SIXTY-EIGHTH ANNUAL REPORT

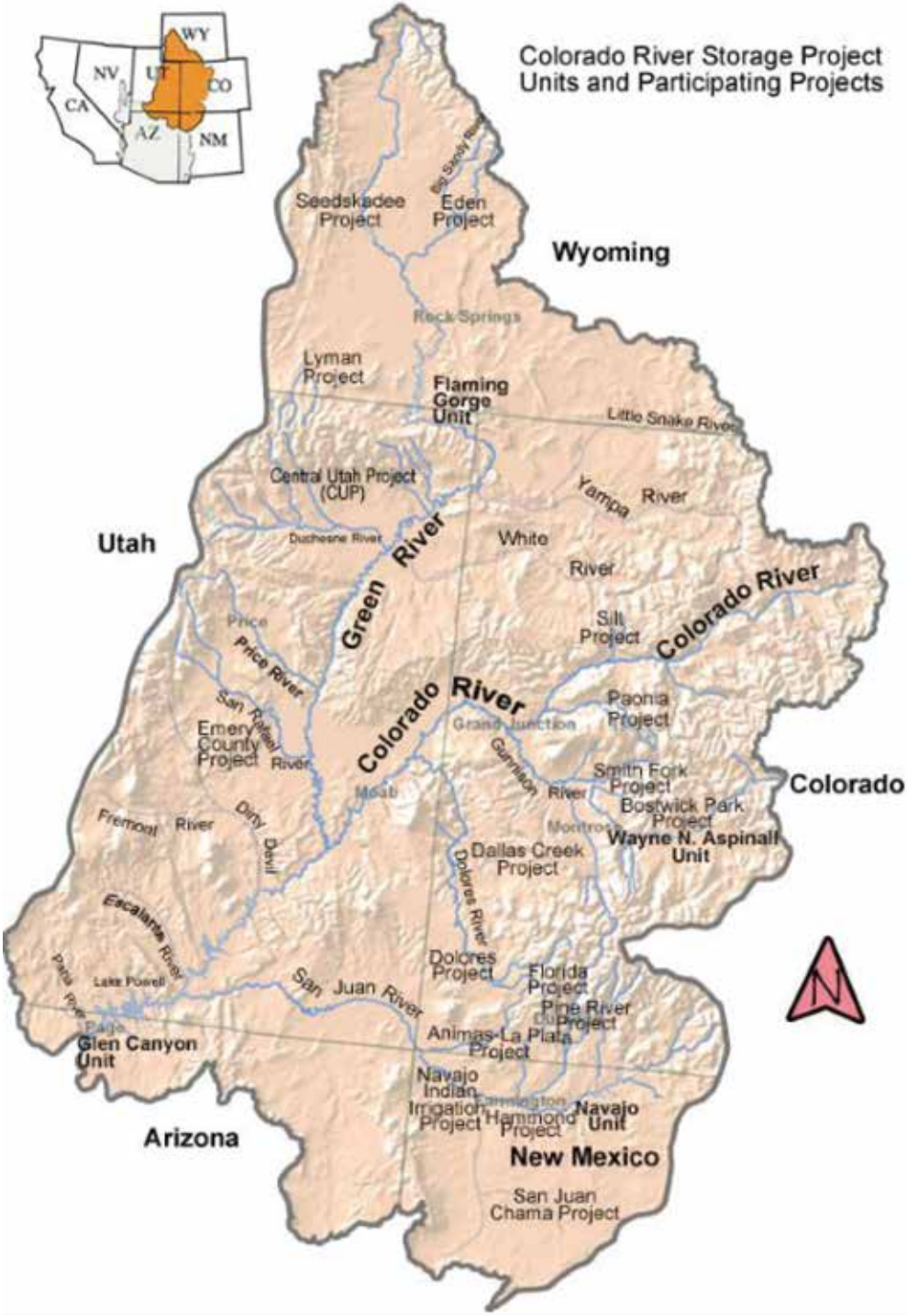
OF THE

Upper Colorado River Commission

SALT LAKE CITY, UTAH

SEPTEMBER 30, 2016

Upper Colorado River Basin



UPPER COLORADO
RIVER COMMISSION
355 South 400 East • Salt Lake City • Utah 84111 • 801-531-1150 • FAX 801-531-9705

April 1, 2017

President Donald Trump
The White House
Washington, D.C. 20500

Dear President Trump:

The Sixty-Eighth Annual Report of the Upper Colorado River Commission, as required by Article VIII(d)(13) of the Upper Colorado River Basin Compact, is enclosed.

The budget of the Commission for fiscal year 2017 (July 1, 2016 – June 30, 2017) is included in this report as Appendix B.

In accordance with Article VIII of the Upper Colorado River Basin Compact this report has also been transmitted to the Governor of each State signatory to the Upper Colorado River Basin Compact, which includes Colorado, New Mexico, Utah, Wyoming and Arizona.

Respectfully yours,

Don A. Ostler, P.E.
Executive Director

Enclosure

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Acknowledgements:

The Upper Colorado Region of the U.S. Bureau of Reclamation contributed substantially to the text and technical content of this report.

PREFACE

Article VIII(d)(13) of the Upper Colorado River Basin Compact requires the Upper Colorado River Commission to "make and transmit annually to the Governors of the signatory States and the President of the United States of America, with the estimated budget, a report covering the activities of the Commission for the preceding water year."

Article VIII(1) of the By-Laws of the Commission specifies that "the Commission shall make and transmit annually on or before April 1 to the Governors of the states signatory to the Upper Colorado River Basin Compact and to the President of the United States a report covering the activities of the Commission for the water year ending the preceding September 30."

This Sixty-seventh Annual Report of the Upper Colorado River Commission has been compiled pursuant to the above directives.

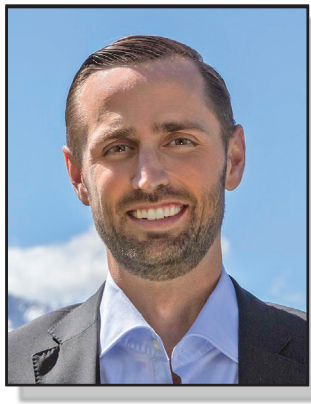
This Annual Report includes, among other things, the following:

- Membership of the Commission, its Committees, Advisers, and Staff;
- Roster of meetings of the Commission;
- Brief discussion of the activities of the Commission;
- Engineering and hydrologic data;
- Pertinent legal information;
- Information pertaining to congressional legislation;
- Map of the Upper Colorado River Basin;
- Status of the Storage Units and participating projects of the Colorado River Storage Project;
- Appendices containing: Fiscal data, such as budget, balance sheet, statements of revenue and expense.

A special thanks is in order to the many staff of the U.S. Bureau of Reclamation who have contributed most significantly to the text and data presented herein.

COMMISSION

Amy Haas
Commissioner for
New Mexico



James Ecklund
Commissioner for
Colorado

Felicity Hannay
Chairwoman
Commissioner for
United States

Eric L. Millis
Commissioner for
Utah

Patrick T. Tyrrell
Commissioner for
Wyoming

ALTERNATE COMMISSIONERS

Mike King	State of Colorado
John R. Stulp	State of Colorado
John McClow	State of Colorado
Dallin W. Jensen	State of Utah
Robert V. King	State of Utah
Benjamin C. Bracken	State of Wyoming
Randy Bolgiano	State of Wyoming
Keith Burron	State of Wyoming

OFFICERS OF THE COMMISSION

Chairwoman	Felicity Hannay
Vice Chairman	Patrick T. Tyrrell
Secretary	Don A. Ostler
Treasurer	Silvia Norman
Assistant Treasurer	Sergio Bodero

STAFF

Executive Director	Don A. Ostler
Assistant to the Executive Director and General Counsel	Jane Bird
Administrative Secretary	Teri Kay Gomm

COMMITTEES

The Committees of the Commission convened several times during the year. Committees and their membership at the date of this report are as follows (the Chairman and the Secretary of the Commission are ex-officio members of all committees, Article V(4) of the By-Laws):

Legal Committee:

Norman K. Johnson, Chairman – Utah
Cynthia H. Coffman - Colorado
Scott Balcomb – Colorado
Jim Lochhead – Colorado
Bennett Raley – Colorado
Steve Farris – New Mexico
Lee Miller - Colorado
Beth VanVurst – Colorado
Shanti Rosset O'Donovan - Colorado
John W. Suthers – Colorado
Ted Kowalski – Colorado
Barry Spear – Colorado
Karen Kwon – Colorado
Peter Fleming – Colorado
Mike Quealey – Utah
Chris Brown - Wyoming
Amy Haas – New Mexico

Engineering Committee

Kristen Green – New Mexico
Eric Kuhn - Colorado
Mike Sullivan – Colorado
Paul Harms - New Mexico
Steve Wolff – Wyoming
Michelle Garrison – Colorado
Ted Kowalski – Colorado
Gawain Snow – Utah
Scott McGettigan – Utah
Bruce Whitehead – Colorado
Brenda Mefford – Wyoming
Kevin Flanigan – New Mexico
Robert King – Utah
D. Randolph Seaholm – Colorado
Kent Jones – Utah
Marc Wage – Colorado
Jared Hansen – Utah

Budget Committee:

James Eklund – Colorado
Eric L. Millis – Utah
Patrick T. Tyrrell – Wyoming
Amy Haas – New Mexico

GENERAL ADVISERS TO COMMISSIONERS

The following individuals serve as advisors to their respective Commissioner:

Utah:
Gene Shawcroft
Manager
Central Utah Water Conservancy District
Orem, Utah

Gawain Snow
General Manager
Uintah Water Conservancy District
Vernal, Utah

Colorado:
John R. Stulp
Denver, Colorado
Special Policy Advisor to the Governor for Water
IBCC Director

MEETINGS OF THE COMMISSION

During the Water Year ending September 30, 2016 the Commission met as follows:

Meeting No. 272 December 16, 2015	Las Vegas, Nevada
Meeting No. 273 January 21, 2016	By Phone
Meeting No. 274 June 2, 2016	Midway, Utah

ACTIVITIES OF THE COMMISSION

General Activities:

Within the scope and limitations of Article 1(a) of the Upper Colorado River Basin Compact and under the powers conferred upon the Commission by Article VIII(d), the principal activities of the Commission have consisted of: (A) research and studies of an engineering and hydrologic nature of various facets of the water resources of the Colorado River Basin especially as related to operation of the Colorado River reservoirs; (B) collection and compilation of documents for the legal library relating to the utilization of waters of the Colorado River System for domestic, industrial and agricultural purposes, and the generation of hydroelectric power; (C) legal analyses of associated laws, court decisions, reports and problems; (D) participating in activities and providing comments on proposals that would insure and allow the beneficial consumptive uses in the Upper Basin, including environmental, fish and wildlife, endangered species and water quality activities; (E) cooperation with water resources agencies of the Colorado River Basin States on water and water-related problems; (F) an education and information program designed to aid in securing planning and investigation of storage dams, reservoirs and water resource development projects of the Colorado River Storage Project that have been authorized for construction and to secure authorization for the construction of additional participating projects as the essential investigations and planning are completed; and (G) a legislative program consisting of the analysis and study of water resource bills introduced in the U.S. Congress for enactment, the preparation of evidence and argument and the presentation of testimony before the Committees of the Congress.

Specific Activities:

The Commission, its full time staff and the Engineering and Legal Committees have been actively involved in matters pertinent to the administration of waters of the Colorado River. In addition to the above Commission meetings, a large number of additional work meetings, Committee meetings, work groups and conference calls have been held under the authority of the Commission. Activities have included but are not limited to: Meetings regarding implementation of Coordinated Reservoir Operations and Shortage Management, environmental issues coordination with Mexico on water management issues, augmentation of the Colorado River supply, climate change impacts to water supply, annual operations plans for Glen Canyon Dam, curtailment avoidance, Lees Ferry gage flow measurements, Upper Basin water demand and depletion schedules, future water supply and demand studies, drought mitigation/ contingency planning, Pilot System Conservation Projects and various legal matters.

Oversight and Administration of Implementation of the Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead:

The Commission and Upper Division States have been heavily involved during the eighth and ninth year of operation under the 2007 Interim Guidelines. Under the Interim Guidelines operating rules the release from Lake Powell to the lower Colorado River basin during water year 2014 was dropped for the first time from 8.23 maf to an objective of 7.48 maf reflecting low storage conditions at that time in Lake Powell. The objective release from Lake Powell during water year 2015 and 2016 has been 9.0 maf. Since the August 24-month study is used to predict storage elevations in Lake Powell which then determine the operational and release

tier for the following year, the Commission has focused much attention on the accuracy of the modeled predictions. In a previous year this over-prediction of elevation placed Lake Powell in the equalization tier when in actuality the reservoir elevations never achieved the equalization level. It was determined that the assumptions for bank storage, Powell inflow and the averaging period for hydrology, as well as forecast error may be affecting accuracy. Modifications to the 24-month study model were made incorporating mass balance assumptions for inflow, new estimates of bank storage and an updated 30-year hydrology average during 2012. The Commission continues to evaluate the accuracy of the 24-month study predictions, and more work needs to be done. In water year 2013, the difference between the August 24-month study predicted elevation and actual elevation of Lake Powell for January 1 was 5.3 feet. In water year 2014, the difference between the August prediction and actual January 1 elevation was just 1.0 foot and in water year 2015, 1.8 feet. In water year 2016 there was an over prediction of 1.66 feet and in water year 2017 the over prediction was 5.34 feet. The Commission will continue to monitor this issue. It must be understood that the accuracy of reservoir elevation predictions five months in advance of January 1 to facilitate Interim Guidelines decisions depends both on the accuracy of the model to approximate reservoir elevations, but also on the ability to predict weather, precipitation and runoff during the period. The Commission is also gathering information on possible changes to future guidelines based upon operating experience that may improve the guidelines or may be needed if they are considered for extension beyond the year 2026.

Negotiations with Mexico Regarding Shortage Sharing and Augmentation of the Supply:

The Commission and Upper Division States were actively involved with the Department of the Interior in discussion with the Mexican counterparts on how to better manage and share future shortages as well as meet future demands for water. This includes using storage more efficiently as well as implementing additional conservation measures within both nations. Considerable effort was also expended to evaluate means of enhancing the supply and in evaluating possible affects in salinity and water quality. An historic Minute No. 319 to the Mexican Water Treaty of 1944 was signed on November 20, 2012 in Coronado, California by the U.S. and Mexican Commissioners of the International Boundary and Water Commission (IBWC). Prerequisite agreements were signed by the seven basin states and the Upper Colorado River Commission to allow adoption of Minute 319. During 2016 the Commission and its staff have been actively involved with Interior and IBWC in implementing Minute 319. Significant work has been accomplished in evaluating basin hydrology and possible new shortage triggers as well as implementation details for new projects to conserve or provide water and the delivery of environmental flows. During 2015 and 2016 the Commission staff and states have participated with the Department of the Interior and IBWC to extend Minute 319 which is due to expire at the end of 2017. These negotiations were productive and resulted in preparation of draft Minute 32X but were not able to be completed before the change of administration. It is expected that negotiations will begin again in 2017 to produce a new Minute to the Treaty that will involve additional shortage sharing or conservation, storage opportunity in US reservoirs, joint projects to improve efficiency or extend the supply as well as salinity and environmental considerations.

Implementation of the Colorado River Basin Fund MOA:

Agreement was reached during water year 2011 on a Memorandum of Agreement (MOA) with the Colorado River Energy Distributors Association, Reclamation, Western Area Power Administration and the Upper Division States to allow basin funds to be used for future state development projects as well as operation, maintenance, and replacement of existing CRSP related projects. Projects have been proposed for funding and are now in the process of

implementation as new projects are being developed and proposed. Approximately $100 million in projects to benefit Upper Basin states have been approved.

Lees Ferry Stream Gage on the Colorado River:

The Commission continues to study the differences between flow measurement at Glen Canyon Dam and Lees Ferry, which is nearest to the Colorado River Compact measuring point at Lee Ferry, Arizona (16 miles below Glen Canyon Dam). This flow measuring point is extremely important in administration of the 1922 Colorado River Compact. The USGS, after consultation with the Commission, has completed improvements to flow measuring equipment that have improved its accuracy. In addition, during Water Year 2011, the USGS conducted field measurements of inflow between Glen Canyon Dam and Lees Ferry, which documented gains in flow. Approximately 104,000 additional acre-ft. passed Lee Ferry than was released from the dam in Water Year 2014. From 2007 to 2015 the average increase in flow at Lee Ferry compared to the dam release is 145,000 acre-ft. per year. During 2015, the gain in this reach was 153,000 ac-ft. Over the last ten years, the cumulative gain at Lees Ferry compared to Glen Canyon Dam release records is 1,307,000 ac-ft. The Commission is continuing to evaluate how this information should be incorporated into dam operations.

Upper Division States Drought Contingency Planning:

The Commission and its engineering and legal advisors are continuing to develop drought contingency plans to avoid or reduce the adverse effects on Upper Basin water users from low reservoir conditions. Evaluations include analyzing how to optimize and coordinate all CRSP storage to mitigate the effects of low reservoir conditions on water users as well as evaluation of voluntary conservation and water banking activities. The components of the upper basin plan will include continuation and expansion of current weather modification efforts, coordinated drought operation of upper CRSP reservoirs to avoid critical low elevations in Powell and detailed study of demand management actions to avoid critical low reservoir elevations. Preliminary modeling indicates that these actions may significantly reduce the risk of critical low reservoir conditions occurring in Lake Powell. These actions have the potential of reducing the risk of compact compliance issues occurring and will help avoid loss of power generation with all of its many benefits. The Commission and states are interested in having an acceptable contingency plan on the shelf for these very low probability hydrology scenarios which have such high consequences. This plan has been thoroughly vetted with stakeholders. Discussions are ongoing between the Department of the Interior, Upper Division States and the Commission to formalize a drought operation plan.

Colorado River Basin Supply and Demand Study:

The Commission, all seven Colorado River Basin States, many large water users within the Basin and the Department of the Interior have participated in completion of a study to quantify current and future demand and supply using various assumptions for future hydrology to identify possible imbalances. All methods to address the supply imbalance, including conservation, efficiency and augmentation, are now being evaluated. Efforts during WY 2014 have been to evaluate next steps including detailed work with stakeholder committees on agricultural conservation, municipal and industrial conservation as well as environmental flow needs. Additional work will occur during water year 2017.

System Water Conservation Pilot Program:

In response to the current 16 year drought in the Colorado River Basin and declining reservoir elevations, four major water suppliers including Central Arizona Project, Denver Water, The Metropolitan Water District of Southern California, and Southern Nevada Water Authority along with the U.S. Bureau of Reclamation contributed $11 million to assist the Colorado River

Basin States in drought contingency planning. The purpose of these funds was to fund water conservation projects in a cooperative, temporary and voluntary manner to demonstrate the viability of reducing water demand in order to avoid critical low reservoir conditions. From the initial contributions $2.75 million was to be spent in the upper basin. The Upper Colorado River Commission has become the management agency for administering these funds and awarding projects to conserve water dedicated to the Colorado River System with the substantial support of the upper division states.

To date, 29 projects have been identified for funding during WY 2015 and WY 2016. Projects have or will occur in all four upper division states and are intended to reduce water demand in areas of agriculture and municipal uses. The completed projects and those identified for current funding are expected to conserve at least 11,300 ac-ft. of water to the Colorado River System at a total cost of about $2.5 million. These projects have already demonstrated that there is an interest in compensated, temporary and voluntary water reductions in time of severe drought. These projects are also allowing the upper basin to learn many aspects about administration of such an effort regarding contracting, verification and disposition of the conserved water etc. The upper division states and the Commission believe it is prudent in critical low reservoir situations to take proactive steps to manage the drought to ease the burdens upon all water users in the upper basin.

In late 2016, and in response from a significant grant from Reclamation and other funding entities, the System Conservation Pilot Program was extended another year into 2017. An estimated $2.05 million is to be spent in 2017 towards twelve unique projects that will conserve an estimated 11,000 ac-ft and add new learning opportunities. A final report detailing the effectiveness of the program and lessons learned is expected for publication in 2017.

Consumptive Use Measurement Studies:

The Commission understands the importance of being able to appropriately estimate Upper Basin consumptive use of Colorado River water. It is an important part of Compact administration. As a result the Commission and Reclamation have jointly initiated studies to identify improvement opportunities in methodology, coordination and timeliness. Various methods of determining consumptive use volumes from agricultural areas have been studied including use of remote sensing techniques. The Commission and Reclamation have expanded the basin system for collecting meteorological data including installation of five Eddy covariance towers. The Commission and Reclamation will initiate full scale, upper basin-wide study of several remote sensing methods during summer 2017.

A. ENGINEERING-HYDROLOGY

1. Stream Flow and Hydrology Summary

The historical flow of the Colorado River at Lee Ferry for water year 2016 based upon USGS stream flow records at the Lee's Ferry and Paria River gages was 9,138,000 acre-feet. The progressive 10-year total flow at Lee Ferry was 91,380,000 acre-feet (2007 to 2016).

The virgin or natural flow of the Colorado River at Lee Ferry was estimated to be 14.0 million acre-feet, which is less than the average virgin flow for the period of record of 14.6 million acre-feet (1896 to 2016).

In the Upper Colorado River Basin during Water Year 2016, the overall precipitation accumulated through September 30, 2016 was approximately 96% of average based upon the 30 years of data between the years of 1981 and 2006. Unregulated inflow to Lake Powell in Water Year 2016 was about 79% of the 30-year average, or 9.62 million acre-feet (maf).

The Upper Colorado River Basin continues to experience a protracted drought that began in October 1999. Unregulated inflow to Lake Powell has varied during this time as follows:

Unregulated Inflow to Lake Powell

2000 - 62%

2001 - 59%

2002 - 25%

2003 -51%

2004 - 49%

2005 - 105%

2006 – 73%

2007 – 68%

2008 – 102%

2009 – 88%

2010 – 73%

2011 – 139%

2012 – 45%

2013 – 47%

2014 – 96%

2015 – 94%

2016 – 89%

Inflow has been above average in only 3 of the last 17 years, which is the lowest 17-year period since the closure of Glen Canyon Dam in 1963.

Runoff adjusted for change in storage in Colorado River Storage Project reservoirs for the water year ending September 30, 2016 was 96% of the long-term average at the San Juan River station near Bluff, Utah and 109% of the long-term average at the Colorado River Station near Cisco, Utah. The volumes of runoff at these stations were 1,256,785 acre-feet and 4,604,200 acre-feet, respectively. Runoff at the Green River station near Green River, Utah was 120% of the long-term average and totaled 4,003,500 acre-feet.

2. Summary of Reservoir Levels and Contents

As of September 30, 2016 total system storage (Upper and Lower Basins) was 59.1% of capacity. For the period October 1, 2015 through September 30, 2016, the change in reservoir storage, excluding bank storage and evaporation, at selected Upper Basin reservoirs was as follows:

- Fontenelle decreased 25,100 acre-feet
- Flaming Gorge decreased 242,700 acre-feet
- Taylor Park decreased 600 acre-feet
- Blue Mesa decreased 60,300 acre-feet
- Morrow Point increased 4,600 acre-feet
- Crystal increased 600 acre-feet
- Navajo decreased 81,900 acre-feet
- Lake Powell increased 491,200 acre-feet

The virgin flow[1] of the Colorado River at Lee Ferry[2] for the 2016 water year was estimated to be 14.0 million acre-feet.[3]

Observed inflows to Lake Powell during Water Year 2016 were below average (89%); Lake Powell storage increased by 491.2 kaf and ended the water year at 52.7% of capacity, with 12.82 maf of storage at elevation 3,610.93 feet. A more detailed description of Lake Powell conditions is found in section H of this report. The release from Lake Powell during Water Year 2016 was 9.0 maf.

Reservoir storage in Lake Mead decreased during Water Year 2016 from 9,854,000 acre-feet to 9,620,000 acre-feet, which is 36.8% of capacity. The total Colorado River System experienced a loss in storage during Water Year 2016 of approximately 129,000 acre-feet and ended the year at 50.7% of capacity.

Table 1 on page 12 shows the statistical data for principal reservoirs in the Upper Colorado River Basin. Table 2 on page 13 shows the same information for the Lower Colorado River Basin reservoirs.

The results of the long-range reservoir operation procedures and the Interim Guidelines for Lower Basin Shortage and Coordinated Reservoir Operating Criteria as adopted by the Secretary of the Interior for Powell, Flaming Gorge, Fontenelle, Navajo, and Blue Mesa Reservoirs in the Upper Colorado River Basin and Lake Mead in the Lower Basin are illustrated on pages 15 through 21 for the 2016 Water Year.

3. Flows of Colorado River

Table 3 on pages 25 and 26 shows the estimated virgin flow of the Colorado River at Lee Ferry, Arizona for each water year from 1896 through 2016. Column (4) of the table shows the average virgin flow for any given year within the period computed through Water Year 2016. Column (5) shows the average virgin flow for a given year within the period computed since Water Year 1896. Column (6) shows the average virgin flow for each progressive ten-year period beginning with the ten-year period ending on September 30, 1905. The difference between the virgin flow for a given year and the average flow over the 120-year period, 1896 through 2016 is shown in column (7)

Article III (d) of the Colorado River Compact stipulates that “the States of the Upper Division will not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years reckoned in a continuing progressive series beginning with the first day of October next succeeding the ratification of this Compact.” Prior to the storage of water in the Colorado River Storage Project reservoirs, which began in 1962, the flow of the river at Lee Ferry in any ten consecutive years was greatly in excess of the 75,000,000 acre-feet required by the Compact. Beginning in 1962, Colorado River Storage Project reservoirs have regulated the river above Glen Canyon Dam. Table 4 on page 27, shows the historic flow at Lee Ferry for the period 1954 through 2016. The historic flow for each progressive ten-year period from 1954 through 2016, beginning

1 Virgin flow is the estimated flow of the stream if it were in its natural state and unaffected by the activities of man.

2 Lee Ferry, Arizona is the division point between the upper and lower basins of the Colorado River as defined in the Colorado River Compact. It is located about one mile downstream from the mouth of the Paria River and about 16 miles downstream from Glen Canyon Dam.

