prior to the recent heavy rainfall events, many parts of Texas and Oklahoma were experiencing a prolonged and critical drought. Reclamation's reservoir levels were at historic lows in southwest Oklahoma.

- ◆ Installation of emergency water intake systems had been required to allow municipal and industrial water deliveries.
- ◆ In Texas, through the Title XVI and Research & Development Programs, Reclamation is funding multiple water reuse feasibility studies and providing technical expertise in water quality issues.
- ◆ Reclamation is partnering with the Oklahoma Water Resources Board and local water/irrigation districts to assess long-term demands on Reclamation Projects.



Effect of long term drought at Lake Meredith revealing the entire outlet works.

# Great Plains Accomplishments

## Region-wide Activities

### Crow Water Rights Implementation Act

Work continues on a number of different activities related to the act which requires construction activities to be completed by 2030.

- ◆ The Master Plan for Crow Irrigation Project was completed in September 2014. The plan is for designing and constructing the \$131million project rehabilitating a century old system.
- ◆ Completed the Master Plan was also completed for the \$246 million Crow Municipal Rural and Industrial Water Supply System.
- ◆ Reclamation is in negotiations with the Crow Tribe to develop a storage allocation agreement for Bighorn Lake.
- ◆ Agreement signed in March, 2015, for the development of Tribal hydropower at Yellowtail's Afterbay Dam.

### Budget and Performance

GP Region ended FY 2014 with a 98.7 percent obligation rate. All performance goals were met in FY2014. New required processes were put in place for tracking Reclamation costs.

### Dam Safety and Reliability

Reclamation facilities are routinely inspected to identify deficiencies and remediate them. Recent construction activities are in Wyoming.

- ◆ Glendo Dikes modifications (Wyoming) are currently under construction and scheduled to be completed in fall of 2015.
- ◆ Guernsey Dam modifications were completed in December 2014.

### Windy Gap Project

This Colorado project potentially entails construction of a 90,000 acre-foot water storage reservoir, Chimney Hollow, south of Flatiron Reservoir on the East Slope, to provide more reliable water deliveries to Colorado's Front Range communities and industry.

- ◆ The signing of the Record of Decision on December 19, 2014, culminated a years-long effort by multiple partners.
- ◆ Reclamation and Northern Water Conservancy District have negotiated a contract allowing use of excess, or unused, capacity in Reclamation's Colorado-Big Thompson Project for Windy Gap Project water.

### Hydropower Activities

Great Plains operates 20 power plants with a nameplate capacity of 1,000 megawatts. In FY2014 these plants produced three million megawatt hours of energy worth in excess of \$124 million or enough energy to power 273,000 homes.

- ◆ Completed Flatiron Rewind project in FY 2014.
- ◆ In the process of rewinding the four Yellowtail units.
- ◆ Rewinds and associated projects funded in part by \$31.408 million in power customer upfront funding in FY 2014, and \$22.545 million in FY 2015.
- ◆ A major rehabilitation project is planned for Mount Elbert in 2017 that has been and prefunded by power customers for \$20 million.

### Platte River Recovery Implementation Program

This program is the result of a long-term planning effort focusing on implementing a shared vision for creating and maintaining habitats on the Platte River.

- ◆ Under the 1997 cooperative agreement, \$157 million in federal funds supplied do not require reimbursement by beneficiaries.
- ◆ Reclamation funding through FY15 is \$78.5 million.
- ◆ Failure of this program would trigger individual NEPA consultations at a higher and reimbursable cost to participants.

# Great Plains Challenges

## Meeting Future Needs

### Aging Infrastructure and Increased Demands

Many Reclamation structures have been in place for 50 years or more and are approaching or exceeding their design life.

- ◆ New demands for safe and reliable water supplies place demands on structures not designed to meet them.
- ◆ Alleviating environmental costs of Reclamation facilities without adversely impacting project beneficiaries is difficult.

### Crow Water Rights Implementation Act

Timely advancement of activities for the irrigation and municipal water components is needed.

- ◆ Progress on the irrigation project is minimal and construction by Tribe on the municipal system has not started.
- ◆ Obtaining a final judgment decree of the compact by the Montana Water Court prior to the enforceability date of March 31, 2016.
- ◆ Completing negotiations for the required Bighorn Storage Allocation Agreement prior to the same enforceability date.
- ◆ Resolving the recommendations of the Office of Inspector General Audit.

### Lower Yellowstone

On February 2, 2015, the Defenders of Wildlife and Natural Resources Defense Council filed a complaint in United States District Court regarding ESA compliance issues related to pallid sturgeon at the Intake Diversion Dam near Glendive, Montana.

- ◆ The bypass channel has been identified as the most viable alternative to improve fish passage while maintaining the the irrigation project .
- ◆ Reclamation and the USACE received a letter from the state confirming their support for the Bypass Channel Alternative.

### Rural Water Program Funding

Authorized projects in Montana, North Dakota and South Dakota have significant budget impacts.

- ◆ Fort Peck – Dry Prairie: unfunded federal construction: \$143 million
- ◆ Lewis and Clark: unfunded federal construction: \$191 million.
- ◆ Rocky Boys / North Central: unfunded federal construction: \$240 million.
- ◆ Garrison Diversion unfunded federal construction:
  - State - \$170 million
  - Tribal - \$171 million.
- ◆ In addition, operation and maintenance of tribal systems are funded by Reclamation at a cost in FY15 of \$17.8 million.

### Staffing Issues

It has become difficult to compete with the private sector in filling technical positions, particularly in areas near the Bakken oil field.

- ◆ Providing construction management for Safety of Dams projects scheduled for 2016 in Wyoming, Montana, and Oklahoma will be difficult.
- ◆ The potential Arkansas Valley Conduit project will likely be a challenge to staff.
- ◆ A recent wage comparison showed that Reclamation engineers were paid 24 percent less than comparable positions in Bismarck, North Dakota.

### Dam Safety Program Costs

The ability of operating partners (particularly irrigation district partners) to fund major O&M activities continues to be a challenge. Rehabilitation of radial gates at Altus Dam in Oklahoma is an example:

- ◆ Nine large flood control radial gates are almost 70 years old and are scheduled to be replaced in 2016 at a cost of more than \$4 million.
- ◆ The Altus Irrigation District is required to cost-share 15 percent of these dam safety modifications even though no water deliveries have been made in the past four years due to drought.

### Republican River Water Supply

The water supply from federal reservoirs in the Republican River Basin will be very limited in 2015.

- ◆ Based on Nebraska's Compact Call, it's estimated that 13,000 acre feet of project water will be available for the Bostwick Irrigation District in Nebraska.
- ◆ The Kansas Bostwick Irrigation District's and Frenchman Cambridge Irrigation District supplies are also limited.
- ◆ Irrigation districts are concerned their long-term financial viability is in jeopardy if Nebraska's Compact Call administration continues.

*Background Photos - this page: Gibson Dam, Montana.  
facing page: McGee Creek Dam river outlet shaft interior.  
cover: Sherburne Lake, Montana.*

# Great Plains Region Quick Facts

Irrigates more than  
2 million acres



Has avoided over \$3.4  
billion in flood damages



Generates power for more  
than 173,000 homes



Provides drinking water for  
more than 3 million people



Has 81 recreation areas with more  
than 14 million visitors annually



Provides fish and wildlife  
habitat in nine states



For more about our projects and  
facilities go to: [www.usbr.gov/gp](http://www.usbr.gov/gp)



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.