3 Based on provisional records subject to revision.


Glen Canyon Dam Test Releases - Courtesy of Bureau of Reclamation - T. Ross Reeve

Table 1

STATISTICAL DATA FOR PRINCIPAL RESERVIORS IN COLORADO RIVER BASIN

UPPER BASIN

Colorado River Storage Project
(Total Surface Capacity)

(Units: Elevation = feet; Capacity = 1,000 acre-feet)

	Fontenelle		Flaming Gorge		Taylor Park		Blue Mesa		Morrow Point		Crystal		Navajo		Lake Powell	
	Elev.	Cap	Elev.	Cap.	Elev.	Cap.	Elev.	Cap.	Elev.	Cap.	Elev.	Cap.	Elev.	Cap.	Elev.	Cap.
River elevation at dam (average tailwater)	—	—	5,603	0	9,174	0	7,160	0	6,775	0	6,534	0	5,720	0	3,138	0
Dead Storage	6,408	0.56	5,740	40	—	—	7,358	111	6,808	0	6,670	8	5,775	13	3,370	1,893
Inactive Storage (minimum power pool)	—	—	5,871	273	—	—	7,393	192	7,100	75	6,700	12	5,990[4]	673	3,490	5,890
Rated Head	6,491	234	5,946	1,102	—	—	7,438	361	7,108	80	6,740	20	—	—	3,570	11,000
Maximum Storage	6,506	345	6,040	3,789	9,330	106	7,519	941	7,160	117	6,755	25	6,085	1,709	3,700	26,215

[4] The elevation for inactive storage for Navajo Reservoir is required for the Navajo Indian Irrigation Project.

Table 2

STATISTICAL DATA FOR PRINCIPAL RESERVOIRS IN COLORADO RIVER BASIN

LOWER BASIN

(Usable Surface Capacity)

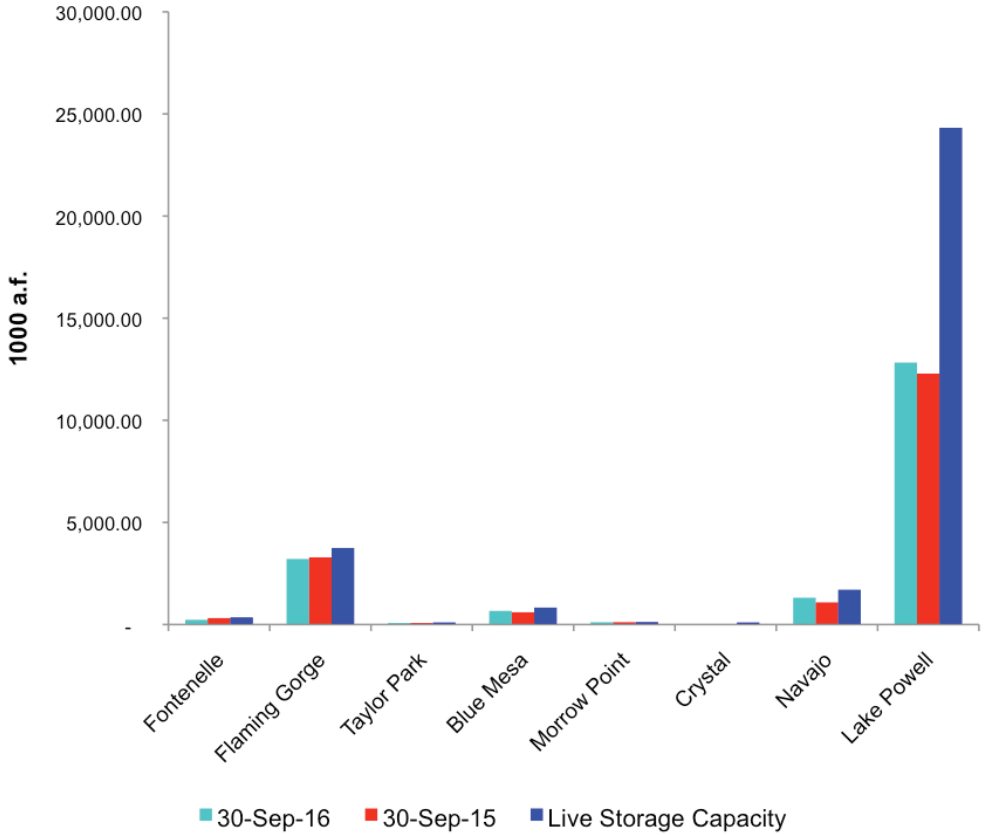
(Units: Elevation = feet; Capacity = 1,000 acre-feet)

	Lake Mead		Lake Mohave		Lake Havasu	
	Elev.	Capacity	Elev.	Capacity	Elev.	Capacity
River elevation at dam (average tailwater)	646	-2,378	506	-8.5	370	-28.6
Dead Storage	895	0	533.39	0	400	0
Inactive Storage (minimum power pool)	1,050	7,471	570	217.5	440[5]	439.4
Rated Head	1,122.80	13,633	-	-	-	-
Maximum Storage (without surcharge)	1,221.40	26,159	647	1,809.80	450	619.4

[5] The elevation for inactive storage for Lake Havasu is the contractual minimum for delivery to Metropolitan Water District's Colorado River Aqueduct.

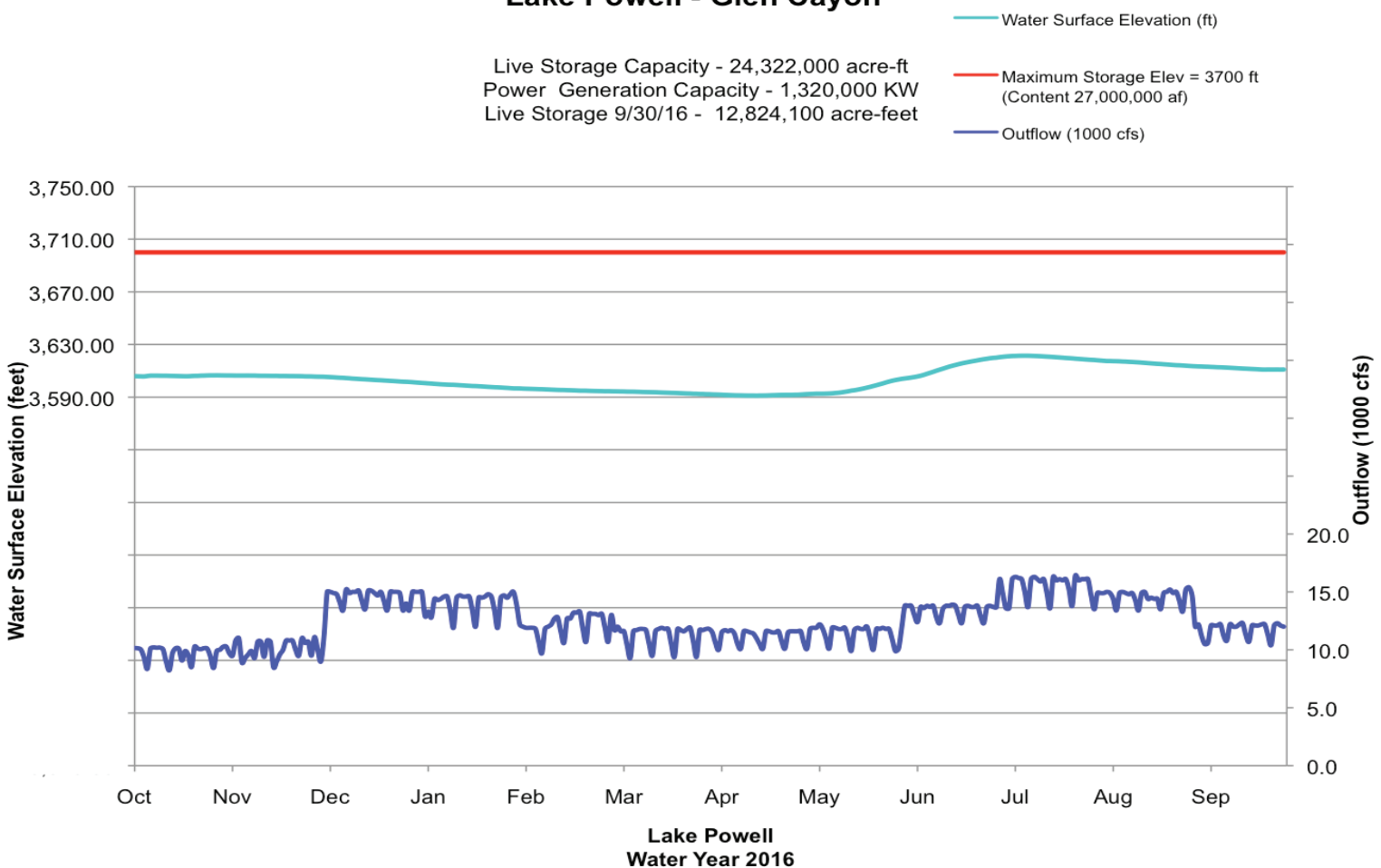
Storage in Principle Reservoirs at the End of Water Year 2016
Upper Basin
Live Storage Contents

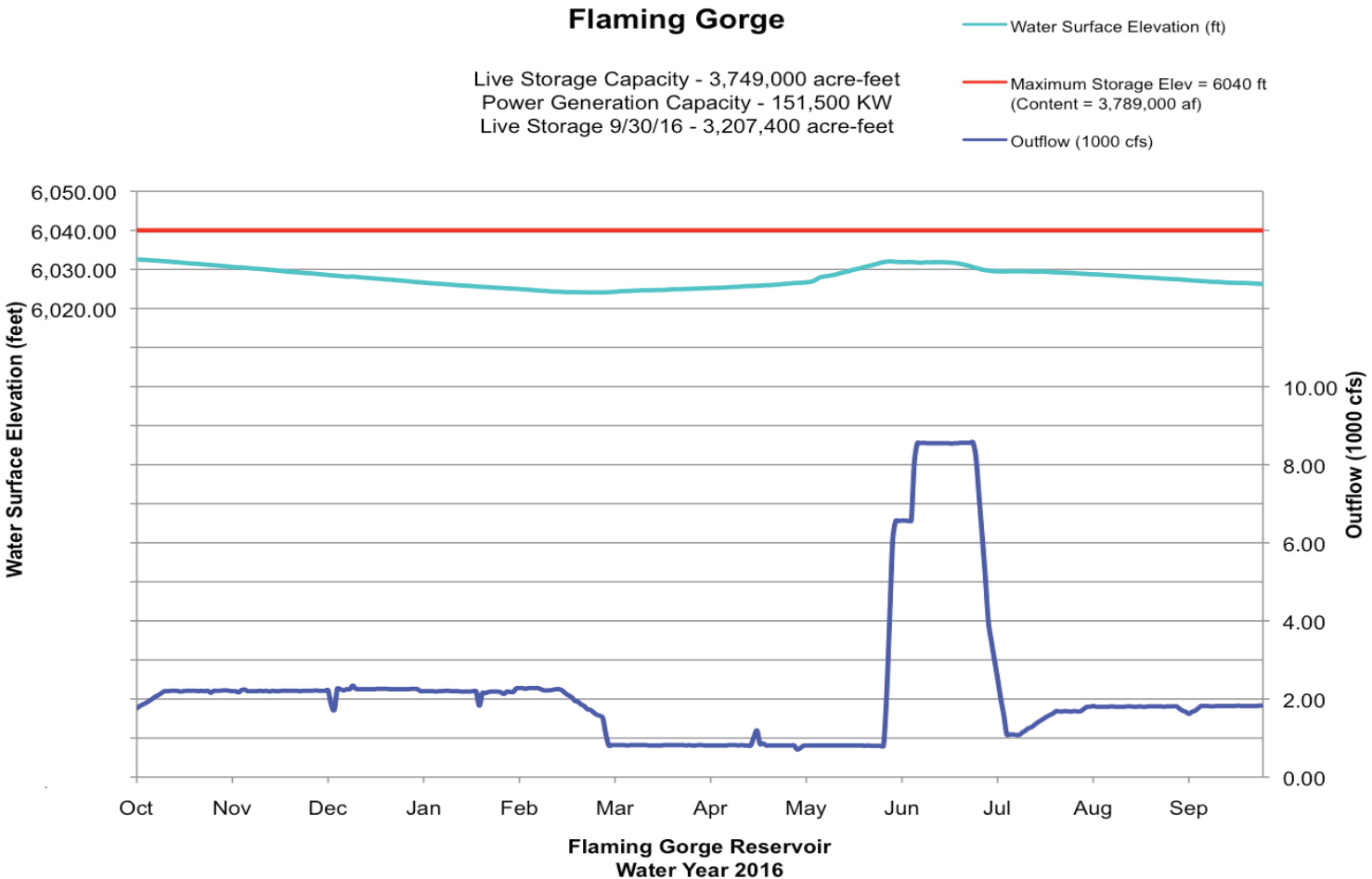
Reservoir	Sept 30, 2016 (acre-feet)	Percent Live Capacity	Sept 30, 2015 (acre-feet)	Percent Live Capacity	Change in Contents (acre-feet)
Fontenelle	228,600	66.3%	253,700	91.0%	(25,100)
Flaming Gorge	3,207,400	85.6%	3,450,100	87.7%	(242,700)
Taylor Park	71,100	66.9%	71,700	72.3%	(600)
Blue Mesa	665,300	80.3%	725,600	72.3%	(60,300)
Morrow Point	109,100	93.2%	104,500	95.7%	4,600
Crystal	15,200	86.7%	14,600	87.8%	600
Navajo	1,309,900	77.0%	1,391,800	62.3%	(81,900)
Lake Powell	12,824,100	52.7%	12,285,600	50.5%	491,200
Total	18,430,700	59.1%	17,751,600	56.9%	85,800

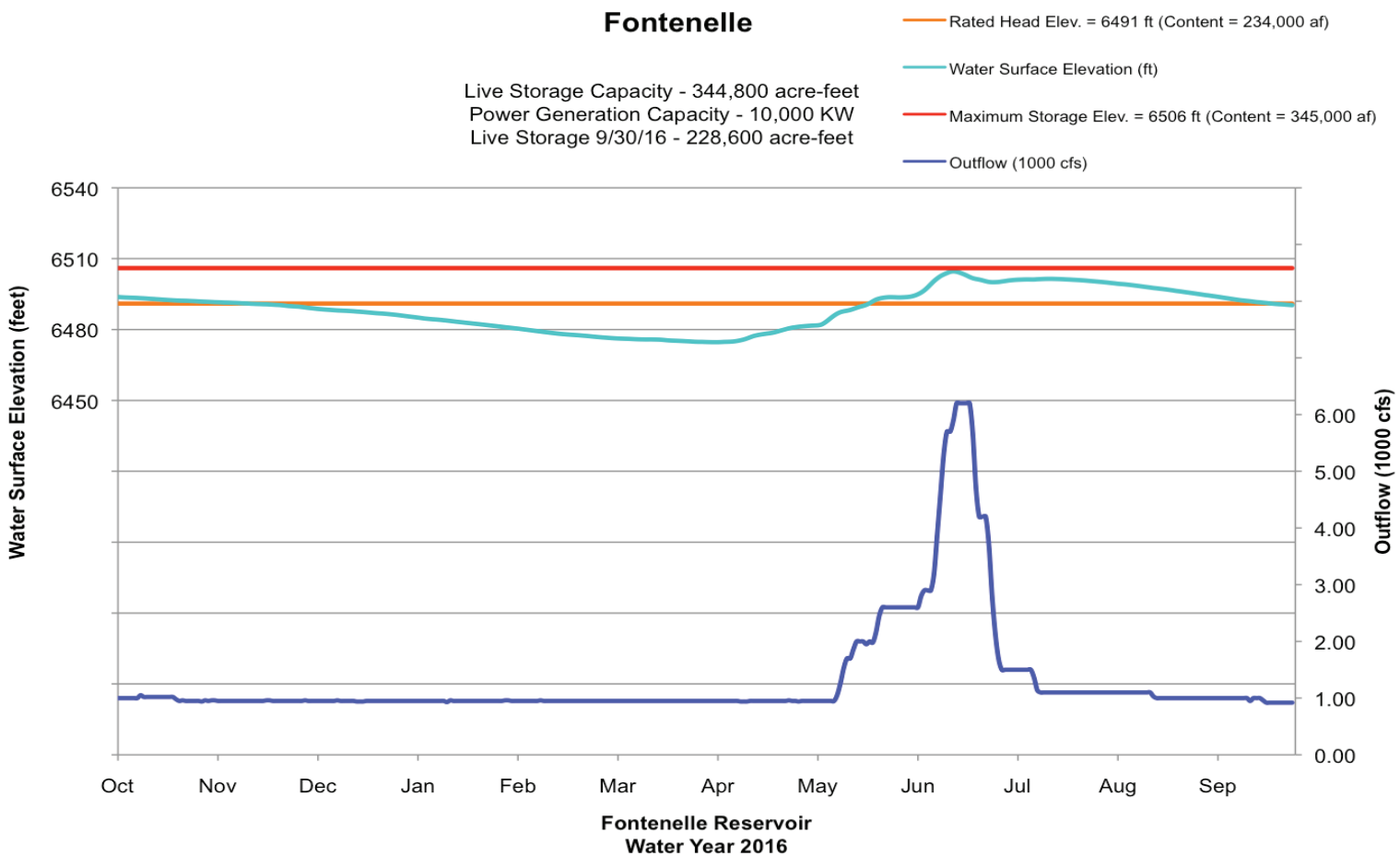


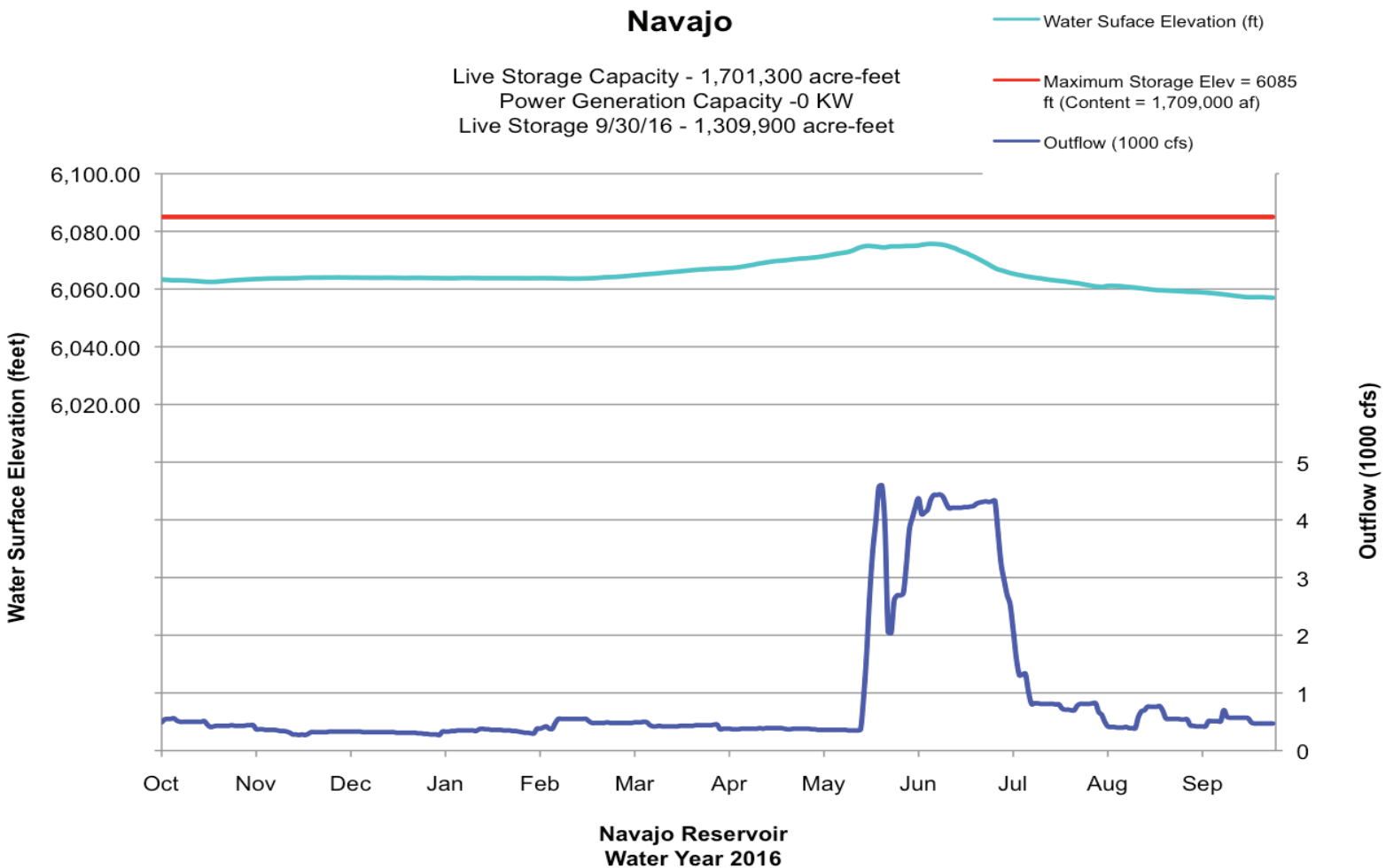
Lake Powell - Glen Cayon

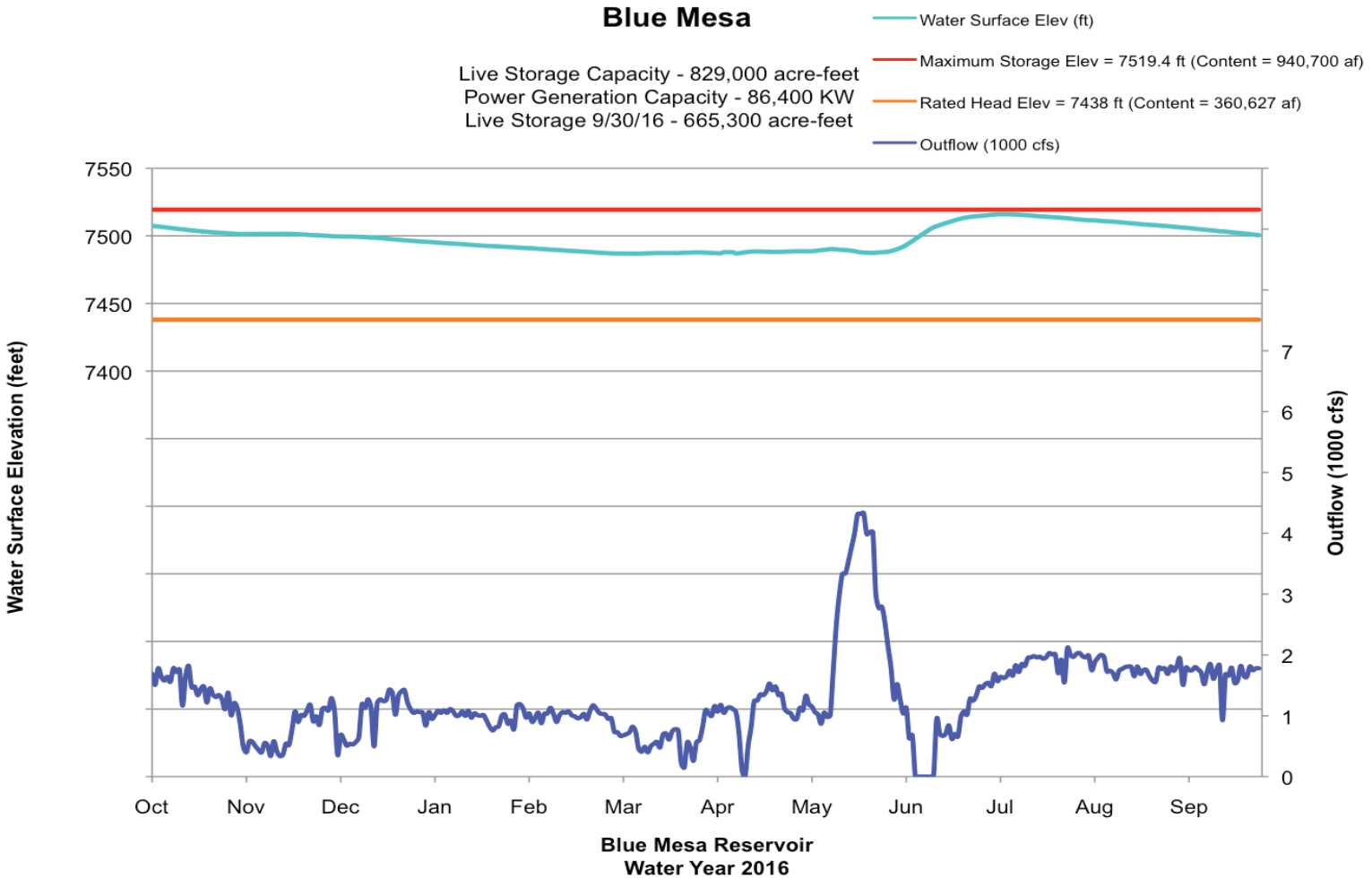
Live Storage Capacity - 24,322,000 acre-ft
Power Generation Capacity - 1,320,000 KW
Live Storage 9/30/16 - 12,824,100 acre-feet




Flaming Gorge
Live Storage Capacity - 3,749,000 acre-feet
Power Generation Capacity - 151,500 KW
Live Storage 9/30/16 - 3,207,400 acre-feet
Water Surface Elevation (ft)
Maximum Storage Elev = 6040 ft
(Content = 3,789,000 af)
Outflow (1000 cfs)
6,050.00
6,040.00
6,030.00
6,020.00
Water Surface Elevation (feet)
10.00
8.00
6.00
4.00
2.00
0.00
Outflow (1000 cfs)
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Flaming Gorge Reservoir
Water Year 2016

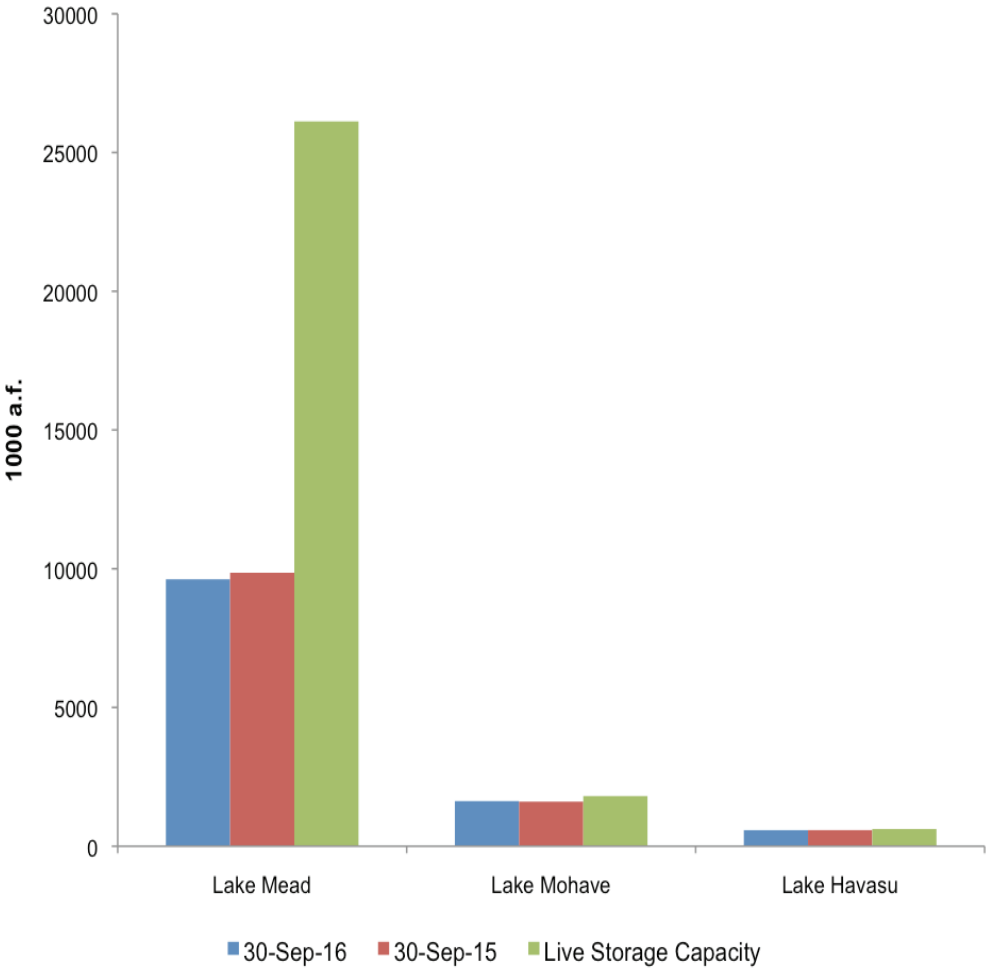

Fontenelle
Live Storage Capacity - 344,800 acre-feet
Power Generation Capacity - 10,000 KW
Live Storage 9/30/16 - 228,600 acre-feet
Rated Head Elev. = 6491 ft (Content = 234,000 af)
Water Surface Elevation (ft)
Maximum Storage Elev. = 6506 ft (Content = 345,000 af)
Outflow (1000 cfs)
Water Surface Elevation (feet)
6540
6510
6480
6450
Outflow (1000 cfs)
6.00
5.00
4.00
3.00
2.00
1.00
0.00
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Fontenelle Reservoir
Water Year 2016

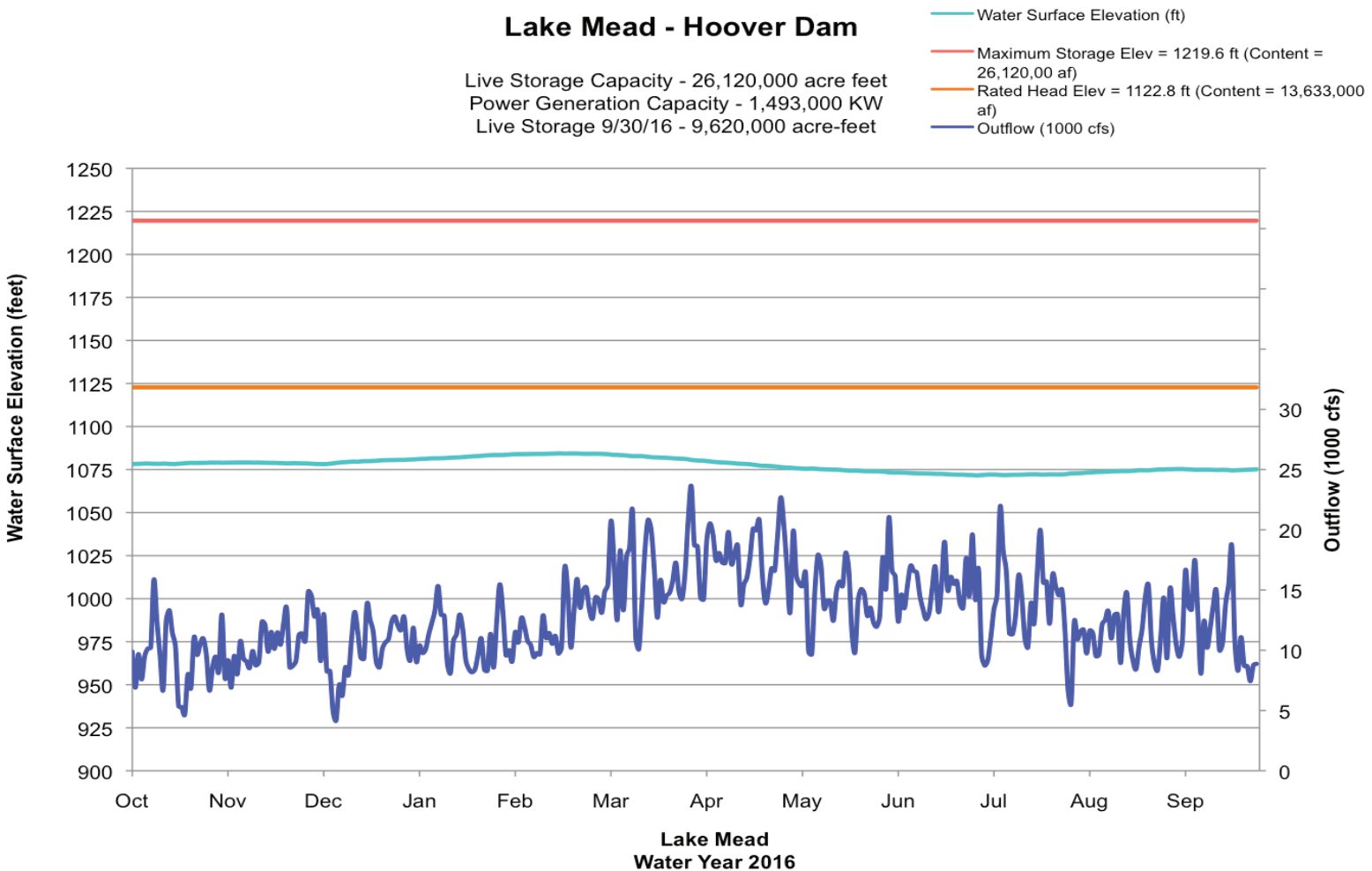

Navajo
Live Storage Capacity - 1,701,300 acre-feet
Power Generation Capacity -0 KW
Live Storage 9/30/16 - 1,309,900 acre-feet
Water Suface Elevation (ft)
Maximum Storage Elev = 6085 ft (Content = 1,709,000 af)
Outflow (1000 cfs)
6,100.00
6,080.00
6,060.00
6,040.00
6,020.00
Water Surface Elevation (feet)
5
4
3
2
1
0
Outflow (1000 cfs)
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Navajo Reservoir
Water Year 2016


Blue Mesa
Live Storage Capacity - 829,000 acre-feet
Power Generation Capacity - 86,400 KW
Live Storage 9/30/16 - 665,300 acre-feet
Water Surface Elev (ft)
Maximum Storage Elev = 7519.4 ft (Content = 940,700 af)
Rated Head Elev = 7438 ft (Content = 360,627 af)
Outflow (1000 cfs)
7550
7500
7450
7400
Water Surface Elevation (feet)
7
6
5
4
3
2
1
0
Outflow (1000 cfs)
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Blue Mesa Reservoir
Water Year 2016

Storage in Principle Reservoirs – End of Water Year 2016
Lower Basin
Live Storage Contents

Reservoir	Sept 30, 2016 (acre-feet)	Percent Live Capacity	Sept 30, 2015 (acre-feet)	Percent Live Capacity	Change in Contents (acre-feet)
Lake Mead	9,620,000	36.8%	9,854,000	37.7%	(234,000)
Lake Mohave	1,626,500	89.9%	1,605,800	88.8%	20,700
Lake Havasu	579,400	93.6%	580,700	93.8%	(1,300)
Total	11,825,900	41.4%	12,040,500	42.2%	(214,600)




Lake Mead - Hoover Dam
Live Storage Capacity - 26,120,000 acre feet
Power Generation Capacity - 1,493,000 KW
Live Storage 9/30/16 - 9,620,000 acre-feet
Water Surface Elevation (ft)
Maximum Storage Elev = 1219.6 ft (Content = 26,120,00 af)
Rated Head Elev = 1122.8 ft (Content = 13,633,000 af)
Outflow (1000 cfs)
Water Surface Elevation (feet)
Outflow (1000 cfs)
1250
1225
1200
1175
1150
1125
1100
1075
1050
1025
1000
975
950
925
900
30
25
20
15
10
5
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Lake Mead
Water Year 2016

with the ten-year period ending September 30, 1962, the commencement of storage in Colorado River Storage Project reservoirs, is shown in Column (3).

In each consecutive ten-year period, the total flow equaled or exceeded the 75,000,000 acre-feet required by the Compact. The flow at Lee Ferry during the ten-year period ending September 30, 2016 was 10,352,000 acre-feet. The graphs on pages 28 and29 illustrate some of the pertinent historical facts related to the amounts of water produced by the Colorado River System above Lee Ferry, Arizona, the compact division point between the Upper and Lower Colorado River Basins. The first graph on page 28 is entitled Colorado River Flow at Lee Ferry, Arizona. The top of each vertical bar represents the estimated virgin flow of the river, i.e., the flow of the river in millions of acre-feet past Lee Ferry for a given year had it not been depleted by activities of man. Each vertical bar has two components: The lower shaded part represents the estimated or measured historic flow at Lee Ferry, and the difference between the two sections of the bar in any given year represents the stream depletion, or the amount of water estimated to have been removed by man from the virgin supply upstream from Lee Ferry. It is worth noting that in 1977, and again in 1981, the historic flow at Lee Ferry exceeded the virgin flow. Beginning in 1962, part of this depletion at Lee Ferry was caused by the retention and storage of water in storage units of the Colorado River Storage Project. The horizontal line (at approximately 14.6 million acre-feet) shows the long-term average virgin flow from 1896 through 2016. Because the Colorado River Compact is administered based on running averages covering periods of ten years, the progressive ten-year average historic and virgin flows are displayed on this graph.

The second graph on page 29, entitled Lee Ferry Average Annual Virgin Flow for Selected Periods, is a graphical representation of historic and virgin flow averages for several periods of record. The periods of water years selected were those to which reference is usually made for various purposes in documents pertaining to the Colorado River System.

Several important hydrologic facts are apparent from these two graphs on pages 28 and 29.

(1) A vast majority of the high flows occurred prior to 1929.

(2) Since the 1924-1933 decade, the progressive ten-year average virgin flow has not exceeded the average virgin flow except in the 1941-1950 and the exceptionally wet 1975-1984 through 1984-1993 decades.

(3) For the period 1896-1921, which is prior to the Colorado River Compact of 1922, the average virgin flow was estimated to be 16.8 million acre-feet per year, which is considerably greater than for any other period selected, including the long-term average. A stream-gaging station at Lees Ferry, Arizona was not installed until 1921. Thus, the virgin flow at Lees Ferry prior to the 1922 Compact is estimated based upon records obtained at other stations, e.g. the stream gage on the Colorado River at Yuma, Arizona for the period 1902-1921.

(4) For the longest period shown, 1896-2016, the estimated average annual virgin flow is 14.6 million acre-feet, and the average annual historic flow is 11.7 million acre-feet.

(5) For the next longest period, 1906-2016, the estimated average annual virgin flow is 14.7 million acre-feet, and the average annual historic flow is 11.6 million acre-feet. Many of the early records for this series of years as well as for the 1896-2016 period are based upon the estimates of flows made at other gaging stations, as mentioned in (3) above. This average is about equal to the 15.0 million acre-feet estimated for the 1906-1967 period, which was used as the basis for justification of a water supply for the Central Arizona Project authorized in 1968.

(6) The estimated average annual virgin flow during the 1914-2016 periods is 14.4 million acre-feet. This period is an extension of the 1914-1965 period used in the Upper Colorado Region Comprehensive Framework studies of 1971. The average annual virgin flow for the 1914-1965 periods is 14.6 million acre-feet.

(7) The average annual virgin flow for the period 1914-1945 is 15.6 million acre-feet. This was the period of record used by the negotiators of the Upper Colorado River Basin Compact of 1948.

(8) For the period 1922-2016, which is the period of record since the signing of the Colorado River Compact, the average annual virgin flow is 14.1 million acre-feet, and the average annual historic flow is 10.7 million acre-feet. Records for this series of years are based upon actual measurements of flows at Lees Ferry. The ten-year moving average flow since 1922 is considerably less than the ten-year moving average flow prior to 1922.

(9) Two completely unrelated ten-year periods of minimum flows have occurred since 1930. During these periods, 1931-1940 and 1954-1963, the average annual virgin flow amounts to only 11.8 million acre-feet and 11.6 million acre-feet.

(10) For a 12-year period, 1953-1964, the average annual virgin flow amounts to only 11.6 million acre-feet.

(11) Since Glen Canyon Dam's closure in 1963, the estimated virgin flow for the subsequent 50 years is 14.2 million acre-feet. The estimated historical flow for the same period (1964-2016) is 9.7 million acre-feet.

4. Colorado River Salinity Program

The Upper Colorado River Commission has continued its interest and involvement in the Colorado River Basin salinity problem. The Commission advisors from the member states have worked with the Colorado River Basin Salinity Control Forum, which is composed of representatives from the seven Colorado River Basin States. The Forum has developed water quality standards and a plan of implementation to meet the Environmental Protection Agency Regulation (40 CFR Part 120 Water Quality Standards-Colorado River System: Salinity Control Policy and Standards Procedures).

Section 303 of the Clean Water Act requires that water quality standards be reviewed from time to time and at least once during each three-year period. The Forum in

2014 reviewed the existing State-adopted and Environmental Protection Agency-approved numeric salinity criteria and found no reason to recommend changes for the three lower mainstem stations which are as follows:

The values are:

	Salinity in (mg/l)
Below Hoover Dam	723
Below Parker Dam	747
Imperial Dam	879

It then updated its plan of implementation. The Forum has now begun its 2017 Review process. For several years, the States, the Upper Colorado River Commission and the Forum have been working with Reclamation as it has updated its river model that can reproduce flows and salinity concentrations of the past and predict probabilities of flows and salinity concentrations in the future. This model is used as a tool in preparation of the reviews.

The Salinity Control Program has been successful in implementing controls that have reduced the average concentrations at Imperial Dam by 90-100/L. The salinity standards are based on long-term average flows, and the river model can assist with the analysis of future salinity control needs. The 2014 Review recognized measures in place which control about 1.3 million tons of salt annually and the need to implement additional new measures which will control 67,000 tons annually be the end of the three-year review period and an additional 380,000 tons of control over current levels by the year 2035. The Salinity Control Program is not designed to offset short-term variances caused by short-term hydrologic variances from the norm.

Table 3
ESTIMATED VIRGIN FLOW AT LEE FERRY
(million acre-feet)

(1) Years to 2016	(2) Year Ending Sept. 30	(3) Estimated Virgin Flow	(4) Average to 2016	(5) Average Since 1896	(6) Progressive 10-year Moving Average	(7) Virgin Flow Minus 120-year Average
121	1896	10.1	14.6	10.1		-4.5
120	1897	18.0	14.7	14.1		3.4
119	1898	13.8	14.7	14.0		-0.8
118	1899	15.9	14.7	14.5		1.3
117	1900	13.2	14.7	14.2		-1.4
116	1901	13.6	14.7	14.1		-1.0
115	1902	9.4	14.7	13.4		-5.2
114	1903	14.8	14.7	13.6		0.2
113	1904	15.6	14.7	13.8		1.0
112	1905	16.0	14.7	14.0	14.0	1.4
111	1906	19.1	14.7	14.5	14.9	4.5
110	1907	23.4	14.7	15.2	15.5	8.8
109	1908	12.9	14.6	15.1	15.4	-1.7
108	1909	23.3	14.6	15.7	16.1	8.7
107	1910	14.2	14.5	15.6	16.2	-0.4
106	1911	16.0	14.5	15.6	16.5	1.4
105	1912	20.5	14.5	15.9	17.6	5.9
104	1913	14.5	14.4	15.8	17.6	-0.1
103	1914	21.2	14.4	16.1	18.1	6.6
102	1915	14.0	14.4	16.0	17.9	-0.6
101	1916	19.2	14.4	16.1	17.9	4.6
100	1917	24.0	14.3	16.5	18.0	9.4
99	1918	15.4	14.2	16.4	18.2	0.8
98	1919	12.5	14.2	16.3	17.2	-2.1
97	1920	22.0	14.2	16.5	17.9	7.4
96	1921	23.0	14.2	16.8	18.6	8.4
95	1922	18.3	14.1	16.8	18.4	3.7
94	1923	18.3	14.0	16.9	18.8	3.7
93	1924	14.2	14.0	16.8	18.1	-0.4
92	1925	13.0	14.0	16.6	18.0	-1.6
91	1926	15.9	14.0	16.6	17.7	1.3
90	1927	18.6	14.0	16.7	17.1	4.0
89	1928	17.3	13.9	16.7	17.3	2.7
88	1929	21.4	13.9	16.8	18.2	6.8
87	1930	14.9	13.8	16.8	17.5	0.3
86	1931	7.8	13.8	16.5	16.0	-6.8
85	1932	17.2	13.8	16.6	15.9	2.6
84	1933	11.4	13.8	16.4	15.2	-3.2
83	1934	5.6	13.8	16.1	14.3	-9.0
82	1935	11.6	13.9	16.0	14.2	-3.0
81	1936	13.8	14.0	16.0	14.0	-0.8
80	1937	13.7	14.0	15.9	13.5	-0.9
79	1938	17.5	14.0	16.0	13.5	2.9
78	1939	11.1	13.9	15.8	12.5	-3.5
77	1940	8.6	14.0	15.7	11.8	-6.0
76	1941	18.1	14.0	15.7	12.9	3.5
75	1942	19.1	14.0	15.8	13.1	4.5
74	1943	13.1	13.9	15.7	13.4	-1.5
73	1944	15.2	13.9	15.7	14.1	0.6
72	1945	13.4	13.9	15.7	14.4	0.6
71	1946	10.4	13.9	15.6	14.0	-1.2
70	1947	15.5	14.0	15.6	14.2	-4.2
69	1948	15.6	13.9	15.6	14.0	0.9
68	1949	16.4	13.9	15.6	14.5	1.8
67	1950	12.9	13.9	15.6	15.0	-1.7
66	1951	11.6	13.9	15.5	14.3	-3.0
65	1952	20.7	13.9	15.6	14.5	6.1
64	1953	10.6	13.8	15.5	14.2	-4.0
63	1954	7.7	13.9	15.4	13.5	-6.9
62	1955	9.2	14.0	15.3	13.1	-5.4
61	1956	10.7	14.0	15.2	13.1	-3.9
60	1957	20.1	14.1	15.3	13.6	5.5
59	1958	16.5	14.0	15.3	13.6	1.9
58	1959	8.6	13.9	15.2	12.9	-6.0

Table 3
ESTIMATED VIRGIN FLOW AT LEE FERRY
(million acre-feet)

(1) Years to 2016	(2) Year Ending Sept. 30	(3) Estimated Virgin Flow	(4) Average to 2016	(5) Average Since 1896	(6) Progressive 10-year Moving Average	(7) Virgin Flow Minus 114-year Average
57	1960	11.3	14.0	15.1	12.7	-3.3
56	1961	8.5	14.1	15.0	12.4	-6.1
55	1962	17.3	14.2	15.0	12.1	2.7
54	1963	8.4	14.1	15.0	11.8	-6.2
53	1964	10.2	14.2	14.9	12.1	-4.4
52	1965	18.9	14.3	14.9	13.1	4.3
51	1966	11.2	14.2	14.9	13.1	-3.4
50	1967	11.9	14.3	14.8	12.3	-2.7
49	1968	13.7	14.3	14.8	12.0	-0.9
48	1969	14.4	14.4	14.8	12.6	-0.2
47	1970	15.4	14.4	14.8	13.0	0.8
46	1971	15.1	14.3	14.8	13.7	0.5
45	1972	12.2	14.3	14.8	13.1	-2.4
44	1973	19.4	14.4	14.9	14.2	4.8
43	1974	13.3	14.3	14.8	14.6	-1.3
42	1975	16.6	14.3	14.9	14.3	2.0
41	1976	11.6	14.2	14.8	14.4	-3.0
40	1977	5.8	14.3	14.7	13.8	-8.8
39	1978	15.2	14.5	14.7	13.9	0.6
38	1979	17.9	14.5	14.8	14.3	3.3
37	1980	17.5	14.4	14.8	14.5	2.9
36	1981	8.2	14.3	14.7	13.8	-6.4
35	1982	16.2	14.5	14.7	14.2	1.6
34	1983	24.0	14.4	14.8	14.6	9.4
33	1984	24.5	14.1	14.9	15.8	9.9
32	1985	20.8	13.8	15.0	16.2	6.2
31	1986	21.9	13.6	15.1	17.2	7.3
30	1987	16.9	13.3	15.1	18.3	2.3
29	1988	11.5	13.1	15.1	17.9	-3.1
28	1989	9.4	13.2	15.0	17.1	-5.2
27	1990	8.6	13.4	14.9	16.2	-6.0
26	1991	12.3	13.5	14.9	16.6	-2.3
25	1992	11.0	13.6	14.9	16.1	-3.6
24	1993	18.5	13.7	14.9	15.5	3.9
23	1994	10.4	13.5	14.9	14.1	-4.2
22	1995	19.7	13.6	14.9	14.0	5.1
21	1996	13.8	13.3	14.9	13.2	-0.8
20	1997	21.0	13.3	15.0	13.6	6.4
19	1998	16.8	12.9	15.0	14.2	2.2
18	1999	16.1	12.7	15.0	14.8	1.5
17	2000	10.3	12.4	14.9	15.0	-4.3
16	2001	10.9	12.6	14.9	14.9	-3.7
15	2002	5.5	12.7	14.8	14.3	-9.1
14	2003	10.5	13.3	14.8	13.5	-4.1
13	2004	9.1	13.5	14.7	13.4	-5.5
12	2005	17.0	13.9	14.7	13.1	2.4
11	2006	13.1	13.6	14.7	13.0	-1.5
10	2007	12.5	13.6	14.7	12.2	-2.1
9	2008	16.4	13.8	14.7	12.1	1.8
8	2009	14.3	13.4	14.7	12.0	-0.3
7	2010	12.9	13.2	14.7	12.2	-1.7
6	2011	20.4	13.3	14.8	13.2	5.8
5	2012	8.1	11.5	14.7	13.4	-6.5
4	2013	9.1	12.7	14.6	13.3	-5.6
3	2014	14.8	14.5	14.7	13.9	0.1
2	2015	14.2	14.2	14.6	13.6	-0.4
1	2016	14.0	14.0	14.6	13.7	-0.6
Maximum		24.5			18.8	9.9
Minimum		5.5			11.8	-9.1
Average		14.6			14.7	0.0

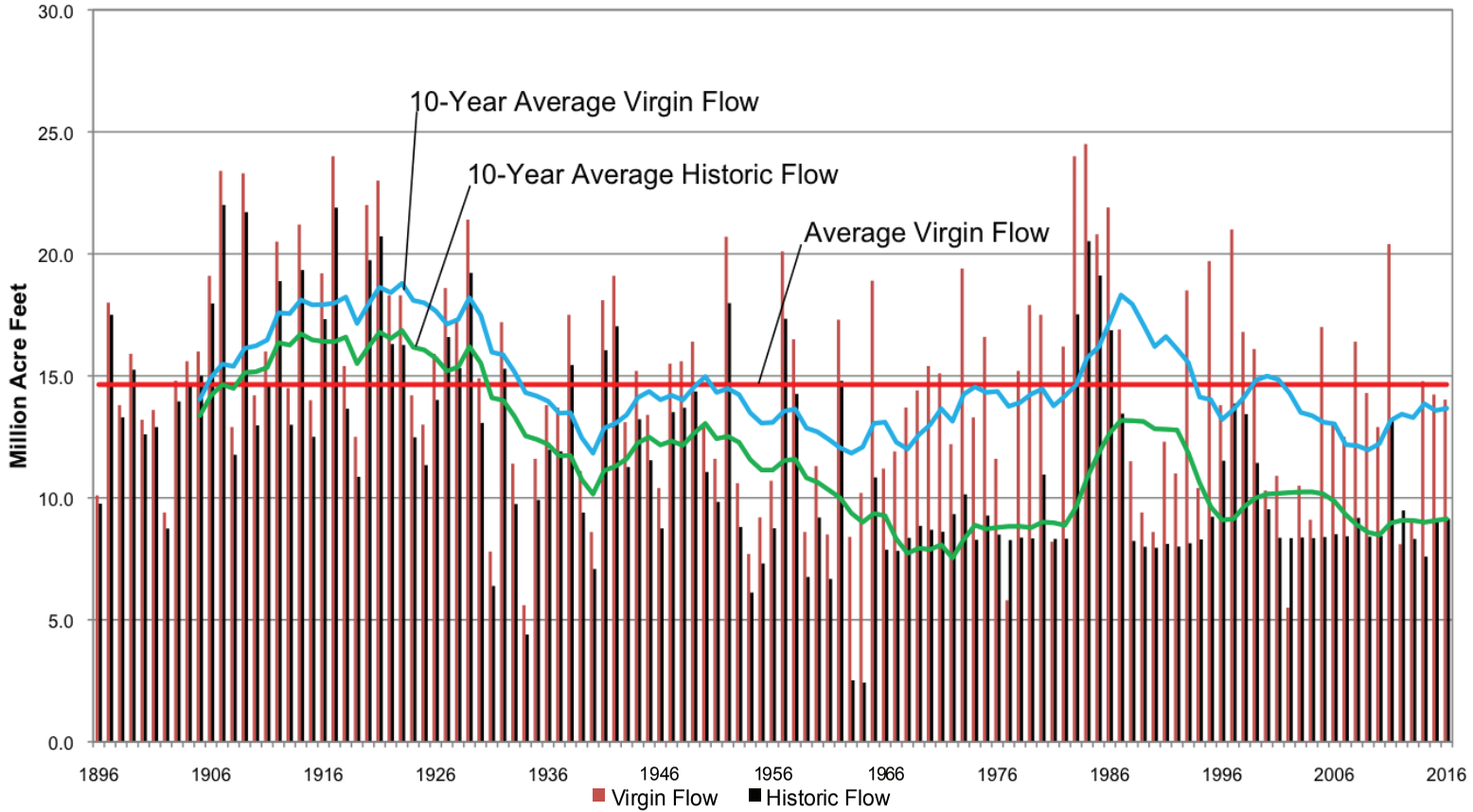
Table 4
HISTORIC FLOW AT LEE FERRY
1954-2016

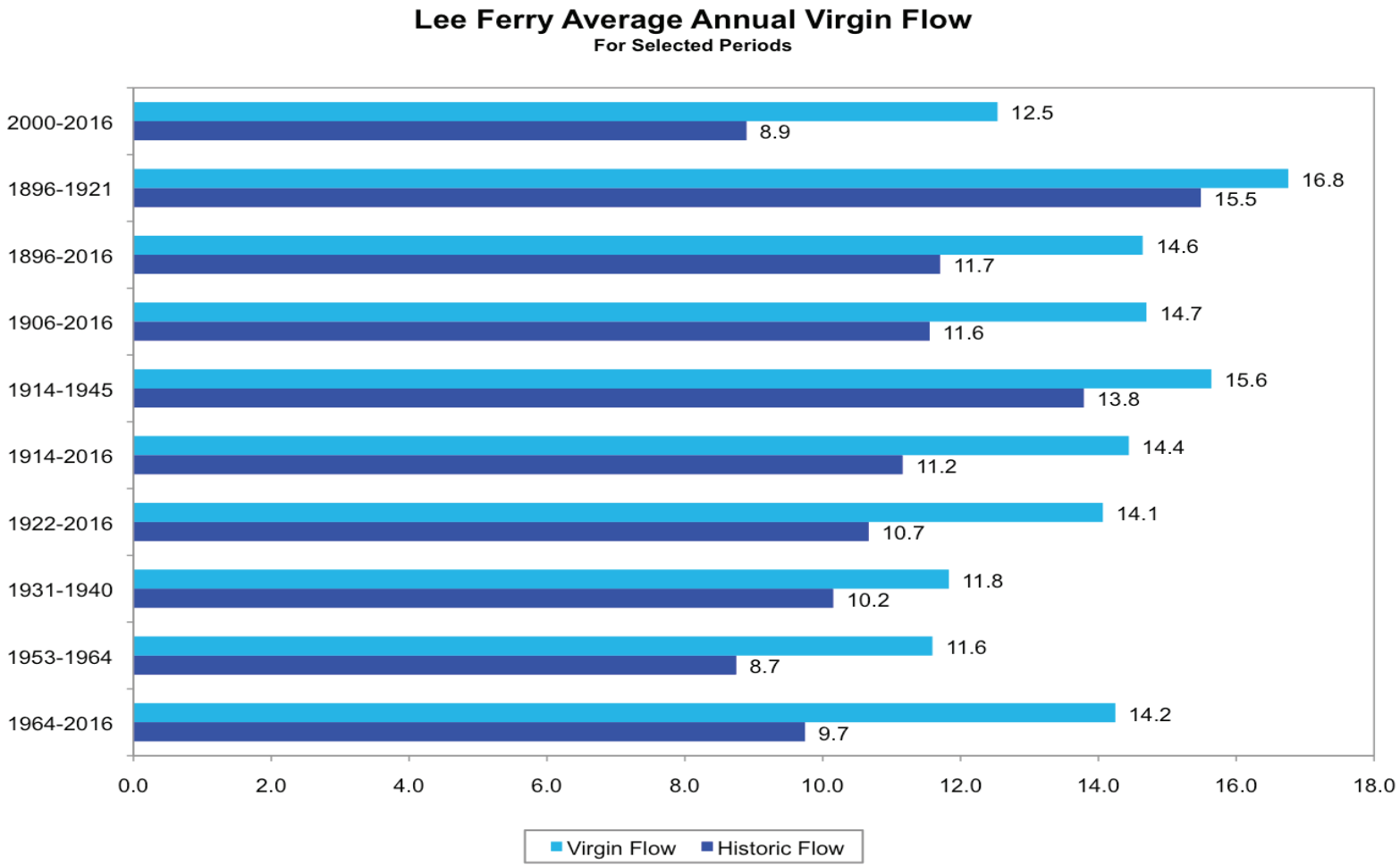
Water Year Ending Sept. 30	Historic Flow (1,000 a.f.)	Progressive 10- Year Total (1,000 a.f.)
1954	6,116	
1955	7,307	
1956	8,750	
1957	17,340	
1958	14,260	
1959	6,756	
1960	9,192	
1961	6,674	
1962	14,790	
1963	2,520	93,705
1964	2,427	90,016
1965	10,835	93,544
1966	7,870	92,664
1967	7,824	83,148
1968	8,358	77,246
1969	8,850	79,340
1970	8,688	78,836
1971	8,607	80,769
1972	9,330	75,309
1973	10,141	82,930
1974	8,277	88,780
1975	9,274	87,219
1976	8,494	87,843
1977	8,269	88,288
1978	8,369	88,299
1979	8,333	87,782
1980	10,950	90,044
1981	8,316	89,753
1982	8,323	88,746
1983	17,520	96,125
1984	20,518	108,366
1985	19,109	118,201
1986	16,866	126,573
1987	13,450	131,754
1988	8,160	131,545
1989	7,995	131,207
1990	8,125	128,382
1991	8,132	128,198
1992	8,023	127,898
1993	8,137	118,515
1994	8,306	106,303
1995	9,242	96,436
1996	11,530	91,100
1997	13,873	91,523
1998	13,441	96,804
1999	11,540	100,349
2000	9,530	101,754
2001	8,361	101,983
2002	8,348	102,308
2003	8,372	102,543
2004	8,348	102,585
2005	8,395	101,738
2006	8,508	98,716
2007	8,422	93,265
2008	9,180	89,004
2009	8,406	85,870
2010	8,436	84,777
2011	13,227	89,643
2012	9,534	90,829
2013	8,289	90,746
2014	7,590	89,988
2015	9,157	90,750
2016	9,138	91,380

Storage in Flaming Gorge Reservoir began in 1962.
Storage in Glen Canyon Reservoir began in 1963.
Storage in Fontenelle Reservoir began in 1964.

Based upon provisional streamflow records subject to revision.*

Colorado River Flow
At Lee Ferry, Arizona (W.Y. 2016)




Lee Ferry Average Annual Virgin Flow
For Selected Periods
2000-2016
1896-1921
1896-2016
1906-2016
1914-1945
1914-2016
1922-2016
1931-1940
1953-1964
1964-2016
12.5
8.9
16.8
15.5
14.6
11.7
14.7
11.6
15.6
13.8
14.4
11.2
14.1
10.7
11.8
10.2
11.6
8.7
14.2
9.7
0.0
2.0
4.0
6.0
8.0
10.0
12.0
14.0
16.0
18.0
Virgin Flow
Historic Flow

B. LEGAL

1. Water Newsletter

The legal staff continues to inform the Commissioners, their advisers and other interested parties about developments in the courts, Congress and certain Federal agencies through the Water Newsletter. Current information can be found in the newsletter. In addition, the legal staff has prepared legal memoranda on matters needing more detailed treatment.

2. Court Cases

Action was taken in the following case of importance to the Upper Colorado River Basin States:

United States Army Corps of Engineers v. Hawkes Co., Inc., et al., 578 U. S. ___, 136 S.Ct. ___, 195 L.Ed.2d 77, 2016 U. S. Lexis 3489.

The Clean Water Act regulates "the discharge of any pollutant" into "the waters of the United States." 33 U.S.C. §§ 1311(a), 1362(7), (12). When property contains such waters, landowners who discharge pollutants without a permit from the Army Corps of Engineers (Corps or petitioners) risk substantial criminal and civil penalties, §§ 1319 (c), (d), while those who do apply for a permit face a process that is often arduous, expensive and long. However, it can be difficult to determine in the first place whether "waters of the United States" are present. Because of that difficulty, the Corps allows property owners to obtain a standalone "jurisdictional determination" (JD) specifying whether a particular property contains "waters of the United States." §331.2. A JD may be either "preliminary," advising a property owner that such waters "may" be present, or "approved," definitively "stating the presence or absence" of such waters. An "approved" JD is considered an administratively appealable "final agency action," §§ 320.1(a)(6), 331.2, and is binding for five years on both the Corps and the Environmental Protection Agency (EPA).

Respondents in this case are three companies engaged in mining peat. They sought a permit from the Corps to discharge material onto wetlands located on property that respondents own and hope to mine. In connection with the permitting process, respondents obtained an approved JD from the Corps stating that the property contained "waters of the United States" because its wetlands had a "significant nexus" to the Red River of the North, located some 120 miles away. After they exhausted their administrative remedies, respondents sought review of the approved JD in Federal District Court under the Administrative Procedure Act (APA). The District Court dismissed for want of subject matter jurisdiction, holding that the revised JD was not "final agency action for which there is no other adequate remedy in a court," as required by the APA prior to judicial review. The Court of Appeals for the Eighth Circuit reversed, and the U. S. Supreme Court granted certiorari.

In *Bennett v. Spear*, the Supreme Court "distilled from [its] precedents" two conditions that generally must be satisfied for agency action to be "final" under the APA: "First, the action must mark the consummation of the agency's decisionmaking process–it must not be of a merely tentative or interlocutory nature. And second, the action must be one by which rights or obligations have been determined, or from which legal consequences will flow," 520 U.S. 154, at 177-178. The Corps does not

dispute that an approved JD satisfies the first *Bennett* condition. Unlike preliminary JDs, which are "advisory in nature" and simply indicate that "there may be waters of the United States on a parcel of property," 33 CFS §331.2, an approved JD clearly "mark[s] the consummation" of the Corps' decisionmaking process on that question, *Bennett*, 520 U.S. at 178. The Corps itself describes approved JDs as "final agency action" and specifies that an approved JD "will remain valid for a period of five years," Corps, Regulatory Guidance Letter No. 05-02, § 1(a), p. 1 (June 14, 2005). The definitive nature of approved JDs also gives rise to "direct and appreciable legal consequences," thereby satisfying the second prong of Bennett. A "negative" JD, an approved JD stating that property does not contain jurisdictional waters, creates a five-year safe harbor from civil enforcement proceedings brought by the Government and limits the potential liability a property owner faces for violating the Clean Water Act. Each of those effects is a legal consequence. It follows that an "affirmative" JD, like the one issued to respondents in this case, also has legal consequences, because it deprives property owners of the five-year safe harbor that "negative" JDs afford. This conclusion tracks the "pragmatic" approach the Supreme Court has long taken to finality. *Abbott Laboratories v. Gardner*, 387 U.S. 136, 149.

Even if final, an agency action is reviewable under the APA only if there are no adequate alternatives to APA review in court. 5 U.S.C. § 704. Petitioners in this case contend that respondents have two such alternatives, either discharge fill material without a permit, risking an EPA enforcement action during which they can argue that no permit was required, or apply for a permit and seek judicial review if they are dissatisfied with the results. The Supreme Court holds that neither alternative is adequate. Parties do not have to wait for enforcement proceedings before challenging final agency action where such proceedings carry the risk of "serious criminal and civil penalties" *Abbott*, 387 U.S. at 153. The permitting process is not only costly and lengthy, but it is also irrelevant to the finality of the approved JD and its suitability for judicial review. The Court also finds that because the Clean Water Act makes no reference to standalone jurisdictional determinations, there is little basis for inferring anything from it concerning their reviewability. Given the APA's presumption of reviewability for all final agency action, the mere fact that permitting decisions are reviewable is insufficient to imply exclusion of other agency actions, such as approved JDs. Based on this reasoning, the Supreme Court affirms the decision of the Eighth Circuit.

3. Legislation

In the Second Session of the 114th Congress, Congress enacted the following statute that is important to the Upper Colorado River Basin States:

Public Law 114-254, approved December 10, 2016, the "Further Continuing and Security Assistance Appropriations Act, 2017."

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COLORADO RIVER STORAGE PROJECT AND PARTICIPATING PROJECTS

A. AUTHORIZED STORAGE UNITS

Information relative to storage units and participating projects has been provided by the United States Department of the Interior, Bureau of Reclamation.

The guiding force behind development and management of water in the Upper Basin is the Colorado River Storage Project (CRSP). Authorized by the Colorado River Storage Project Act of 1956 (Public Law 485, 84th Congress, 70 Stat 105), the CRSP allows for the comprehensive development of water resources of the Upper Basin states by providing for long-term regulatory storage of water to meet the entitlements of the Lower Basin. The CRSP is one of the most complex and extensive river resource developments in the world and was integral to the development of the arid West.

Four storage units were authorized by the 1956 Act: the Glen Canyon Unit on the Colorado River in Arizona and Utah; the Flaming Gorge Unit on the Green River in Utah and Wyoming; the Navajo Unit on the San Juan River in Colorado and New Mexico; and the Wayne N. Aspinall Unit, formerly named the Curecanti Unit and rededicated in July 1981, on the Gunnison River in Colorado. The Aspinall Unit consists of Blue Mesa, Morrow Point, and Crystal dams and reservoirs. Combined, the four main storage units provide about 30.6 million acre-feet of live water storage capacity. The initial CRSP Act of 1956 also authorized the construction of 11 participating projects. Additional participating projects have been authorized by subsequent Congressional legislation.

Key benefits of the CRSP include regulating the flow of the Colorado River, storing water for beneficial consumptive use, providing for reclamation of arid and semi-arid lands, providing flood control, providing recreation, and generating clean and renewable hydroelectric power. Benefits are also provided for fish and wildlife needs and other environmental considerations per the Colorado River Basin Project Act of 1968, National Environmental Policy Act of 1969, Endangered Species Act of 1973, and Grand Canyon Protection Act of 1992.

The CRSP storage units and authorized participating projects are described in this 68th report and earlier annual reports of the Upper Colorado River Commission. Progress on construction along with updates on operation and maintenance, power generation, recreational use, planning investigation activities, reservoir operations, and appropriations of funds for the storage units and participating projects accomplished during the past water year (October 1, 2015, to September 30, 2016), fiscal year (October 1, 2015, to September 30, 2016), and calendar year (2016) are outlined below. Significant upcoming or projected information is also included for some storage units and projects.

1. Glen Canyon Unit

Glen Canyon Dam and reservoir (Lake Powell) comprises the key storage unit of the CRSP and is the largest of the initial four, providing about 80 percent of the storage and generating capacity. Construction of the dam was completed in 1963. In addition to water storage for flood control and consumptive uses, Glen Canyon Dam was built as a hydroelectric power generation facility.

At optimum operations, the eight generators at Glen Canyon Dam are capable of producing 1,320 megawatts of power. Water is drawn into the power penstock intakes about 200-230 feet below the surface of Lake Powell at full pool, which results in clear cold water with year-round temperatures of 45 to 50 degrees F being released from Glen Canyon Dam. During protracted droughts, such as has occurred from 2000-2016, Lake Powell elevations decline to levels where warmer water is drawn through the penstocks and released downstream.

Since the damming of the river in 1963, there has been only one flow release that approached average pre-dam spring floods. In 1983, a combination of unanticipated hydrologic events in the Upper Colorado River Basin, combined with a lack of available storage space in Lake Powell, resulted in emergency releases from Glen Canyon Dam that reached 93,000 cubic feet per second (cfs). Except for the flood events of the mid-1980s, historic daily releases prior to the preparation of the final 1995 Glen Canyon Dam environmental impact statement (EIS) generally ranged between 1,000 cfs and 25,000 cfs, with flows averaging between 5,000 cfs and 20,000 cfs.

As a result of the construction and operation of Glen Canyon Dam, the Colorado River ecosystem below the dam has changed significantly from its pre-dam natural character. In addition, the dam's highly variable flow releases from 1964 to 1991 caused concern over resource degradation resulting from dam operations. Because of these concerns, the Secretary of the Interior (Secretary) adopted interim operating criteria in October 1991 that narrowed the range of daily powerplant fluctuations.

Responding to concerns that changes to the Colorado River ecosystem were resulting from dam operations, Reclamation launched the Glen Canyon Environmental Studies program in 1982. The research program's first phase (1982-1988) focused on developing baseline resource assessments of physical and biotic resources. The second phase (1989-1996) introduced experimental dam releases and expanded research programs in native and non-native fishes, hydrology and aquatic habitats, terrestrial flora and fauna, cultural and ethnic resources, and social and economic impacts.

By the late 1980s, sufficient knowledge had been developed to raise concerns that downstream impacts were occurring, and that additional information needed to be developed to quantify the effects and to develop management actions that could avoid and/or mitigate the impacts. This collective information, and other factors, led to a July 1989 decision by the Secretary to direct Reclamation to prepare an EIS on the operation of Glen Canyon Dam. The intent was to evaluate alternative dam operation strategies to lessen the impacts of operations on downstream resources.

In October 1992, the President signed into law the Reclamation Projects Authorization and Adjustment Act, Public Law (P.L.) 102-575. Responding to continued concerns over potential impacts of Glen Canyon Dam operations on downstream resources, Congress included the Grand Canyon Protection Act (GCPA) as Title 18 of this Act. Section 1802(a) of the GCPA requires the Secretary to operate Glen Canyon Dam:

> . . . in accordance with the additional criteria and operating plans specified in Section 1804 and exercise other authorities under existing law in such a manner as to protect, mitigate adverse impacts to, and improve the values for which Grand Canyon National Park and Glen Canyon National Recreation Area were established, including, but not limited to natural and cultural resources and visitor use.

The GCPA directs the Secretary to implement this section in a manner fully consistent with all existing laws that govern allocation, appropriation, development, and exportation of the waters of the Colorado River Basin.

Section 1804 of the GCPA required preparation of an EIS, adoption of operating criteria and plans, reports to Congress, and allocation of costs. The Operation of Glen Canyon Dam Final Environmental Impact Statement was filed with the Environmental Protection Agency in March 1995 and a Record of Decision (ROD) was signed in October 1996. Following the signing of the ROD, the Secretary adopted a formal set of operating criteria (February 1997) and the 1997 Annual Plan of Operations. This action terminated the 1991 interim operating criteria.

The signing of the 1996 ROD began a new chapter in the history of Glen Canyon Dam. In addition to meeting traditional water and power needs, the dam was now being operated in a more environmentally sensitive manner. The EIS process demonstrated the value of a cooperative, integrative approach to dealing with complex environmental issues. The inclusion of stakeholders resulted in a process that served to guide future operations of Glen Canyon Dam and became a template for other river systems.

a. Adaptive Management

The Glen Canyon Dam Adaptive Management Program (AMP) was implemented following the 1996 Record of Decision on the Operation of Glen Canyon Dam Final Environmental Impact Statement (FEIS) to comply with consultation requirements of the Grand Canyon Protection Act of 1992. The 2016 ROD for the Glen Canyon Dam Long-Term Experimental and Management Plan FEIS confirmed the continuation of the AMP. The AMP provides an organization and process to ensure the use of scientific information in decision making for Glen Canyon Dam operations and protection of downstream resources consistent with the GCPA.

The AMP includes the Adaptive Management Work Group (AMWG) federal advisory committee, Secretary's Designee, Technical Work Group, U.S. Geological Survey's Grand Canyon Monitoring and Research Center, and independent scientific review panels. Department of the Interior Regional Directors also facilitate communication and cooperation in the AMP. The program is primarily funded by hydropower revenues. A major initiative of the AMP is developing a set of desired future conditions for important resources within the Glen Canyon National Recreational Area and Grand Canyon National Park that will provide opportunities to balance the competing demands on dam operations. The AMWG makes recommendations to the Secretary of the Interior on dam operations and other management actions that will likely meet those objectives.

A diverse group of 25 stakeholders comprises the AMP and each has a voice in formal recommendations. AMP stakeholders have divergent views on the interpretation of the GCPA, particularly with regard to how it may or may not amend previous statutes related to the operation of Glen Canyon Dam. While each stakeholder represents their own interests, they also work together for the common good of protecting the ecosystem downstream from Glen Canyon Dam and meeting provisions of the GCPA, Endangered Species Act, National Historic Preservation Act, and other applicable federal laws.

b. Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead

Against the backdrop of the worst drought in over a century on the Colorado River, and pursuant to a Secretarial directive to finish this effort by 2007, Reclamation

worked through a National Environmental Policy Act process to develop interim operational guidelines for Lake Powell and Lake Mead to address drought and low reservoir conditions. These operational guidelines provide Colorado River water users and managers in the United States a greater degree of certainty about how the two large reservoirs on the Colorado River will be operated under low water conditions, and when – and by how much – water deliveries will be reduced in the Lower Basin to the states of Arizona, California, and Nevada in the event of drought or other low reservoir conditions. In a separate, cooperative process, Reclamation worked through the State Department to consult with Mexico regarding potential water delivery reductions to Mexico under the 1944 Treaty with the United States.

A Record of Decision was signed by the Secretary of the Interior in December 2007. The ROD implements the interim operational guidelines that will be in place through 2026. The key components of the guidelines are: (1) a shortage strategy for Lake Mead and the Lower Division states, (2) coordinated operations of Lakes Powell and Mead through a full-range of operations, (3) a mechanism for the creation and delivery of conserved system and non-system water in Lake Mead (Intentionally Created Surplus), and (4) the modification and extension of the existing Interim Surplus Guidelines.

c. Record of Decision for the Glen Canyon Dam Long-Term Experimental and Management Plan (LTEMP) Final Environmental Impact Statement

On December 17, 2010, the Secretary of the Interior announced at the annual conference of the Colorado River Water Users Association the initiation of efforts to work with stakeholders on the development of a Long-Term Experimental and Management Plan for Glen Canyon Dam. A Notice of Intent was published in the *Federal Register* on July 6, 2011, that identified Reclamation and the National Park Service as co-leads in keeping with their respective authorities for dam operations and park management. Public scoping was completed early in 2012.

The draft EIS was filed with the Environmental Protection Agency on January 8, 2016, and a 122-day public comment period closed on May 9, 2016. The LTEMP FEIS was published on October 7, 2016, and the LTEMP Record of Decision was signed by Secretary Jewell on December 15, 2016.

The purpose of the LTEMP is to make use of our scientific understanding of the ecosystem downstream from Glen Canyon Dam to protect, mitigate adverse effects to and improve important downstream resources, while maintaining compliance with relevant laws including the Grand Canyon Protection Act, “Law of the River,” and the Endangered Species Act. The EIS process involved extensive coordination with 15 cooperating agencies (including six tribes). A primary function of the LTEMP EIS is to continue successful experimentation under the Glen Canyon Dam Adaptive Management Program.

Dam operations and other actions under the jurisdiction of the Secretary were considered in the LTEMP EIS alternatives that are consistent with the scope of the GCPA. The EIS identified a preferred alternative, which was developed later in the EIS process by combining attributes of the existing alternatives to achieve the best balance of resources given the purpose and need for the EIS. The preferred alternative has frequent high-flow experiments, more equal monthly release volumes than the No Action Alternative, and several new fish management tools. It is expected to improve sediment conditions below the dam and have slightly positive effects to endangered fish (humpback chub), improve vegetation and cultural resources, and

have slightly negative impacts to hydropower (approximately 0.17% increase in cost). The LTEMP ROD selected the FEIS preferred alternative, without modification. The ROD specifies a phased implementation, with LTEMP monthly volumes beginning January 1, 2017, and experiments beginning after October 1, 2017.

The LTEMP EIS five-year development process included extensive stakeholder outreach and consultation. Stakeholder involvement through the scoping process, draft EIS review period, and subsequent outreach efforts was instrumental in assuring a full range of alternatives. The EIS and ROD will provide a comprehensive framework for adaptively managing Glen Canyon Dam over the next 20 years consistent with the GCPA and other provisions of applicable federal law. The LTEMP includes a communication and consultation process that ensures input and consultation with stakeholders throughout the 20-year implementation.

d. Drought Contingency Planning

The Upper and Lower Colorado River Basin states were tasked by the Secretary of the Interior in June 2013 to develop drought contingency plans. Since that time, states in the two basins have been working separately, but in coordination with Reclamation, to develop these plans. The Upper Basin Plan is aimed at reducing the risk of losing power generation at Glen Canyon Dam and maintaining the ability to meet a Colorado River Compact call, which would require the Upper Basin to release additional water to the Lower Basin under the Compact. The Upper Basin Plan includes three major components: (1) drought operations of initial unit CRSP reservoirs above Lake Powell designed to release water to Lake Powell when it is projected to reach critically low elevations; (2) voluntary demand management (e.g., reduction of diversion or consumptive use) and possible banking of conserved water in CRSP reservoirs; and (3) augmentation (primarily weather modification and cloud seeding). A situation where Lake Powell would drop to critical power generation elevation and require implementation of the Upper Basin Plan is a low probability, but would have significant impacts.

e. Recreational Use

Glen Canyon National Recreation Area (NRA), which surrounds Lake Powell, hosted 3,112,449 visitors during calendar year 2016. The National Park Service has concession-operated facilities at Wahweap, Dangling Rope, Halls Crossing, Hite, and Bullfrog Basin on the reservoir, and at Lees Ferry located 15.8 miles below Glen Canyon Dam. The Navajo Nation operates a marina at Antelope Point.

Rainbow Bridge, considered a sacred site by Native Americans, saw visitation of 86,369 for calendar year 2016. The National Park Service has requested that visitors respect the site and keep from approaching too closely or walking under the bridge. Personal watercraft use in the Rainbow Bridge area has been banned since 2000.

The Carl B. Hayden Visitor Center, adjacent to Glen Canyon Dam and powerplant in Page, Arizona, is owned and maintained by Reclamation and operated by the National Park Service. The Glen Canyon Natural History Association conducts public tours of the dam and operates the book sales area in the visitor center. A remodel of the visitor center and exhibits was completed in late 2016 and a grand re-opening is planned for the spring of 2017.

f. Invasive Mussel Control

Quagga mussels were confirmed in Lake Powell in 2012 and are now found throughout the reservoir. As a result, Lake Powell is considered to be infested. Veligers (young mussels) are passing through the dam and small numbers of adult mussels have been found in the Glen Canyon stretch of the river.

In 2015, a substantial increase in the number of quagga mussels was observed. During a fixed wheel gate inspection, the number of attached quagga mussels was too large to effectively count. Additionally, small colonies of quagga mussels have been found within the plant piping systems. At this point in time, the mussels have not adversely affected the operation of the powerplant and dam; however, they are expected to have negative impacts in the future. The Glen Canyon Field Division has chosen to mitigate the problem by installing new strainer baskets and micro-filtration on the plant piping systems. The Field Division has entered into a service agreement with the Denver Technical Service Center to develop a design and specification. Installation of this equipment will be complete by the end of 2018.

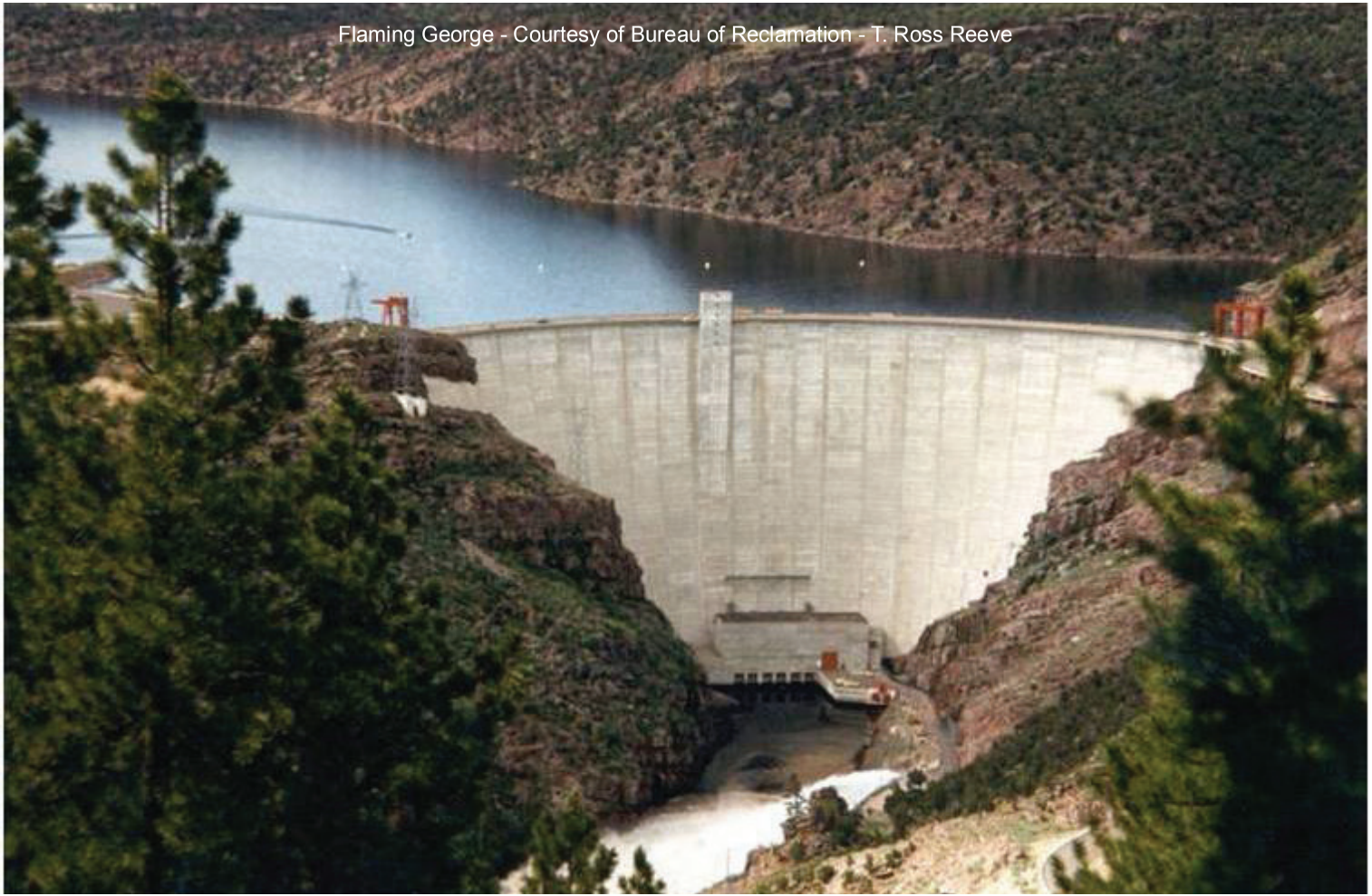
An Upper Colorado Region Invasive Mussel Response Plan was developed in 2010. The program focuses on four areas: monitoring and sampling, engineering solutions, maintenance techniques, and operational practices. Reclamation has also launched an extensive public outreach campaign to educate the public with radio and television spots as well as print advertisements in local tourism magazines. The State of Utah continues to monitor park waters and, in conjunction with the National Park Service, has implemented mandatory boat inspections and decontaminations to minimize the spread of invasive mussels from Lake Powell and to manage park operations now that quagga mussels are present. The main focus of this effort has shifted from prevention to containment and incorporates science and lessons learned from the Lake Mead National Recreation Area.

2. Flaming Gorge Unit

Flaming Gorge Dam and powerplant were completed in 1963. Uprating of the units in 1992 increased the plant nameplate capacity from 108 megawatts to about 151 megawatts.

In September 2000, a final report entitled Flow and Temperature Recommendations for Endangered Fishes in the Green River Downstream of Flaming Gorge Dam was published by the Upper Colorado River Endangered Fish Recovery Program (Upper Colorado Recovery Program). The report, prepared by a multi-disciplinary team, synthesizes research conducted on endangered fish in the Green River under the Upper Colorado Recovery Program and presents flow recommendations for three reaches of the Green River. In 2006, Reclamation completed a National Environmental Policy Act process for implementation of an operation at Flaming Gorge Dam that meets the flow recommendations. The Operation of Flaming Gorge Dam Final Environmental Impact Statement was published in November 2005 and a Record of Decision was signed in February 2006. Flaming Gorge Dam is operated in accordance with the 2006 ROD and the September 2005 Biological Opinion on the Operation of Flaming Gorge Dam.

Fiscal year 2016 was the sixth year in which Reclamation worked with the Upper Colorado Recovery Program to implement the Larval Trigger Study Plan, which involves timing spring peak flows to entrain larval razorback sucker in floodplain wetlands. Reclamation is working with the Recovery Program in evaluating the flow


Flaming George - Courtesy of Bureau of Reclamation - T. Ross Reeve

and temperature recommendations for the effectiveness in recovery of endangered fish and a report is expected toward the end of 2017 or beginning of 2018.

a. Recreational Use

The interagency agreement between the Bureau of Reclamation and Ashley National Forest (U.S. Forest Service) for joint management of facilities within the primary jurisdiction area expired December 31, 2013, and the U.S. Forest Service declined to enter into another agreement. Operation of the visitor center is now Reclamation's sole responsibility. Reclamation has a license agreement with the Intermountain Natural History Association to staff the center and is negotiating a Memorandum of Understanding with the U.S. Forest Service on various roles and responsibilities.

Public tours of the dam are conducted April 15 through October 15 of each year through a contract with Choice Services, Inc. Tours of the inside of the dam are conducted when the security threat advisory is low. When the security threat advisory is high, tours of the inside of the dam are suspended and tourists are taken to a dam overlook area where guides present information about construction and operation of the dam.

The Flaming Gorge National Recreation Area, located in the states of Utah and Wyoming, is administered by the Ashley National Forest. The U.S. Forest Service does not estimate visitor use statistics by feature, so no figures are available for the Flaming Gorge NRA.

Due to budget restraints, low visitation, and high maintenance, the U.S. Forest Service is currently planning the closure of 12 recreation sites on the east side of the forest from Sweetwater County, Wyoming, to Uintah County, Utah. Nine of the sites are within the boundaries of the Flaming Gorge NRA and include the Upper Marsh Creek boat ramp; Lucerne Group campground; Antelope Flat, Sheep Creek Bay, Red Canyon, Greendale, Skull Creek, and Red Springs campgrounds, and the Navajo Cliffs picnic area. The project is currently on hold.

b. Invasive Mussel Control

Invasive mussel control at Flaming Gorge Reservoir is the responsibility of the states of Utah and Wyoming as well as marina owners and visitors. The Bureau of Reclamation periodically performs plankton towing and sends the samples to its labs in Denver where tests are completed to detect the presence of veligers. The Utah Division of Wildlife Resources reports that DNA has been detected at Flaming Gorge during sampling at least once, but the reservoir is not considered to be infested at this time. Continued monitoring in 2016 did not detect the presence of invasive mussels.

3. Navajo Unit

Navajo Dam was completed in 1963. The water stored behind Navajo Dam pursuant to the Colorado River Storage Project Act provides a water supply for the Navajo Indian Irrigation Project near Farmington, New Mexico, and the Hammond participating project. In addition, water for the Jicarilla Apache Nation is also available in Navajo Reservoir pursuant to the December 8, 1992, contract between the Jicarilla Apache Nation and the United States which was executed as part of


Navajo Dam, New Mexico, Courtesy of Bureau of Reclamation

the Jicarilla Apache Nation Water Rights Settlement Act of January 3, 1992 (P.L. 102-441). The water supply for the Navajo-Gallup Water Supply Project will also be provided in part by Navajo Reservoir, as was provided in the Omnibus Public Land Management Act of March 30, 2009 (P.L. 111-11).

Reclamation published the Navajo Reservoir Operations Final Environmental Impact Statement on April 20, 2006, and the Record of Decision was signed on July 31, 2006. Reclamation's decision was to implement the preferred alternative that is identified in the 2006 ROD with reservoir releases ranging from 250 to 5,000 cfs. The preferred alternative, to the extent possible, implements criteria needed to assist in meeting flow recommendations for the endangered fish in the San Juan River, while assisting both current and future water development in the San Juan River Basin to proceed in compliance with the Endangered Species Act and other state and federal laws. Navajo Dam is operated in accordance with the 2006 Record of Decision.

a. Recreational Use

Recreation at Navajo Reservoir is managed by the states of Colorado and New Mexico through recreation leases with Reclamation. The Colorado portion of the reservoir, or Navajo State Park, is managed by the Colorado Division of Parks and Wildlife (CDPW). The New Mexico portion of the reservoir, or Navajo Lake State Park, is managed by the New Mexico State Parks Division (New Mexico State Parks). New Mexico State Parks will be returning a large portion of the lands around Navajo Reservoir back to Reclamation for management once the new statewide recreation lease agreement is signed (expected in May 2017). New Mexico State Parks wants to reduce its footprint and responsibility in developed areas due to reduced resources. They will, however, continue boating patrols for enforcement of boating laws outside their formal boundary.

Visitation for Navajo Reservoir was reported to be 290,010 on the Colorado side from July 1, 2014, through June 30, 2015, and 499,272 on the New Mexico side during the state's fiscal year of July 1, 2015, through June 30, 2016.

b. Invasive Mussel Control

Reclamation is working with both recreation managing entities to develop effective solutions to manage the spread of invasive mussels including educating the public and providing materials such as signs and brochures. The CDPW is conducting boat inspections and has a portable boat wash and decontamination unit at Arboles. Due to funding limitations, staffing reductions, and liability issues, New Mexico State Parks is no longer able to perform boat inspections/decontaminations for invasive mussels at any of the reservoirs they manage for Reclamation. The New Mexico Department of Game and Fish (NMDGF) has authority under state law for mussel control, as well as an inspection and decontamination program. Reclamation instituted a private sector contract in 2016 to assist the NMDGF with boat inspection and decontamination services at Navajo Reservoir. A total of 12,977 inspections and 95 decontaminations were performed. To date, mussel testing results in the reservoir have been negative. Reclamation is working with New Mexico State Parks and the NMDGF for design and construction of boat inspection and decontamination facilities at Navajo Lake State Park. Construction is expected to begin in the fall of 2017.

4. Wayne N. Aspinall Unit

The Wayne N. Aspinall Unit (Aspinall Unit) includes Blue Mesa, Morrow Point, and Crystal dams, reservoirs, and powerplants. Construction of the three Aspinall Unit dams was completed in 1976. The Aspinall Unit is located in Gunnison and Montrose counties, Colorado, on the Gunnison River upstream from Black Canyon of the Gunnison National Park. At optimum operations, the generators at Blue Mesa, Morrow Point, and Crystal powerplants are capable of producing a total of 290 megawatts of power.

Similar to Glen Canyon, Flaming Gorge, and Navajo dams, the Aspinall Unit is being evaluated to determine how operations can be modified to assist in the recovery of downstream endangered fish. Flow recommendations for endangered fish in the Gunnison River were completed in 2003. Reclamation published the Aspinall Unit Operations Final Environmental Impact Statement in February 2012. The preferred alternative provides operational guidance for the Aspinall Unit for specific downstream spring peak and duration flows that are dependent on forecasted inflow to the Aspinall Unit reservoirs. It also provides base flows outside of the spring runoff period. The U.S. Fish and Wildlife Service completed a programmatic biological opinion for the EIS which addresses proposed operation changes as well as coverage of existing water uses in the Gunnison Basin. The biological opinion also completes Endangered Species Act compliance for the Dallas Creek and Dolores projects. The Record of Decision was issued in May 2012.

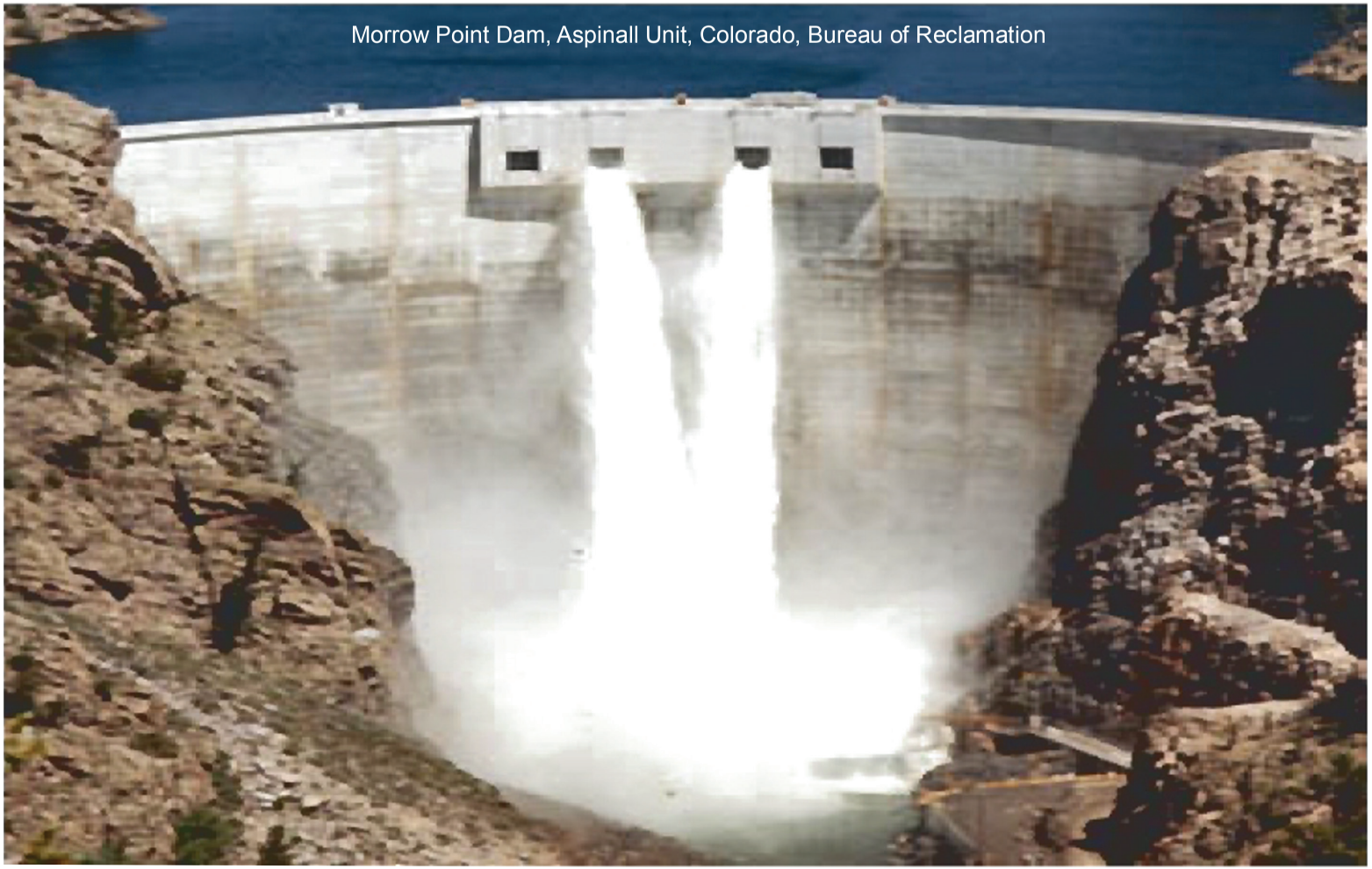
a. Recreational Use

Recreation use for the Aspinall Unit is managed by the National Park Service as the Curecanti National Recreation Area. Visitation to the NRA from October 1, 2015, through September 30, 2016, was reported to be 986,494. Visitation to the Black Canyon of the Gunnison located below Crystal Dam and adjacent to the Curecanti NRA was reported to be 209,166 for this same time period.

In 1965, the National Park Service entered into an agreement with the Bureau of Reclamation to construct and manage recreational facilities and to manage natural and cultural resources and recreation on, and adjacent to, the three reservoirs. This area became known as the Curecanti National Recreation Area. The NRA is currently identified by an administrative boundary that has not been established by legislation. Draft legislation has been written and may be introduced in 2017 by Senator Michael Bennet (D-CO).

b. Invasive Mussel Control

The State of Colorado, working in partnership with the National Park Service, has instituted an aggressive program to prevent the spread of quagga and zebra mussels into its waters, including the Aspinall Unit reservoirs. The State's Aquatic Nuisance Species (ANS) program is funded through severance tax of oil and gas production. In 2016, severance tax was all but eliminated by a Colorado Supreme Court decision against the State. Therefore, in 2017, the ANS enforcement program at Aspinall will be limited and about 1/3 of the current ANS coverage will be lost. As a result, the National Park Service anticipates closing some boat ramps if inspections cannot be conducted. In the past, continued monitoring has resulted in a couple of positive tests for veligers; however, these tests have not been verified by microscopy and no adult mussels have been found.


Morrow Point Dam, Aspinall Unit, Colorado, Bureau of Reclamation

B. STORAGE UNITS FISHERY INFORMATION

The Glen Canyon, Flaming Gorge, Navajo, and Wayne N. Aspinall storage units continue to provide excellent warm- and cold-water fishing both in the reservoirs and in the tailwater streams below the dams.

Lake Powell is almost exclusively a warm-water fishery with bluegill, striped bass, crappie, walleye, channel catfish, and smallmouth and largemouth bass as the harvested species. Lake Powell is consistently a high-quality fishery, even during lower water elevations. It is unknown at this time how the presence of invasive mussels will impact the fishery at Lake Powell, although if impacts from other lakes where they are present is any indication, the fishery may fall off over the next few years, with less fish and less robust game species available. Mussels remove phytoplankton from the water column causing disruptions to the food web, and their waste products alter the ecosystem.

The cool, clear depths of Flaming Gorge Reservoir remain ideal for several species of trout, including cutthroat, rainbow, lake, and brown. Also present are kokanee salmon, smallmouth bass, and channel catfish. Due to the presence of illegally stocked and invasive burbot, the Utah Division of Wildlife Resources requires any burbot caught to be killed and there is no limit on the number of fish that can be taken from either the Utah or Wyoming sides of the reservoir. The annual "Burbot Bash" on the Utah side was held January 20-22, 2017. Approximately 201 teams numbering 653 anglers brought in 3,918 fish. The next event, the "Burbot Classic" was held February 3-5, 2017.

Navajo Reservoir provides both cold- and warm-water fisheries including catfish, crappie, and smallmouth bass in the shallows and near the reservoir surface. Kokanee salmon, northern pike, and many varieties of trout are found in the deeper, colder waters. Annually, during the late fall and early winter months, there is a snagging season for kokanee after the spawn and before the fish die. The U.S. Fish and Wildlife Service stocks 80,000 sterile rainbow fingerlings as part of the project mitigation; however, due to other priorities, this may change in the future.

The Aspinall Unit reservoirs are exclusively cold-water fisheries with six species of sports fish available: rainbow, mackinaw, brown, lake, and brook trout, as well as kokanee salmon. At one time, the Aspinall Unit reservoirs boasted the largest kokanee salmon fishery in the United States. However, kokanee populations decreased to below an estimated 200,000 several years ago due to predation by lake trout. At that time Colorado Parks and Wildlife started a program to rebuild the population through increased stocking and continued removal of lake trout. The kokanee population is now estimated to be 400,000.

The four tailwaters (the Colorado River below Glen Canyon Dam, the Green River below Flaming Gorge Dam, the San Juan River below Navajo Dam, and the Gunnison River below Crystal Dam) have provided excellent trout fishing that many view as some of the best in the western United States. The Flaming Gorge tailwater is designated a "blue ribbon" fishery by the Utah Division of Wildlife Resources and fish populations in the river have been counted as high as 22,000 per river mile; the highest concentration in the West. The seven miles between Flaming Gorge Dam and Little Hole accommodate approximately 80 percent of the estimated 150,000 anglers who fish the Green River every year. New Mexico Game and Fish estimates that the tailwaters below Navajo Dam see 271,000 angler hours per year and, on almost any day of the week, visitors can see anglers and guides plying the waters.

The 26 miles of the Gunnison River below Crystal Dam through the Black Canyon are designated a “gold medal” fishery by the Colorado Division of Parks and Wildlife.

With the discovery of invasive adult mussels in the Colorado River below Glen Canyon Dam, it is unknown at this time how they might affect the fishery there. Another invasive, the green sunfish, was discovered in the summer of 2015 about four miles below Glen Canyon Dam. Due to concerns for endangered native fish species, treatments to eradicate the populations have been taken in 2015 and 2016. The National Park Service hosted a webinar in October 2016 to develop a range of options for monitoring and controlling the population of this and several other non-native fish to minimize the risk to native fish.

C. CRSP POWER GENERATION

The CRSP is one of Reclamation’s key hydropower producing projects. The CRSP’s combined installed capacity is over 1,800 megawatts with Glen Canyon Dam accounting for 1,320 megawatts alone. On average, the CRSP generates 5.6 billion kilowatt-hours per year, which accounts for about 15 percent of Reclamation’s total annual production of approximately 40 billion kilowatt-hours. The CRSP provides power to nearly six million people living in Arizona, Colorado, Nebraska, Nevada, New Mexico, Utah, and Wyoming.

During fiscal years 2015 and 2016, generation at CRSP powerplants amounted to 5.20 and 5.36 billion kilowatt-hours, respectively. The major portion for those same years, 3.88 and 3.98 billion kilowatt-hours, respectively, was produced at Glen Canyon Dam. The balance was produced at Flaming Gorge, Blue Mesa, Morrow Point, Crystal, Fontenelle, McPhee, and Towaoc powerplants.

Table 5 lists the gross generation for fiscal years 2015 and 2016 and the percentage of change:

Table 5
Gross Generation (Kilowatt-Hours)
and Percentage of Change for
Fiscal Years 2015 and 2016

Powerplant	Fiscal Year 2015	Fiscal Year 2016	Percent Change
Glen Canyon	3,875,392,000	3,980,939,000	+2.7
Flaming Gorge	506,722,000	548,264,000	+8.2
Blue Mesa	244,497,000	263,856,500	+7.9
Morrow Point	324,020,000	336,031,000	+3.7
Crystal	156,947,000	153,848,400	-2.0
Fontenelle	75,924,000	56,688,000	-25.3
McPhee	5,017,000	4,914,600	-2.0
Towaoc	16,300,000	19,495,500	+19.6
Total	**5,204,819,000**	**5,364,037,000**	**+3.1**

D. AUTHORIZED PARTICIPATING PROJECTS

Twenty-two participating projects were *originally* authorized by Congress between 1956 and 1968. Eleven were authorized by the initial authorizing Act of April 11, 1956 (70 Stat. 105), one was authorized in the 1956 Act by terms of its authorizing Act of June 28, 1949 (63 Stat. 277), two were authorized by the Act of June 13, 1962 (76 Stat. 96), three were authorized by the Act of September 2, 1964 (78 Stat. 852), and five were authorized by the Act of September 30, 1968 (82 Stat. 886). Of the 22 originally authorized participating projects, ten are in Colorado, two in New Mexico, two in Utah, three in Wyoming, three in both Colorado and New Mexico, one in both Colorado and Wyoming, and one in both Utah and Wyoming. In the 1968 Act, the Pine River Extension Project was deleted, leaving 21 participating projects authorized by Congress. On March 30, 2009, the Omnibus Public Land Management Act (123 Stat. 991) amended the Colorado River Storage Project Act of 1956 to include the Navajo-Gallup Water Supply Project in New Mexico as a participating project, increasing the number to 22 participating projects *currently* authorized by Congress.

Participating projects develop, or would develop, water in the Upper Colorado River system for irrigation, municipal and industrial uses, and other purposes, and participate in the use of revenues from the Upper Colorado River Basin Fund to help repay the costs of irrigation features that are beyond the ability of the water users to repay. The Basin Fund is provided revenues from hydropower and water service sales.

To date, 17 of the currently authorized 22 participating projects have either been completed or are in the process of completion. The five remaining participating projects were deemed infeasible or economically unjustified and were never constructed

A list of the 23 participating projects that have been authorized by Congress is shown below:

The 11 participating projects originally authorized in 1956 are:

1. Central Utah (Initial Phase), Utah,
2. Emery County, Utah,
3. Florida, Colorado,
4. Hammond, New Mexico,
5. La Barge, Wyoming,
6. Lyman, Utah and Wyoming,
7. Paonia, Colorado (works additional to existing project),
8. Pine River Extension, Colorado and New Mexico,
9. Seedskadee, Wyoming,

10. Silt, Colorado, and

11. Smith Fork, Colorado.

12. In the 1956 Act, the Eden Project in Wyoming, by terms of its authorizing Act of June 28, 1949, became financially related to the Colorado River Storage Project as a participating project.

In 1962, authorizing legislation named the following two as participating projects:

13. Navajo Indian Irrigation, New Mexico (being constructed for the Bureau of Indian Affairs by the Bureau of Reclamation), and

14. San Juan-Chama, Colorado and New Mexico.

In 1964, authorizing legislation named an additional three as participating projects:

15. Bostwick Park, Colorado,

16. Fruitland Mesa, Colorado, and

17. Savery-Pot Hook, Colorado and Wyoming.

The Colorado River Basin Project Act of September 30, 1968, authorized five additional projects as participating projects, but deleted the Pine River Extension Project as a participating project:

18. Animas-La Plata, Colorado and New Mexico,

19. Dallas Creek, Colorado,

20. Dolores, Colorado,

21. San Miguel, Colorado, and

22. West Divide, Colorado.

The Omnibus Public Land Management Act of 2009 amended the Colorado River Storage Project Act of 1956 to include the following as a participating project:

23. Navajo-Gallup Water Supply, New Mexico.

Table 6 shows the 17 participating projects that have been completed or are in the process of completion:

Table 6
CRSP Participating Projects
Completed or in the Process of Completion

#	Project	State(s)	Dam	Year Completed
1.	Eden	Wyoming	Big Sandy	1952
---	Eden	Wyoming	Eden	1959
2.	Central Utah (Vernal Unit)	Utah	Steinaker	1962
3.	Hammond	New Mexico	---	1962
4.	Paonia	Colorado	Paonia	1962
5.	Smith Fork	Colorado	Crawford	1962
6.	Florida	Colorado	Lemon	1963
7.	Emery County	Utah	Joes Valley	1966
8.	Silt	Colorado	Rifle Gap	1966
9.	Seedskadee	Wyoming	Fontenelle	1968
---	*Central Utah (Bonneville Unit)	Utah	Starvation	1970
10.	Bostwick Park	Colorado	Silver Jack	1971
11.	Lyman	Utah and Wyoming	Meeks Cabin	1971
12.	San Juan-Chama	Colorado and New Mexico	Heron	1971
---	*Central Utah (Bonneville Unit)	Utah	Soldier Creek	1973
---	*Central Utah (Bonneville Unit)	Utah	Currant Creek	1975
---	Lyman	Utah and Wyoming	Stateline	1979
---	*Central Utah (Jensen Unit)	Utah	Red Fleet	1980
---	*Central Utah (Bonneville Unit)	Utah	Upper Stillwater	1987
13.	Dallas Creek	Colorado	Ridgway	1991
---	*Central Utah (Bonneville Unit)	Utah	Jordanelle	1993
14.	Dolores	Colorado	McPhee	1998
---	*Central Utah (Uintah Basin Replacement Project)	Utah	Big Sand Wash (enlarged)	2006
15.	*Animas-La Plata	Colorado and New Mexico	Ridges Basin	2011
16.	*Navajo Indian Irrigation	New Mexico	---	---
17.	*Navajo-Gallup Water Supply	New Mexico	---	---

*In the process of completion.

The present status of construction, investigation, and recreational facilities for the 23 authorized CRSP participating projects is as follows:

1. Colorado

a. Bostwick Park Project

The Bostwick Park Project is located in west-central Colorado near the city of Montrose. The project develops flows of Cimarron Creek, a tributary of the Gunnison River, for irrigation and for benefits to sport fishing and recreation. A full and supplemental supply of irrigation water is available for 6,100 acres of land. Silver Jack Dam (completed in 1971) is located on Cimarron Creek about 20 miles above the junction with the Gunnison River. Project water stored in Silver Jack Reservoir is released to Cimarron Creek. The releases, along with usable natural flows, are diverted from the creek into the existing Cimarron Canal 2.5 miles below the dam and conveyed 23 miles to the vicinity of the project land. The U.S. Forest Service developed recreation facilities under a cooperative arrangement with Reclamation. Facilities include access roads, campgrounds (60 units in three loops), two group areas, picnicking facilities, restrooms, a boat dock, trails, fences, landscaping, and an administration site. At 8,900 feet in elevation, use is seasonal. The reservoir is managed as a non-motorized boating lake with three species of trout. Access for anglers is fairly easy at designated access points around the 293-acre reservoir.

b. Dallas Creek Project

The Dallas Creek Project is located on the Uncompahgre River in west-central Colorado. The area served by the project comprises most of the Uncompahgre River Basin and includes lands in Montrose, Delta, and Ouray counties. Ridgway Dam and reservoir, the primary features of the project, are located on the Uncompahgre River a few miles north of the town of Ridgway.

Block notice number one was issued for the Dallas Creek Project on May 31, 1989, covering all municipal and industrial water use. The notice involved 28,100 acre-feet of water. Repayment on that notice began in 1990. Block notice number two was issued on March 21, 1990. The notice included all irrigation waters for the project, involving 11,200 acre-feet. The notice was issued to Tri-County Water Conservancy District. The first payment under the repayment contract was made in February 1993 and will continue until February 2042.

A 40-year lease of power privilege between Tri-County Water Conservation District and the United States was signed on February 6, 2012, allowing for the construction and operation of a hydropower facility with a capacity of 7 megawatts, generating approximately 22,000 megawatt-hours per year. Construction of the hydropower facility was completed in early 2014 and operation of the powerplant began in April 2014.

Recreation at Ridgway Reservoir is managed by the Colorado Division of Parks and Wildlife under an agreement with Reclamation. There are numerous picnicking and campsites available including miles of trails around the reservoir and downstream of Ridgway Dam. Reclamation and Ridgway State Park have implemented a seasonal closure of the area east of Highway 550 to public access to protect wintering big game. Fishing at Ridgway is considered to be good and the CDPW, in an effort to protect the native fish downstream, encourages anglers to catch as many smallmouth bass as they can since the species was illegally stocked in the early 2000s.

Reclamation is working closely with CDPW to develop effective solutions to manage the spread of invasive mussels including educating the public and providing materials such as signs and brochures. The CDPW is conducting mandatory boat inspections at Ridgway and boat ramps are closed to trailered boats at the end of September of each year. Reclamation and CDPW are in the process of designing a permanent boat inspection and decontamination area at the reservoir with construction expected to begin in the fall of 2017. Reclamation and CDPW cost share boat inspections and decontamination activities at the reservoir. However, due to a recent Colorado Supreme Court decision against the State, the State has lost a majority of its aquatic nuisance species funding for boat inspection activities beginning in 2017. As a result, the boat ramp may be periodically closed and boating access limited.

c. Dolores Project

The Dolores Project, located in the Dolores and San Juan River basins in southwestern Colorado, uses water from the Dolores River for irrigation, municipal and industrial use, recreation, fish and wildlife, and production of hydroelectric power. Primary storage of Dolores River flows for all project purposes is provided by McPhee Reservoir, formed by McPhee Dam and Great Cut Dike. Dolores Project construction began in 1976. By fiscal year 1995, all primary project facilities were completed and in operation. In 1996, Reclamation signed petitions allocating the last approximately 1,800 acre-feet of full-service irrigation water to full-service users. Reclamation substantially completed construction of the Dolores Project in fiscal year 1998. The final cost allocation for the project was completed in October 2000 and approved by the Upper Colorado Regional Director by memorandum dated January 25, 2001.

In order to mitigate construction of salinity control modifications to the Upper Hermana, Lone Pine, and Rocky Ford Laterals (parts of the Dolores Project), 55 acres of new wetlands were developed at the Lone Dome wetlands area below McPhee Dam. In order to complete the remaining 20 acres of mitigation, Reclamation developed Simon Draw wetlands near the Totten Reservoir area. A long-term management agreement between Reclamation and the Colorado Division of Parks and Wildlife for operation and maintenance of the Lone Dome wetlands area is in place. Reclamation's Western Colorado Area Office operates and maintains Simon Draw wetlands.

Hydroelectric power generation is a component of the Dolores Project with McPhee and Towaoc Canal powerplants. McPhee Powerplant is located at the downstream toe of McPhee Dam along the left abutment with an installed capacity of 1.3 megawatts. Towaoc Canal Powerplant is located on the Towaoc Canal, five miles north of Cortez, Colorado, in Montezuma County with an installed capacity of 11.5 megawatts.

Recreation at McPhee Reservoir is under the jurisdiction of the U.S. Forest Service through an agreement with Reclamation, and through legislation that expanded the boundary of the San Juan National Forest to include the reservoir. The reservoir has 50 miles of shoreline and two recreation complexes with campgrounds, day-use areas, and boat launch ramps. There is also a marina concession to serve visitors. Montezuma County is exploring the potential for legislation to transfer title of the recreation areas at McPhee Reservoir to the county.

The Lone Dome Recreation Area is located below McPhee Dam and includes 12 miles of public access to the Dolores River. This area is comprised of lands administered by the U.S. Forest Service, Bureau of Land Management, and Colorado Division of Parks and Wildlife.

Reclamation is working closely with partners including the Dolores Water Conservancy District, CDPW, and the Forest Service and was able to institute a funding agreement for boat inspections and a decontamination program to prevent invasive mussels from invading the reservoir. Because of the reservoir's proximity to Lake Powell, a plan is being considered to implement boat launch ramp closure hours. This action would close boat ramps with locked gates during times when boat inspections are not available.

d. Florida Project

Lemon Dam is the principal feature of the Florida Project. The dam, completed in 1963, is located in southwestern Colorado on the Florida River, approximately 14 miles northeast of the City of Durango in La Plata County. Flows in the Florida River are stored in the reservoir formed by the dam, and regulated releases can provide supplemental irrigation water for 19,450 acres. In addition to the construction of Lemon Dam, Reclamation work included rebuilding the Florida Farmers Diversion Dam, enlarging 3.9 miles of the Florida Farmers Ditch to its junction with the Florida Canal, enlarging 1.8 miles of the Florida Canal, and building a new lateral system to serve about 3,360 acres of land on the southwest portion of Florida Mesa. Project funds were advanced to the Florida Water Conservancy District to rehabilitate, enlarge, and extend portions of the Florida Farmers Ditch and Florida Canal distribution systems that serve remaining lands on Florida Mesa. The 1,190 acres of project land located in the Florida River Valley will continue to be served by numerous small ditches without the expenditure of project funds.

Lemon Powerplant, completed in 1989, has a capacity of 0.12 megawatts. The powerplant was constructed and is operated by the Florida Water Conservancy District under a lease of power privilege contract.

A conversion contract for 2,500 acre-feet of Florida Project water to be available for municipal and industrial purposes was negotiated and is expected to be executed in early 2014. A similar contract for 114 acre-feet was executed in 2009, which made water originally tied to the land inundated by the reservoir available for augmentation purposes.

Lemon Reservoir provides important recreation and fish and wildlife benefits; however, its primary purpose is to provide irrigation water and flood control. Recreation at Lemon Reservoir is under the jurisdiction of the U.S. Forest Service through an agreement with Reclamation. This is a high-elevation reservoir (8,500 feet) with seasonal use. The Miller Creek Campground has 12 campsites, restrooms, potable water, boat launch ramp and parking area, and a day-use picnic area The Upper Lemon Day-Use Area provides access for fishing and hiking and includes restrooms and a parking area.

Reclamation is working closely with the U.S. Forest Service to develop effective solutions to manage the spread of invasive mussels including educating the public and providing materials such as signs and brochures. In addition,

Reclamation is working with the U.S. Forest Service and Florida Water Conservancy District for strategies to prevent the establishment of aquatic nuisance species. Due to lack of funding from the State of Colorado in 2017, design and construction of boat inspection and decontamination facilities at the reservoir is currently on hold while other options are explored with reservoir stakeholders such as limiting the reservoir to non-motorized boats.

e. Fruitland Mesa Project

The Fruitland Mesa Project was found to be infeasible and was not constructed.

f. Paonia Project

The Paonia Project, located in west-central Colorado, provides full and supplemental irrigation water supplies for 15,300 acres of land in the vicinity of Paonia and Hotchkiss. Project construction includes Paonia Dam and reservoir and enlargement and extension of Fire Mountain Canal. Paonia Dam controls and regulates the runoff of Muddy Creek, a tributary of the North Fork of the Gunnison River.

Recreation at Paonia Reservoir is managed by the Colorado Division of Parks and Wildlife under an agreement with Reclamation. The original recreation facilities were built in 1963 and CDPW assumed management in 1965. There are two campgrounds, a picnic area, and boat launching facilities. Recreational attractions include the landscape surrounding the park, waterskiing, camping, and northern pike fishing.

Reclamation is working closely with CDPW to develop effective solutions to manage the spread of invasive mussels including educating the public and providing materials such as signs and brochures. Reclamation and CDPW cost share boat inspections and decontamination activities at the reservoir. However, due to a recent Colorado Supreme Court decision against the State, the State has lost a majority of its aquatic nuisance species funding for boat inspection activities beginning in 2017. As a result, the boat ramp may be periodically closed and boating access limited.

g. San Miguel Project

The San Miguel Project was found to be economically unjustified and was not constructed.

h. Silt Project

The Silt Project is located in west-central Colorado near the towns of Rifle and Silt. The project stores the flows of Rifle Creek and pumps water from the Colorado River to supply irrigation water for approximately 7,000 acres of land. Principal features of the project are Rifle Gap Dam and reservoir, a pumping plant, and a lateral system.

Recreation at Rifle Gap Reservoir is managed by the Colorado Division of Parks and Wildlife under an agreement with Reclamation. Recreation facilities include numerous campgrounds, picnic sites, a boat ramp, group use area, restrooms, and parking areas. Recreation activities include motorized water sports,

swimming, sailing, windsurfing, and fishing. Although Rifle Gap is a small reservoir, it is a popular one with five camp loops and 89 campsites; several campsites are accessible to persons with disabilities.

Reclamation is working closely with CDPW to develop effective solutions to manage the spread of invasive mussels including educating the public and providing materials such as signs and brochures. Reclamation and CDPW cost share boat inspections and decontamination activities at the reservoir. However, due to a recent Colorado Supreme Court decision against the State, the State has lost a majority of its aquatic nuisance species funding for boat inspection activities beginning in 2017. As a result, the boat ramp may be periodically closed and boating access limited.

i. Smith Fork Project

The Smith Fork Project, located about 30 miles southeast of Delta, Colorado, supplements the irrigation water supply for approximately 8,200 acres in Delta and Montrose counties and provides a full water supply for 1,423 acres of land previously not irrigated. Constructed features of the project include Crawford Dam and reservoir, Smith Fork Diversion Dam, Smith Fork Feeder Canal, Aspen Canal, Clipper Canal, and recreation facilities. Recreation at Crawford Reservoir is managed by the Colorado Division of Parks and Wildlife under an agreement with Reclamation. Boating, scuba diving, water skiing, jet skiing, windsurfing, swimming, fishing, and camping are some of the offerings at the park. There are two campgrounds with 66 sites, a group day-use area, and 30 sites for day use; several campsites are accessible to persons with disabilities.

Reclamation is working closely with CDPW to develop effective solutions to manage the spread of invasive mussels including educating the public and providing materials such as signs and brochures. Reclamation and CDPW cost share boat inspections and decontamination activities at the reservoir. However, due to a recent Colorado Supreme Court decision against the State, the State has lost a majority of its aquatic nuisance species funding for boat inspection activities beginning in 2017. As a result, the boat ramp may be periodically closed and boating access limited.

j. West Divide Project

The West Divide Project was found to be economically unjustified and was not constructed.

2. New Mexico

a. Hammond Project

The Hammond Project is located in northwestern New Mexico along the southern bank of the San Juan River and opposite the towns of Blanco, Bloomfield, and Farmington, New Mexico. The project provides an irrigation supply for 3,933 acres. Major project works consist of the Hammond Diversion Dam on the San Juan River (completed in 1962), the Main Gravity Canal, a hydraulic-turbine-driven pumping plant and an auxiliary pumping plant, three major laterals, minor distribution laterals, and the drainage system. Most of the irrigation supply is obtained from direct diversions of the natural streamflow of the San Juan River. When necessary, these flows are supplemented by storage releases from Navajo Reservoir, a major feature of the CRSP. Water is diverted from the river by the Hammond Diversion Dam and turned into the 27.4-mile-long Main Canal. Major diversions from the canal

are made by the East and West Highline laterals, which are served by the Hammond Pumping Plant, and the Gravity Extension lateral. Small diversions are made by minor laterals.

b. Navajo-Gallup Water Supply Project

The Navajo-Gallup Water Supply Project was authorized for construction by the Omnibus Public Land Management Act of 2009 (P.L. 111-11) and is the cornerstone of the Navajo Nation water rights settlement in the San Juan River Basin in New Mexico. Construction on the project began in 2012. When completed, the Navajo-Gallup Water Supply Project will consist of two water treatment plants, 300 miles of pipeline, 19 pumping plants, and numerous water regulation and storage facilities. The project will convey a reliable municipal and industrial water supply to the eastern section of the Navajo Nation; the southwestern part of the Jicarilla Apache Nation; and the City of Gallup, New Mexico, from diversions from the San Juan River Basin in northern New Mexico and via two separate pipeline laterals – the San Juan Lateral and the Cutter Lateral. Based on projected populations in the year 2040, the project would serve approximately 203,000 people in the Navajo Nation, 1,300 people in the Jicarilla Apache Nation, and approximately 47,000 people in the City of Gallup.

Reclamation is the lead agency in the design and construction of the project, but in order to help meet the Congressionally-mandated completion date of 2024, the Navajo Nation, the City of Gallup, and the Indian Health Service will also be responsible for design and construction of certain features of the project via financial assistance agreements with Reclamation.

Construction of the project is well underway. In 2016, Reclamation continued construction on the first pumping plant of the project (Tohlakai Pumping Plant) as well as a section of pipeline (Reach 22A) on the Cutter Lateral. Three additional contracts were awarded in 2016: Reach 12B on the San Juan Lateral and Reaches 22B and 21 (Water Treatment Plant) on the Cutter Lateral. In addition, the City of Gallup completed work on Reach 13 and awarded a contract for Reach 27.6, and the Navajo Nation continued construction on Reaches 24.1 and 25. Also in 2016, Western Area Power Administration, under an interagency agreement with Reclamation, began working with the Navajo Tribal Utility Authority and other local power providers to ensure that necessary facilities are in place to serve electrical power to the project. In 2017, Reclamation anticipates awarding additional contracts including Block 9-11, a 28-mile section of pipeline on the San Juan Lateral. The project authorization ceiling at the October 2016 price level is $1.131 billion.

c. Navajo Indian Irrigation Project

The Navajo Indian Irrigation Project (NIIP) was authorized in 1962 by P.L. 87-483, with amendments, to develop the necessary infrastructure to deliver San Juan River water to not more than 110,630 acres of farmland in the northeastern part of the Navajo Reservation near Farmington, New Mexico. In a 1962 Memorandum of Agreement, which defined the roles and responsibilities of the Bureau of Indian Affairs (BIA) and Reclamation, the BIA was required to provide funding from its budget appropriation and Reclamation was designated to design and construct the project.

The project has been under construction for over 52 years and is now approximately 70 percent complete with many of the project features now requiring

rehabilitation. The primary issue affecting NIIP completion is insufficient construction funding, which has been inconsistent throughout the history of the project and has ranged from a peak of $28.9 million in 1976 to $0 in 1984 and 1986. Funding levels have remained static at approximately $3 million per year since 2011.

Notable accomplishments in fiscal year 2016 were Reclamation's technical assistance to the BIA for emergency repair of a large siphon on the NIIP Main Canal and transfer of the Gallegos Pumping Plant from Reclamation to the BIA under "plant-in-service" status. The fiscal year 2017 construction budget will be used to fund work on future scheduled feature transfers.

3. Utah

a. Central Utah Project

The Central Utah Project (CUP), located in the central and east central part of Utah, was constructed in part by the Bureau of Reclamation and is now being completed by the Central Utah Water Conservancy District in Orem, Utah, the local project sponsor. It is the largest water resources development program ever undertaken in the State of Utah. The CUP provides water for irrigation and municipal and industrial uses. Benefits include recreation, fish and wildlife, flood control, water conservation, water quality control, hydropower generation, and area development. The Initial Phase, authorized in 1964, originally consisted of four units: Bonneville, Jensen, Upalco, and Vernal. An Ultimate Phase consisted of the Ute Indian Unit. A sixth unit; the Uintah Unit, was authorized by separate legislation in 1968. The largest of the six units is the Bonneville Unit which involves the diversion of water from the Uintah Basin, a part of the Colorado River Basin, to the Great Basin, with associated resource developments in both basins. The other units – Jensen, Uintah, Upalco, Ute Indian, and Vernal – were intended to provide for local development in the Uintah Basin. Work on the Uintah and Upalco units was discontinued, in major part due to objections from the Ute Indian Tribe. The Ute Indian Unit was deauthorized by Congress in the Central Utah Project Completion Act (CUPCA) of 1992.

(i). Bonneville Unit

The completed Bonneville Unit will deliver a permanent supply of 42,000 acre-feet of irrigation water and 157,750 acre-feet of municipal and industrial water. A key feature of the Bonneville Unit is the trans-basin diversion of 101,900 acre-feet (annual average) of water from the Uintah Basin to the Wasatch Front (Utah County cities and the Salt Lake City metropolitan area).

Central Utah Project Completion Act of 1992. Legislation enacted in 1992 (P.L. 102-575, CUPCA), significantly reformed implementation of the CUP. Among many changes, the Act increased the ceiling to allow completion of the Bonneville Unit of the CUP, authorized new portions and deauthorized old portions of the original plan, provided Indian water rights settlement benefits, and more. The legislation provides that the project's local sponsor, the Central Utah Water Conservancy District (District), will plan and construct the remaining CUP-Bonneville Unit features; the Utah Reclamation Mitigation and Conservation Commission, an independent federal commission created under CUPCA, will complete the associated fish and wildlife mitigation; the Secretary of the Interior will oversee implementation of CUPCA; and the District and/or Department of the Interior may contract with Reclamation for

technical services. The Department of the Interior's CUPCA Office and the District completed a Definite Plan Report in 2004 that will ensure that the Bonneville Unit is completed under the remaining ceiling.

Utah Lake Drainage Basin Water Delivery System (Utah Lake System). The final component of the Bonneville Unit to be constructed is the Utah Lake System. The Department of the Interior published the Utah Lake System Final Environmental Impact Statement on September 30, 2004, and on December 22, 2004, the Assistant Secretary for Water and Science signed the Record of Decision. Construction began in 2007; however, due to recent reductions in construction funding, the Utah Lake System is expected to be significantly delayed. Under the Utah Lake System, 33 miles of large diameter pipeline has been constructed with 26 miles remaining to be constructed.

Hydroelectric Power Generation. In 2005, the Department of the Interior selected the Central Utah Water Conservancy District and Heber Light & Power as joint lessees for power development at Jordanelle Dam. Construction of the 12-megawatt facility began in 2006, and the hydropower facility, which has been certified by the Low Impact Hydropower Institute, began generating power on July 1, 2008. The Department of the Interior, Central Utah Water Conservancy District, Bureau of Reclamation, and Western Area Power Administration are implementing the Olmsted Hydroelectric Powerplant Replacement Project. This project will replace a 100-year-old facility, provide 13 megawatts of capacity, and protect CUP water rights. Construction is now underway with completion scheduled for the spring of 2018. Two hydroelectric power generation facilities are planned for construction under the Utah Lake System. These facilities will have a combined capacity of 50 megawatts.

Reservoirs and High Mountain Lakes. The Bonneville Unit includes five reservoirs constructed by Reclamation as storage facilities for project irrigation, municipal and industrial storage, and recreational use. The five reservoirs are Jordanelle, Strawberry, Starvation, Currant Creek, and Upper Stillwater. In addition, three high mountain lakes were reconstructed to provide storage in conjunction with the municipal and industrial system.

Jordanelle Reservoir is the newest reservoir with recreation facilities completed in 1998. Recreation and public use are managed by the Utah Division of Parks and Recreation under an agreement with Reclamation. There are two main developed recreation areas: Hailstone and Rock Cliff. Hailstone is a large developed campground and day-use area located on the west side of the reservoir. Rock Cliff is located on the southeast side of the reservoir and offers a quieter experience with walk-in campgrounds.

Strawberry Reservoir was enlarged in 1974 under authority of the Colorado River Storage Project Act of 1956 (before the enactment of CUPCA). Soldier Creek Dam, completed in 1973, expanded the capacity of Strawberry Reservoir from 283,000 acre-feet to a maximum capacity of 1,106,500 acre-feet and a total surface area of 17,163 acres. The original Strawberry Dam, constructed by Reclamation in 1922, was deliberately breached in 1985. As part of Reclamation's commitment to provide recreation opportunities, new facilities were built. There are four main developed areas: Strawberry Bay, Soldier Creek, Renegade Point, and Aspen Grove.


Jordanelle Dam, Bonneville Unit, CUP, courtesy of Bureau of Reclamation

Starvation Reservoir, the first Bonneville Unit facility to be constructed, is a large reservoir on the Strawberry River in the Uintah Basin. The reservoir, filled by surplus winter and spring flows from the Duchesne and Strawberry rivers, is large enough for all water sports and has a state park with a campground. Starvation State Park was established in 1972, two years after construction of Starvation Dam.

Currant Creek Reservoir is a high elevation lake (7,680 feet) with a mixed open and timbered setting. Development began in 1977 with construction of Currant Creek Dam. Currant Creek Reservoir finished filling in 1982. The reservoir shoreline is 85 percent under the jurisdiction of the U.S. Forest Service while the remaining 15 percent is private with restricted access. Recreation management at Currant Creek is under the jurisdiction of the U.S. Forest Service, Uinta National Forest.

Upper Stillwater Reservoir is another high mountain reservoir that has one main campground. The reservoir serves as a popular trailhead into the High Uintas Wilderness with the boundary located only one mile north of the dam near the high water line for the reservoir. Recreation management is under the jurisdiction of the U.S. Forest Service, Ashley National Forest. A new memorandum of agreement between Reclamation and the U.S. Forest Service was signed in 2009. The managed recreation season at Upper Stillwater Reservoir is from June through September with high use on holidays and weekends. Boating use is restricted to non-motorized craft and fishing is not allowed from any watercraft.

High Mountain Lakes include Washington Lake, Trial Lake, and Lost Lake with a total reservoir capacity of 5,788 acre-feet. Located in the Wasatch Cache National Forest, these lakes were reconstructed to provide irrigation water for Summit County, Utah. Recreation at the lakes is managed by the U.S. Forest Service and allows non-motorized boating and fishing. The lakes are at an elevation of over 9,500 feet and are only accessible during the summer months. The CUPCA also authorized the stabilization of additional high mountain lakes. As part of the Uintah Basin Replacement Project, the Utah Reclamation and Mitigation Commission stabilized 13 lakes. Authorization still remains for additional lake stabilization in the Uinta Mountains.

(ii). Jensen Unit

The Jensen Unit in northeastern Utah provides about 5,300 acre-feet of water for municipal and industrial uses and 4,600 acre-feet for irrigation. Key project features include Red Fleet Dam and reservoir, Tyzack Aqueduct Reach 1, and Tyzack Aqueduct Reach 2.

(iii). Uintah and Upalco Units

Section 203(a) of the CUPCA of 1992 provided for the construction of the Uintah Basin Replacement Project to replace, in part, the Uintah and Upalco units which had never been constructed. Public Law 107-366, enacted December 19, 2002, deauthorized the Uintah and Upalco units, transferring the unexpended budget authority to units of the CUP for construction of the Uintah Basin Replacement Project, Utah Lake System, and other CUPCA purposes. The Central Utah Water Conservancy District has completed construction of the primary features (including the enlarged Big Sand Wash Dam) of the Uintah Basin Replacement Project. The Big Sand Wash Feeder Diversion Structure and Pipeline was completed in March

of 2004. The Big Sand Wash Reservoir enlargement was completed in September 2006 followed by completion of the Big Sand Wash Roosevelt Pipeline in September 2008.

(iv). Ute Indian Unit

The Ute Indian Unit was deauthorized in 1992 by Section 201(b) of the Central Utah Project Completion Act.

(v). Vernal Unit

The Vernal Unit in northeastern Utah supplies supplemental irrigation water to about 14,700 acres and approximately 1,600 acre-feet of municipal and industrial water annually to the communities of Vernal, Naples, and Maeser. Key project features include Steinaker Dam and reservoir, Fort Thornburgh Diversion Dam, Steinaker Service Canal, and Steinaker Feeder Canal.

Following observed "sloughing" of riprap on the Steinaker Dam face, a Level 1 Emergency Response was issued on September 24, 2014, and subsequently terminated on October 10, 2014. Enhanced monitoring of the dam began immediately upon notification of the sloughing and continues. A corrective action study is underway. The Uintah Water Conservancy District continues to operate the reservoir under a reservoir elevation restriction. Corrective action is expected to be implemented in 2018 to reduce risk of failure associated with the sloughing incident.

b. Emery County Project

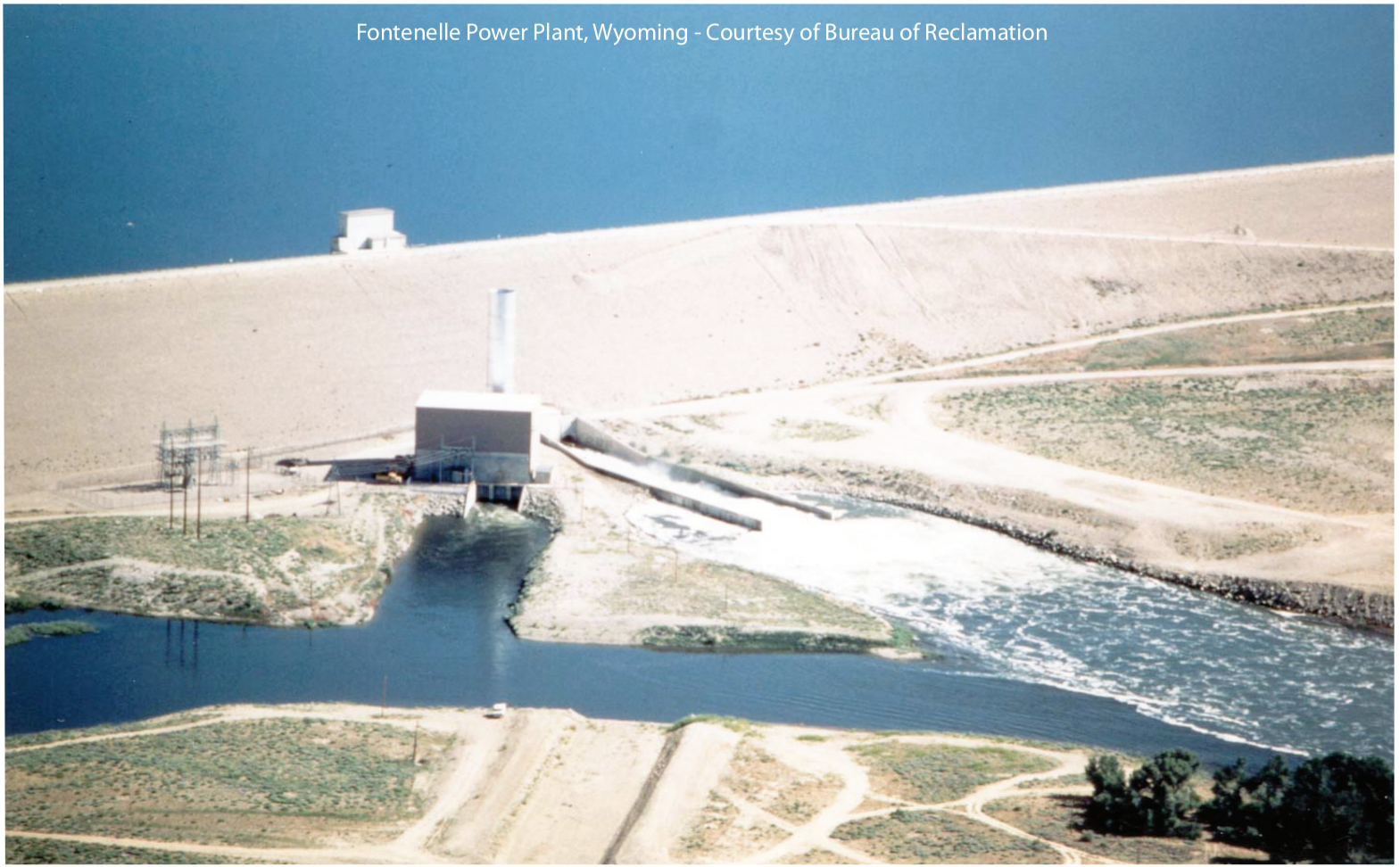
The Emery County Project is located in east-central Utah near the towns of Huntington, Castle Dale, and Orangeville. The project, which includes an irrigable area of almost 19,000 acres, is in the Green River Basin. Principal construction features of the project are Joes Valley Dam and reservoir on Seely Creek; Swasey Diversion Dam 10 miles downstream from Joes Valley Dam; Cottonwood Creek-Huntington Canal; Huntington North Service Canal; and Huntington North Dam and East and West Dikes which form Huntington North Reservoir. The project provides an estimated average of 28,100 acre-feet of water annually for irrigation of 18,755 acres, of which 771 acres is land previously unirrigated. In the mid-1970s, the irrigable acreage was reduced to 14,171 with 4,604 acres designated "not for service." In 1981, the irrigable area was increased to 16,170 acres with 2,605 acres in the "not for service" category. The project supplies 6,000 acre-feet of water for industrial and municipal purposes.

Recreation facilities have been constructed at both Joes Valley and Huntington North reservoirs. Recreation facilities at Joes Valley are operated by the U.S. Forest Service and recreation at Huntington North is managed by the Utah Division of Parks and Recreation, both under agreements with Reclamation. Invasive mussels have not been detected in either reservoir.

4. Wyoming

a. Eden Project

The Eden Project furnishes an irrigation water supply for 17,010 acres. Project lands are in the vicinity of the towns of Farson and Eden in southwestern Wyoming about 40 miles north of Rock Springs. Project features include Big Sandy



Fontenelle Power Plant, Wyoming - Courtesy of Bureau of Reclamation

Dam and reservoir, Eden Dam and reservoir, Little Sandy Feeder Canal, Big Sandy Feeder Canal, Means Canal, Eden Canal, and a lateral and drainage system. Big Sandy Dam (completed in 1952) was constructed to replace some storage in the existing off-stream Eden Reservoir and to supply water for additional project lands. The Means Canal conveys water from Big Sandy Reservoir to the Westside Lateral, which serves lands on the west side of Big Sandy Creek, and to the Eden Canal which serves lands on the east side of the creek. Little Sandy Diversion Dam diverts water into the Little Sandy Feeder Canal. Water can be diverted from Big Sandy Dam to Eden Reservoir through the Big Sandy Feeder Canal. Water is drawn from Eden Reservoir to serve Eden Canal and Farson Lateral.

The Wyoming Water Development Office (WWDO) has moved forward with plans to increase the storage of Big Sandy Reservoir. Reclamation's Denver Technical Service Center is working on final designs needed to raise the top of active conservation five feet. Final designs will incorporate a filter diaphragm around the outlet works, additional toe drains at the left abutment, cutoff wall in the dike, a rebuilt diversion in the dike, and replacement of drop structures in the feeder canal. National Environmental Policy Act work continues for the necessary permits and clearances required for the modifications.

Recreation facilities at Big Sandy Reservoir are administered by the Bureau of Reclamation's Provo Area Office. In 2010, the Wyoming Game and Fish Commission implemented emergency regulations to stop the spread of aquatic invasive species in Wyoming waters. Under this regulation, all watercraft are required to purchase and display an aquatic invasive species decal. Funds raised from purchase of the decals are used to pay for public education programs and prevention efforts to keep invasive quagga and zebra mussels from being introduced. Efforts include watercraft inspections, decontamination if warranted, and possible criminal and civil penalties for anyone found violating the regulations. To date, no mussels have been detected in Wyoming waters.

b. La Barge Project

The La Barge Project was found to be infeasible and was not constructed.

c. Seedskadee Project

The Seedskadee Project is located in the Upper Green River Basin in southwestern Wyoming. It provides storage and regulation of the flows of the Green River for power generation, municipal and industrial use, fish and wildlife, and recreation. Principal features of the project are the Fontenelle Dam, powerplant, and reservoir. The reservoir is operated for municipal and industrial water use, power production, flood control, and the downstream fishery and wildlife refuge.

Recreation facilities at Fontenelle Reservoir are managed by the Bureau of Land Management under an agreement with Reclamation. Fontenelle Creek Recreation Area is the only developed site on the reservoir, although there are three other campgrounds (Tailrace, Weeping Rock, and Slate Creek) located below Fontenelle Dam, along the Green River, that are more primitive.

In 2010, the Wyoming Game and Fish Commission implemented emergency regulations to stop the spread of aquatic invasive species in Wyoming waters. Efforts include watercraft inspections, decontamination if warranted, and possible criminal and civil penalties for anyone found violating the regulations.

Reclamation manages approximately 135,000 acres of withdrawn land adjacent to and downstream of Fontenelle Dam and reservoir that are no longer needed for project purposes. Reclamation submitted a request to revoke its withdrawal of these lands to the Bureau of Land Management on December 31, 2014. The Bureau of Land Management is reviewing the revocation request and performing field authorizations. All but 40 authorizations were field verified during the summer of 2016. The BLM expects to complete its review in summer of 2017. If acceptable, the withdrawal will be relinquished and the lands returned to the public trust to be managed by the Bureau of Land Management.

5. Colorado and New Mexico

a. Animas-La Plata Project

The Animas-La Plata Project is located in southwestern Colorado and northwestern New Mexico and was first authorized by the Colorado River Basin Project Act of 1968 (P.L. 90-537). In 1988, it was incorporated into the Colorado Ute Indian Water Rights Settlement Act (P.L. 100-585). The Colorado Ute Settlement Act Amendments of 2000 (Title III of P.L. 106-554, December 21, 2000) provide for implementation and completion of the project. Approval to begin construction was granted in October 2001 and initial site work started in April 2002. Construction of Ridges Basin Dam, Durango Pumping Plant, and Lake Nighthorse (formerly called Ridges Basin Reservoir) will provide the Southern Ute Indian and Ute Mountain Ute Tribes with a reliable water supply for their future needs, while protecting scarce water resources for existing water users in southwestern Colorado and northwestern New Mexico. It remains a priority of the Secretary of the Interior to complete the Animas-La Plata Project in a cost effective and efficient manner.

The Animas-La Plata Project consists of four major components: Ridges Basin Dam, Durango Pumping Plant, and Ridges Basin Inlet Conduit located in Colorado; and the Navajo Nation Municipal Pipeline (NNMP) located in New Mexico. The NNMP consists of approximately 30 miles of 24-inch diameter pipeline running from Farmington, New Mexico, to Shiprock, New Mexico, and will provide for the conveyance of 4,680 acre-feet of municipal water per year to Navajo Nation communities. The project consists of various other elements including multiple utility and road relocations; fish, wildlife, and wetlands mitigation; a permanent operating facility; and cultural resources investigations. The reservoir formed by Ridges Basin Dam was named Lake Nighthorse in honor of Senator Ben Nighthorse Campbell who played an instrumental role in the Colorado Ute settlement and construction of the Animas-La Plata Project.

All Colorado features of the Animas-La Plata project are currently operational. In August 2012, water was released from Lake Nighthorse down Basin Creek to successfully test the Basin Creek features. An operation and maintenance contract has been signed with the Animas-La Plata Operations, Maintenance and Replacement Association (ALP OM&R Association) that allows project sponsors to operate Colorado project features. Transfer of OM&R responsibilities to the ALP OM&R Association occurred on April 1, 2013. Lake Nighthorse began filling on May 4, 2009, and filled for the first time on June 29, 2011. The maximum water surface elevation of 6,882 feet equates to 123,541 acre-feet in storage and a water surface area of approximately 1,500 acres.

In New Mexico, pipe laying operations on the NNMP were completed in July 2012; however, all NNMP features will not be complete until 2017.

The Bureau of Reclamation and the ALP OM&R Association, including project stakeholders, approved a recreation plan developed by the City of Durango (City). Subsequently, a Final Environmental Assessment and Finding of No Significant Impact was signed in December 2016 and a lease agreement with the City was signed in January 2017. A Cultural Resource Management Plan and programmatic agreement are being completed for compliance with the National Historic Preservation Act. Presently, the area in and around Lake Nighthorse remains closed to public use until additional recreation area improvements are completed to provide for public safety and protect land and water resources from damage due to uncontrolled use.

In 2009, Reclamation conducted a mussel facility risk assessment at Ridges Basin Dam to determine future risk of infestation. Since then, boat inspections and decontamination facilities have been constructed. Once the lake is open to public boating, inspections will begin.

b. Pine River Extension Project

The Pine River Extension Project was found to be infeasible and was deleted in the 1968 Colorado River Basin Project Act.

c. San Juan-Chama Project

The San Juan-Chama Project consists of a system of diversion structures and tunnels for transmountain movement of water from the San Juan River Basin to the Rio Grande Basin. Primary purposes of the San Juan-Chama Project are to furnish a water supply to the middle Rio Grande Valley for municipal, domestic, and industrial uses. The project is also authorized to provide supplemental irrigation water and incidental recreation and fish and wildlife benefits. The regulating and storage reservoir is formed by Heron Dam on Willow Creek just above the point where Willow Creek enters the Rio Chama. Heron Reservoir is operated by Reclamation in compliance with applicable federal and state laws including the San Juan-Chama Project authorization and the Rio Grande and Colorado compacts. Under these laws, only imported San Juan-Chama Project water may be stored in Heron Reservoir; there are no provisions for storing native Rio Grande water. Thus, all native Rio Grande water is released to the river below Heron Dam.

The Pojoaque Irrigation Unit, made up of Nambe Falls Dam and storage reservoir, provides supplemental irrigation water for about 2,800 acres in the Pojoaque Valley. It serves the Pojoaque Valley Irrigation District and the Indian pueblos of San Ildefonso, Nambe, and Pojoaque.

Reclamation, in coordination with the Western Area Power Administration, is considering hydroelectric power development on the San Juan-Chama Project under a lease of power privilege at up to four conduit drops along the project. Reclamation selected Albuquerque Bernalillo County Water Utility Authority as the preliminary lessee and is working to execute a preliminary lease and funding agreement for the development of non-federal hydropower on the project.

Recreation at Heron Reservoir is managed by New Mexico State Parks under an agreement with Reclamation. Recreation at Nambe Falls Reservoir is managed by the Nambe Pueblo under an agreement with Reclamation.

In April 2009, New Mexico's governor signed the Aquatic Invasive Species Control Act. The Act allows the New Mexico Department of Game and Fish to take actions to protect New Mexico's waters from the negative impacts of aquatic invasive species. To date, no evidence of invasive mussels has been found at Heron Reservoir. The Pojoaque Pueblo does not have an active mussel inspection program; therefore, the status of Nambe Falls reservoir is unknown at this time.

6. Colorado and Wyoming

a. Savery-Pot Hook Project

The Savery-Pot Hook Project was found to be infeasible and was not constructed.

7. Utah and Wyoming

a. Lyman Project

The Lyman Project lands are in southwestern Wyoming; however, much of the drainage area and one storage feature are in Utah, just across the Utah-Wyoming state line. The Lyman Project includes Meeks Cabin Dam and reservoir and Stateline Dam and reservoir. The project regulates the flows of Blacks Fork and the east fork of Smiths Fork for irrigation, municipal and industrial use, fish and wildlife conservation, and recreation. Recreation at Meeks Cabin and Stateline dams and reservoirs is the responsibility of the U.S. Forest Service, Wasatch-Cache National Forest, under authority of Public Law 89-72, as amended.

E. RECREATIONAL USE AT RESERVOIRS

Colorado River Storage Project facilities provide for a host of scenic and recreational opportunities that have significant economic benefits. While exact use figures are not available, it is estimated that recreation use at CRSP initial facilities totaled around 6 million for calendar year 2016, demonstrating the high value placed on outdoor recreation opportunities in the Intermountain West. Participating projects recreation use increases that number to about 7.5 million, a strong economic driver in the affected states, with some smaller and more rural areas almost entirely dependent upon the dollars that recreation brings to their areas.

For detailed information concerning recreational opportunities at CRSP and participating project reservoirs, please visit the following website: *https://www.recreation.gov*. In addition, recreation use figures can be obtained for both Glen Canyon and Curecanti National Recreation areas at *https://irma.nps.gov/Stats/*.

F. OTHER RECLAMATION PROJECTS IN THE UPPER COLORADO RIVER BASIN

Significant Reclamation projects in the Upper Colorado River Basin that either use water from the Colorado River or are transbasin water

diversion projects are discussed below. While these projects are not part of the CRSP, they are worth noting.

1. Colorado

a. Colorado-Big Thompson Project

The Colorado-Big Thompson Project is a multipurpose transmountain, transbasin water diversion and delivery project located in Colorado. The project stores, regulates, and diverts water from the Colorado River west of the Rocky Mountains, providing supplemental water for irrigation of 720,000 acres of land east of the Rocky Mountains. The project historically diverts 230,000 acre-feet annually from the headwaters of the Colorado River with a maximum possible diversion of 310,000 acre-feet. The Northern Water Conservancy District apportions the water diverted from the West Slope, which is used for irrigation in more than 120 ditches and 60 reservoirs. Besides irrigation water uses, the project also provides water for industrial, hydroelectric power, recreation, and environmental uses.

Although the Colorado-Big Thompson Project is not a participating project of the CRSP because it does not participate in the Upper Colorado River Basin Fund, it does utilize water diverted from the Upper Colorado River system to the eastern slope of Colorado.

Contents of reservoirs within the Colorado-Big Thompson Project as of September 30, 2016, were as follows:

- West Slope
  - Lake Granby, 487,220 acre-feet;
  - Grand Lake, 816 acre-feet;
  - Shadow Mountain, 16,982 acre-feet;
  - Willow Creek Reservoir, 8,658 acre-feet;
  - Green Mountain Reservoir, 107,507;
- East Slope
  - Carter Lake 60,136 acre-feet; and
  - Horsetooth Reservoir, 114,214 acre-feet.

During water year 2016, transmountain diversions from the Colorado River Basin in Colorado by the Colorado-Big Thompson Project via the Adams Tunnel totaled 243,543 acre-feet.

b. Dominguez Project (Whitewater)

The Dominguez Project was found to be infeasible and was not constructed.

c. Fruitgrowers Dam Project

The Fruitgrowers Dam Project, located in west-central Colorado, furnishes irrigation water to nearly 2,700 acres of land immediately downstream of Fruitgrowers Dam. Structures built by Reclamation include Fruitgrowers Dam, Dry Creek Diversion Dam, and Dry Creek Diversion Ditch. Other diversion structures and the canal and lateral system were constructed by private interests.

Reclamation manages public use at Fruitgrowers Reservoir. There are about five miles of shoreline, four of which are open to recreation. No water contact activities are allowed. Fruitgrowers Reservoir is the best water birding spot on Colorado's West Slope.

d. Fryingpan-Arkansas Project

The Fryingpan-Arkansas Project is a multipurpose transmountain, transbasin water diversion and delivery project located in Colorado. It makes possible an average annual diversion of 69,200 acre-feet of surplus water from the Fryingpan River and other tributaries of the Roaring Fork River, on the western slope of the Rocky Mountains, to the Arkansas River Basin on the eastern slope. The historical average imports are 52,200 acre-feet. The Fryingpan-Arkansas Project originally provided a supplemental supply of irrigation water for 280,600 acres of farmland and currently provides a supplemental supply of water for 200,000 acres in the Arkansas Valley. Total project supplies may be further increased through use and reuse of project water.

Although the Fryingpan-Arkansas Project is not a participating project of the CRSP because it does not participate in the Upper Colorado River Basin Fund, it does utilize water diverted from the Upper Colorado River system to the eastern slope of Colorado.

Contents of reservoirs within the Fryingpan-Arkansas Project as of September 30, 2016, were as follows:

- West Slope
  - Ruedi Reservoir, 77,901 acre-feet;
- East Slope
  - Turquoise Lake, 113,625 acre-feet;
  - Combined Mt. Elbert Forebay and Twin Lakes Reservoir, 114,292 acre-feet; and
  - Pueblo Reservoir, 186,027 acre-feet.

During water year 2016, transmountain diversions from the Colorado River Basin in Colorado by the Fryingpan-Arkansas Project via the Charles H. Boustead Tunnel totaled 61,051 acre-feet.

e. Mancos Project

The Mancos Project is an off-stream reservoir in southwestern Colorado completed in 1948 at a cost of $3.9 million, all of which has been repaid by the Mancos Water Conservancy District (District). The project was authorized under the Water Conservation and Utilization Act (P.L. 76-398), as amended. It consists of Jackson Gulch Dam, a 10,000 acre-foot reservoir, an inlet canal, and an outlet canal. The District constructed and operates a 260-kilowatt powerplant at Jackson Gulch Dam under a lease of power privilege contract. The project provides supplementary irrigation water for approximately 13,746 acres and municipal and industrial water for the town of Mancos, the surrounding area, and Mesa Verde National Park. Responsibility for the operation and maintenance of project facilities was transferred to the District by contract in 1963. The term "operation and maintenance" includes replacement, as specified in Reclamation's Report to the Congress, Annual Costs of Bureau of Reclamation Project Operation and Maintenance for Fiscal Years 1993-

97, dated September 1998. The Mancos Project is more than 60 years old and many features are reaching the end of their design life. The canal system is in need of extraordinary maintenance and rehabilitation, and delivery of agricultural and municipal and industrial water could be affected if these repairs are not made. The District has completed a study through a private engineering firm to assess the project's needs and repair/replace facilities including canal lining and some canal reconstruction. Reclamation is currently working with the District to develop title transfer and lease of power privilege contracts.

Recreation at Jackson Gulch Reservoir, also known as Mancos State Park, is under the administration of the Colorado Division of Parks and Wildlife through a contract with Reclamation. Amenities include camping, fishing, boating, hiking, and winter sports.

Reclamation is working closely with CDPW to develop effective solutions to manage the spread of invasive mussels including educating the public and providing materials such as signs and brochures. Reclamation and CDPW cost share boat inspections and decontamination activities at the reservoir. However, due to a recent Colorado Supreme Court decision against the State, the State has lost a majority of its aquatic nuisance species funding for boat inspection activities beginning in 2017. As a result, the boat ramp may be periodically closed and boating access limited.

f. Pine River Project

The Pine River Project consists of Vallecito Dam and reservoir which were constructed to furnish supplemental water to 63,873 acres of project lands and Southern Ute lands. Vallecito Dam is located on the Pine River, 18 miles northeast of Durango, Colorado. The project stores spring floodwaters to provide a supplemental water supply to about 13,000 acres of the Southern Ute lands and about 41,000 acres of land outside the Southern Ute Reservation. Irrigation water is distributed through privately owned systems or through systems under the jurisdiction of the Bureau of Indian Affairs.

A contract between Reclamation and the Pine River Irrigation District for use of 6,700 acre-feet of Pine River Project water for municipal, industrial, and miscellaneous uses was executed on March 16, 2007. Reclamation completed National Environmental Policy Act compliance for an initial quantity of 3,000 acre-feet. Additional National Environmental Policy Act compliance will be required for the remaining 3,700 acre-feet prior to use.

Recreation at Vallecito Reservoir is under the administration of the Pine River Irrigation District, through a contract with Reclamation, with the exception of public campgrounds on the east side of the reservoir, which are administered by the U.S. Forest Service.

Reclamation is working closely with its recreation managing entities to develop effective solutions to manage the spread of invasive mussels including educating the public and providing materials such as signs and brochures. The Pine River Irrigation District and CDPW cost share boat inspections and decontamination activities at the reservoir. However, due to a recent Colorado Supreme Court decision against the State, the State has lost a majority of its aquatic nuisance species funding for boat inspection activities beginning in 2017. As a result, the boat ramp may be periodically closed and boating access limited.

g. Uncompahgre Project

The Uncompahgre Project is located on the western slope of the Rocky Mountains in west-central Colorado. Project lands surround the town of Montrose and extend 34 miles along both sides of the Uncompahgre River to Delta, Colorado. Project features include Taylor Park Dam and reservoir, the Gunnison Tunnel, seven diversion dams, 128 miles of main canals, 438 miles of laterals, and 216 miles of drains. The systems divert water from the Uncompahgre and Gunnison rivers to serve over 76,000 acres of project land.

There are six non-federal hydropower facilities either in operation or under development as leases of power privilege on the Uncompahgre Project. The Uncompahgre Valley Water Users Association has entered into various partnerships for the development of these sites. The first lease of power privilege was issued in March 2012. Full operation of the first two hydropower units began during the summer of 2013. Since this time, three additional sites have been developed and have begun operation. An additional site is under development. In total, the hydropower sites have a capacity of 17.5 megawatts and will generate approximately 63,500 megawatt-hours per year.

The recreation facilities at Taylor Park Reservoir are managed by the U.S. Forest Service under an agreement with Reclamation. The reservoir, with 2,400 acres of surface water, offers good fishing and includes trout species, northern pike, and kokanee salmon. Reclamation is working with its recreation managing entities to develop effective solutions to manage the spread of invasive mussels including educating the public and providing materials such as signs and brochures.

G. PLANNING INVESTIGATION ACTIVITIES

The Upper Colorado Region General Planning Program budget for fiscal year 2016 was $576,000 with approximately 40 percent being directed within the Upper Colorado River Basin. General Planning Program funds are used for Reclamation to conduct critical short-term investigation activities not funded by other projects or programs such as Rural Water or through Reclamation's WaterSMART (Sustain and Manage America's Resources for Tomorrow) programs, including: West Wide Climate Risk Assessments (WWCRA), Basin Studies, Landscape Conservation Cooperatives (LCC), Drought Response, Title XVI Water Reclamation and Reuse, Water Conservation Field Services (WCFS), and Cooperative Watershed Management (CWM).

The WWCRA, Basin Studies, and LCC activities represent a comprehensive approach to incorporating the best available science into planning activities for climate change adaptation planning. The Drought Response Program provides assistance to water users for drought contingency planning, including consideration of climate change information, and to take actions that will build long-term resiliency to drought. The Title XVI Water Reclamation and Reuse Program focuses on identifying and investigating opportunities to reclaim and reuse wastewater and naturally impaired ground and surface water. The WCFS Program assists with the development or updates of water conservation and management plans to identify water management problems, evaluate options, highlight accomplishments, and plan for improvements. The CWM Program supports the formation and development of locally led watershed groups to facilitate the development of multi-stakeholder watershed management projects. Reclamation solicits input from the states on their watershed needs and activities and will continue to consult with the states to tailor

the CWM Program in accordance with state watershed management plans. Under the WaterSMART Program, approximately $100,000 was funded toward planning in the Upper Colorado River Basin for 2016. No funding was authorized for the Rural Water Program and the authority expired on September 30, 2016.

1. Utah

a. San Juan River to Kayenta Pipeline Investigation

Using monies from a Reclamation Rural Water grant, this appraisal-level investigation evaluated a proposed pipeline system that would extend from an existing pump on the San Juan River at Mexican Hat, Utah, south to the community of Kayenta, Arizona. This multi-state system would also serve Navajo communities along the pipeline route, notably in the Monument Valley area in Utah. The investigation was completed September 2016 and Reclamation's policy did not recommend progression to a feasibility study due to the expiration of the Rural Water Supply Program.

H. RESERVOIR OPERATIONS

Each year the Bureau of Reclamation prepares the Annual Operating Plan (AOP) for Colorado River reservoirs. The purpose of the AOP is to report on past year's operations and illustrate the potential range of reservoir operations that might be expected in the upcoming water year. Information from the 2017 AOP is summarized below.

For a detailed discussion of reservoir operations in 2016 and the range of probable projected 2017 operations for each of the four main storage units of the CRSP, please visit the following website to view the 2017 AOP in its entirety: *https://www.usbr.gov/uc/water/rsvrs/ops/aop/index.html.*

1. 2016 Hydrology Summary and Reservoir Status

Below to near average stream flows were observed throughout much of the Colorado River Basin during water year 2016. Unregulated inflow to Lake Powell in water year 2016 was 9.62 million acre-feet (maf), or 89 percent of the 30-year average which is 10.83 maf. Unregulated inflow to Flaming Gorge, Blue Mesa, and Navajo Reservoirs was 98, 92, and 80 percent of average, respectively.

Precipitation in the Upper Colorado River Basin was just below average during water year 2016. On September 30, 2016, the cumulative precipitation received within the Upper Colorado River Basin for water year 2016 was 95 percent of average.

Snowpack conditions trended near average across most of the Colorado River Basin throughout the snow accumulation season. The basin-wide snow water equivalent measured 97 percent of average on April 1, 2016. Total seasonal accumulation peaked at approximately 97 percent of average on April 3, 2016. On April 1, 2016, the snow water equivalents for the Green River, Upper Colorado River Headwaters, and San Juan River Basins were 107, 109, and 82 percent of average, respectively.

During the 2016 spring runoff period, inflows to Lake Powell peaked on June 11, 2016, at approximately 58,900 cubic feet per second. The April through July unregulated inflow volume for Lake Powell was 6.61 maf, which was 92 percent of average.

The Colorado River total system storage experienced a net decrease of 0.134 maf in water year 2016. Reservoir storage in Lake Powell increased during water year 2016 by 0.491 maf. Reservoir storage in Lake Mead decreased during water year 2016 by 0.235 maf. At the beginning of water year 2016 (October 1, 2015), Colorado River total system storage was 51 percent of capacity. As of September 30, 2016, total system storage was 51 percent of capacity.

2. System Conservation

The Colorado River Basin is experiencing its worst drought in recorded history. Based on natural flow on the Colorado River at Lees Ferry, Arizona, the period from 2000 to 2016 was the driest 17-year period in more than 100 years of record keeping. During this time, storage in Colorado River system reservoirs has declined from nearly full to about half of capacity. Entities that rely on Colorado River water are concerned with the ongoing drought and declining reservoir levels at Lake Powell and Lake Mead. In response, several programs are being implemented to help mitigate the impact of the ongoing drought.

System conservation agreements allow water users to participate in pilot projects designed to determine whether voluntary, temporary, and compensated programs to conserve or reduce consumptive use of Colorado River water can benefit the entire Colorado River system by mitigating the effect on declining storage levels in Colorado River reservoirs.

An $11 million funding agreement for system conservation (SC Funding Agreement) was executed in 2014 among Reclamation, the Central Arizona Water Conservation District (CAWCD), The Metropolitan Water District of Southern California (MWD), Denver Water, and the Southern Nevada Water Authority (SNWA) (the Funding Partners). The SC Funding Agreement establishes the SC Program for funding the creation of Colorado River system water through voluntary water conservation actions and reductions in water use beginning in 2015 and continuing through at least 2016. The purpose of this SC Program is to explore and learn about the effectiveness of voluntary compensated measures that could be used, when needed, to help maintain water levels in Lake Powell and Lake Mead above critical levels. All water conserved as a result of the pilot program is considered Colorado River system water. To facilitate administration and implementation of the SC Program in the Upper Basin, the Upper Colorado River Commission and the Funding Partners entered into a facilitation agreement in May 2015, clarifying how the SC Program will be administered in the Upper Basin. In 2016, the SC Program received funding to implement additional projects.

Since the SC Program was implemented, 29 projects were implemented in the Upper Basin resulting in approximately 10,370 acre-feet of system water created and ten projects were implemented in the Lower Basin resulting in approximately 98,000 acre-feet (121 mcm) of system water created. Additional implementation agreements are anticipated to be executed in 2017.

A pilot fallowing program agreement was executed in 2013 between CAWCD, through the Central Arizona Groundwater Replenishment District, and the Yuma Mesa Irrigation and Drainage District. The water conserved under this program during 2014 through 2016 will remain in Lake Mead as system water and approximately 7,000 acre-feet will be conserved in 2016.

In addition to the previously mentioned activities, Reclamation, CAWCD, MWD, SNWA, and the Lower Division States signed a Memorandum of Understanding on December 10, 2014, to use best efforts to implement further voluntary measures designed to add to storage in Lake Mead. Furthermore, Congress has provided authorization for additional funding through Reclamation for drought-related activities to increase Colorado River system water in Lake Mead, Lake Powell, and other Colorado River system reservoirs for the benefit of the system. A report evaluating the effectiveness of the water conservation pilot projects is due to Congress in 2018, including a recommendation on whether the activities undertaken by the pilot projects should be continued.

3. Projected Upper Basin Delivery for 2017

Taking into account the existing water storage conditions in the Upper Basin, the August 2016 24-Month Study projection of the most probable near-term water supply conditions in the Upper Basin, and Section 6.B of the 2007 Interim Guidelines for the Coordinated Operations of Lake Powell and Lake Mead, the Upper Elevation Balancing Tier will govern the operation of Lake Powell for water year 2017. The August 2016 24-Month Study of the most probable inflow scenario projects the water year 2017 release from Glen Canyon Dam to be 9.00 maf. Given the hydrologic variability of the Colorado River System and based on actual 2016 water year operations, the projected water year release from Lake Powell in 2017 is likely to be in the estimated range of 8.23 maf to 11.89 maf or greater.

4. Summary of Reservoir Operations in 2016 and Projected 2017 Reservoir Operations

The operation of the Colorado River reservoirs has affected some aquatic and riparian resources. Controlled releases from dams have modified temperature, sediment load, and flow patterns, resulting in increased productivity of some riparian and non-native aquatic resources and the development of economically significant sport fisheries. However, these same releases can have detrimental effects on endangered and other native species. Operating strategies designed to protect and enhance aquatic and riparian resources have been established after appropriate National Environmental Policy Act compliance at several locations in the Colorado River Basin.

In the Upper Basin, public stakeholder work groups have been established at Fontenelle Dam, Flaming Gorge Dam, the Aspinall Unit, and Navajo Dam. These work groups provide a public forum for dissemination of information regarding ongoing and projected reservoir operations throughout the year and allow stakeholders the opportunity to provide information and feedback with respect to ongoing reservoir operations. Additionally, the Glen Canyon Dam Adaptive Management Work Group was established in 1997 as a chartered committee under the Federal Advisory Committee Act of 1972.

Modifications to projected operations are routinely made based on changes in forecasted conditions or other relevant factors. Within the parameters set forth in the Law of the River and consistent with the Upper Colorado River Endangered Fish Recovery Program, the San Juan River Basin Recovery Implementation Program, Section 7 consultations under the Endangered Species Act, and other downstream concerns, modifications to projected monthly operations may be based on other factors in addition to changes in streamflow forecasts. Decisions on spring peak releases and downstream habitat target flows may be made midway through the runoff season. Reclamation will conduct meetings with Recovery Program participants, the U.S. Fish and Wildlife Service, other federal agencies, representatives of the Basin States, and with public stakeholder work groups to facilitate the discussions necessary to finalize site-specific projected operations.

I. FISH AND WILDLIFE

During the 1960s and 1970s, growing public concern over the environment resulted in new federal environmental laws. The enactment of the Colorado River Basin Project Act of 1968, National Environmental Policy Act of 1969, Endangered Species Act of 1973, and Grand Canyon Protection Act of 1992 has resulted in new compliance requirements as well as authorization in some cases for CRSP units to modify operations for fish and wildlife and other environmental protection purposes. Additionally, the Reclamation Projects Authorization and Adjustment Act, signed October 30 1992 (P.L. 102-575), was authorized to protect, restore, and enhance wetland and upland ecosystems for the conservation of fish and wildlife resources in the Upper Colorado River Basin, including Utah fish and wildlife resources adversely affected by construction and operation of the CRSP.

Since its inception in 1956, the CRSP has grown to include the participation of two significant endangered fish recovery programs: the Upper Colorado River Endangered Fish Recovery Program and the San Juan River Basin Recovery Implementation Program.

The Upper Colorado Recovery Program, established in 1988, is a cooperative effort among the states of Colorado, New Mexico, Utah, and Wyoming; representatives from the water development, hydroelectric consumer, and environmental communities; and affected federal agencies including the Bureau of Reclamation, National Park Service, U.S. Fish and Wildlife Service, and Western Area Power Administration. The intent of the program is to recover the endangered Colorado River fish species (humpback chub, bonytail, Colorado pikeminnow, and razorback sucker) while the states continue to develop their Colorado River Compact entitlements. With its demonstrated successes, the Upper Colorado Recovery Program has become a national model for its collaborative conservation efforts to protect endangered species.

The San Juan Recovery Program, established in 1992, is ongoing in the San Juan River Basin with participation from the states of Colorado and New Mexico; four Native American tribes and nations including the Jicarilla Apache, Navajo, Southern Ute Indian, and Ute Mountain Ute Indian; and affected federal agencies including the Bureau of Indian Affairs, Bureau of Land Management, Bureau of Reclamation, and U.S. Fish and Wildlife Service. The goal of the San Juan Recovery Program

is to protect and recover the native fish communities in the San Juan River while providing for continued water development consistent with state and federal laws.

As a result of activities being conducted by both the Upper Colorado and San Juan Recovery Programs, aggressive efforts are being made to stock sufficient numbers of Colorado pikeminnow, razorback sucker, and bonytail to provide the basis for self-sustaining populations that lead to down-listing and de-listing of the species. Capital projects constructed include fish ladders, fish screens, hatcheries, levee breeches, storage reservoirs, and irrigation system upgrades. In addition, existing CRSP storage facilities are now being re-operated to enhance natural flow regimes. To date, the two Recovery Programs have served as the reasonable and prudent alternative for many water projects depleting more than 3.7 million acre-feet of water annually while avoiding Endangered Species Act related litigation.

In January 2013, the Endangered Fish Recovery Programs Extension Act of 2012 (P.L. 112-672), which reauthorized federal funding for both Recovery Programs, was signed. With this amendment, funding will continue through 2019 for base funded activities (~$8 million per year) using Colorado River Storage Project hydropower revenues. As required by the authorizing legislation, the Secretary of the Interior submitted a Report to Congress in 2016 regarding the need to reauthorize the use of hydropower revenues beyond 2019. Capital construction funding using appropriated funds is authorized through 2023. The Programs received $4,351,000 in appropriated funding for fiscal year 2016 and $4,915,000 was requested for fiscal year 2017.

J. APPROPRIATIONS OF FUNDS BY THE UNITED STATES CONGRESS

The funds appropriated[6] for fiscal year 2016 for construction of the CRSP and participating projects and recreational and fish and wildlife activities totaled $91,623,000. Recreational and fish and wildlife activities received a total of $4,250,000.

In fiscal year 2016, Reclamation expended $9,073,000 in appropriations in its Colorado River Basinwide Salinity Control Program. The Natural Resources Conservation Service expended $11,791,240 in appropriations in its Colorado River Basin Salinity Control Program.

Table 7 is a summary of action by the 114th Congress pertaining to approval of funds for the construction program of the CRSP and participating projects and recreational and fish and wildlife activities.

Table 8 shows the total funds (rounded to the nearest $1,000) approved by the United States Congress for the CRSP and participating projects and chargeable against the limitations of various authorizing Acts (P.L. 485, 84th Congress, CRSP Act, as amended in 1972 by P.L. 32-370 and in 1988 by P.L. 100-563; P.L. 87-485, San Juan-Chama and Navajo Indian Irrigation Projects Act; P.L. 88-568, Savery-Pot Hook, Bostwick Park, and Fruitland Mesa Projects Act; and P.L. 90-537, Colorado River Basin Project Act).

Table 7
Colorado River Storage Project
Fiscal Year 2016 Program

Project	Budget Request	House Allowance	Senate Allowance	Appropriated
Construction Program				
CRSP Participating Projects				
Initial Units, CRSP	$30,000	$0	$0	$42,000
Navajo-Gallup Water Supply	80,340,000	0	0	87,331,000
TOTAL – Upper Colorado River Basin Fund	$80,370,000	$0	$0	$87,373,000
Recreation and Fish and Wildlife Facilities				
Recreational Facilities	$378,000	$0	$0	$100,000
Fish and Wildlife Facilities	3,030,000	0	0	4,150,000
TOTAL – CRSP Section 8	$3,408,000	$0	$0	$4,250,000
TOTAL – Construction and Section 8	**$83,778,000**	**$0**	**$0**	**$91,623,000**

Table 8
Appropriations Approved by Congress for the Colorado River Storage Project and Participating Projects[7]

Fiscal Year	Amount
1957	$13,000,000
1958	35,142,000
1959	68,033,000
1960	74,460,000
1961	58,700,000
1962	52,535,000
1963	108,576,000
1964	94,037,000
1965	55,800,000
1966	45,328,000
1967	46,648,000
1968	39,600,000
1969	27,700,000
1970	25,740,000
1971	24,230,000
1972	27,284,000
1973	45,770,000
1974	24,426,000
1975	22,967,000

7 The information in Table 8 has been prepared in good faith on the basis of information available at the date of publication.

Table 8 Continued

1976	53,722,000
1977	55,200,000
1978	67,051,000
1979	76,799,000
1980	81,502,000
1981	125,686,000
1982	130,063,000
1983	132,942,000
1984	161,104,000
1985	163,503,000
1986	97,412,000
1987	110,929,000
1988	143,143,000
1989	174,005,000
1990	163,653,000
1991	145,063,000
1992	92,093,000
1993	69,333,000
1994	46,507,000
1995	23,272,000
1996	27,049,000
1997	22,410,000
1998	17,565,000
1999	10,560,000
2000	13,908,000
2001	14,403,000
2002	16,000,000
2003	35,000,000
2004	55,640,000
2005	57,512,000
2006	64,320,000
2007	69,815,000
2008	65,175,000
2009	50,653,000
2010	63,144,000
2011	25,658,000
2012	39,376,000
2013	32,740,000
2014	71,344,000
2015	98,212,000
2016	102,226,000
TOTAL	**$3,955,668,000**

Plus: Navajo Indian Irrigation Project appropriations..... 621,662,321
(funds transferred to Reclamation only)
TOTAL APPROPRIATIONS $4,577,330,321
Excluding non-reimbursable funds for fish and wildlife, recreation, etc., under Section 8 of Public Law 485, 84th Congress, and all under financing and rescission actions.

COLORADO RIVER BASIN
TITLE II SALINITY CONTROL PROGRAM

Information relative to the Colorado River Basin Title II Salinity Control Program in the Colorado River Basin has been provided by the United States Department of the Interior, Bureaus of Reclamation and Land Management, and the United States Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS). Discussion of the Title II, Colorado River Basin Salinity Control Act, P.L. 93-320, (approved June 24, 1974) (Salinity Control Act) and its amendments can be found in earlier versions of this annual report.

A. BUREAU OF RECLAMATION SALINITY CONTROL PROGRAMS

The Bureau of Reclamation's salinity control programs in the Colorado River Basin are described below. They include the Colorado River Basinwide and the Basin States Salinity Control Programs.

COLORADO RIVER BASINWIDE SALINITY CONTROL PROGRAM

The Colorado River Basinwide Salinity Control Program (Basinwide Program) is being implemented under the authorities provided by the 1995 amendment (P.L. 104-20) to the Salinity Control Act. Through the Basinwide Program, projects are selected through Funding Opportunity Announcements (FOAs). For additional information on previous FOAs, please refer to earlier annual reports.

In 2016, $9.073 million of appropriations and $3.889 million of Basin Funds were received into Reclamation's Basinwide Program for a total of $12.962 million. This amount was expended through 14 ongoing salinity control projects located in Colorado, Utah, and Wyoming selected in FOAs. It is estimated that the facilities installed with the $12.962 million will control over 10,600 tons of salt loading each year.

As of September 30, 2016, Reclamation calculates the appropriation ceiling to be $639,418,000; total expenditures are $482,667,000; and the remaining ceiling balance is $156,751,000.

Reclamation is implementing salinity control through the Basinwide Program in the project areas show below (for additional information on projects funded in previous years, please refer to earlier annual reports).

1. Colorado

a. Cattleman's Ditch Salinity Control – Phase 2

Selected under the 2015 FOA, the Cedar Canon Iron Springs Ditch and Reservoir Company was awarded a $2.67 million cooperative grant to pipe approximately 6 miles of existing, unlined earthen irrigation canal and laterals located near Crawford, Colorado, and along Alkali Creek, a tributary to the Gunnison River. This will result in an annual salt load reduction of approximately 2,183 tons to the Colorado River, at a cost effectiveness of $51 per ton. The piping project will consist of buried HDPE, PVC, and gravity flow pipe. The cooperative agreement was executed in April 2016 and construction will begin in July 2017. The project is expected to be completed in 2018.

b. Cattleman's Harts, Hart/McLaughlin, Rockwell, and Poulsen Ditch Project

This project was completed in 2016.

c. Clipper Center Lateral Pipeline Project

Selected under the 2015 FOA, the Crawford Clipper Ditch Company was awarded a $3.15 million cooperative grant to pipe approximately 4.3 miles of existing, unlined earthen irrigation canals located near Crawford, Colorado, and along Cottonwood Creek, a tributary to the Gunnison River. This will result in an annual salt load reduction of approximately 2,606 tons to the Colorado River, at a cost effectiveness of $50.43 per ton. The piping project will consist of buried HDPE and PVC pipe. The cooperative agreement was executed in March 2016 and construction will begin in October 2017. The project is expected to be completed in 2018.

d. Grand Valley Irrigation Company (GVIC) Projects

This GVIC project, selected under the 2010 FOA to line approximately 1.9 miles of main canal and pipe about 4,100 feet of ditch within the Grand Valley, was completed in 2016.

This GVIC project, selected under the 2012 FOA to line approximately 2.4 miles of main canal within the Grand Valley, began construction in 2014 and will continue through 2017.

Selected under the 2015 FOA, the GVIC was awarded a $2.8 million cooperative grant to line approximately 1.65 miles of their main irrigation canal within the Grand Valley. This will result in a salt load reduction of approximately 2,363 tons annually at a cost effectiveness of $49.64 per ton. The canal lining will consist of a 30-mil PVC membrane with 3-4 inches of shotcrete cover. The cooperative agreement was executed in August 2016 and construction will begin in November 2017. The project is expected to be completed in 2019.

e. Grand Valley Water Users Association Government Highline Canal – Reach 1A Middle

Selected under the 2015 FOA, the Grand Valley Water Users Association was awarded a $3.6 million cooperative grant to line approximately 0.97 miles of their main irrigation canal within the Grand Valley. This will result in a salt load reduction of approximately 2,583 tons annually at a cost effectiveness of $58.63 per ton. The canal lining will consist of a 30-mil PVC membrane with 3-4 inches of shotcrete cover. The cooperative agreement was executed in April 2016 and construction will begin in November 2016. The project is expected to be completed in 2018.

f. North Delta Canal – Phase 1

Selected under the 2015 FOA, the North Delta Irrigation Company was awarded a $5.56 million cooperative grant to pipe approximately 5.97 miles of existing, unlined earthen irrigation canals located near Delta, Colorado, and along the north side of the Gunnison River. This will result in an annual salt load reduction of approximately 4,383 tons to the Colorado River at a cost effectiveness of $52.92 per ton. The piping project will consist of 1.41 miles of buried HDPE pipe and 3.02

miles of gravity flow pipe (piping is providing a 1.54 mile shortcut). The cooperative agreement was executed in April 2016 and construction will begin in the fall of 2017. The project is expected to be completed in 2019.

g. Orchard Ranch Ditch Piping Project

Selected under the 2015 FOA, the Orchard Ranch Ditch Company was awarded a $1.28 million cooperative grant to pipe approximately 2 miles of existing, unlined earthen irrigation canals located near Orchard City, Colorado, and along Surface Creek, a tributary to the Gunnison River. This will result in an annual salt load reduction of approximately 1,004 tons to the Colorado River, at a cost effectiveness of $53.16 per ton. The piping project will consist of buried HDPE pipe. The cooperative agreement was executed in April 2016 and construction will begin in October 2017. The project is expected to be completed in 2018.

h. Paradox Valley Unit

The Paradox Valley Unit, operating since 1996, continues to intercept and dispose of 100,000+ tons of salt annually.

Reclamation continues to have meetings and discussions on the Alternatives Study with the Bureau of Land Management (BLM), Environmental Protection Agency, Colorado Department of Public Health and Environment, and other stakeholders. A Record of Decision on the Alternative Study and Environmental Impact Statement is expected in 2019.

i. Uncompahgre Valley Water Users Association East Side Laterals Projects

Phase 7 construction was completed in 2016. Phase 8 construction is expected to be completed in 2017.

2. New Mexico

a. San Juan River Navajo Irrigation Projects – Lateral Conversion Project

This Project was selected under the 2015 FOA. The proposed project will replace 15 secondary earthen laterals totaling 182,917 feet with underground pressurized pipelines. The salt load reduction estimate for the project is 4,381 tons per year and the estimated cost effectiveness is $46 per ton per year. A cooperative agreement was executed in August 2016 with the San Juan Dineh Water Users Inc. in the amount of $4.84 million from the Basinwide Program. Funding in the amount of $1.89 million will be provided by the Navajo Nation Department of Water Resources Water Settlement Funding. Construction is scheduled to begin in the fall of 2017 and be completed in 2019.

3. Utah

a. Ashley Upper and Highline Canals Rehabilitation Project

This project was selected under the 2015 FOA. The proposed project will eliminate the open unlined Ashley Upper and Highline Canals of a combined length

of about 29.3 miles (Ashley Upper 13.1 miles and Highline Canal 16.2 miles). They will be replaced with about 21.9 miles (115,500 feet) of HDPE and PVC pipeline ranging in diameter from 63 inches to 10 inches. The salt load reduction estimate for the project is 2,713 tons per year and the estimated cost effectiveness is $54 per ton per year. A cooperative agreement was executed in September 2016 with the Ashley Upper Irrigation Company in the amount of $3.51 million from the Basinwide Program. Funding in the amount of $10.4 million is being provided by a loan from the Utah Board of Water Resources. Construction is scheduled to begin in the fall of 2017 and be completed in 2019.

b. Cottonwood Creek Consolidated Irrigation Company Blue Cut/ Mammoth Project

This project was completed in 2016.

c. Huntington-Cleveland Irrigation Company Project

The cooperative agreement is expected to be closed in 2017.

d. South Valley Lateral Salinity Project

This project was completed in 2016.

4. Wyoming

a. Austin/Wall Irrigation District Project

This project was completed in 2016.

b. Eden Valley Irrigation and Drainage District Projects

The Eden Valley, Farson/Eden Pipeline Project, was selected under the 2008 FOA. Construction was completed and the project was operational in 2014. Due to some pipeline leaks, the Eden Valley Irrigation and Drainage District withheld retainage funds until the end of the 2016 irrigation season to ensure that all leaks had been addressed.

BASIN STATES SALINITY CONTROL PROGRAM

Public Law 110-246, signed into law on June 18, 2008, amended the Salinity Control Act creating the Basin States Salinity Control Program (BSP) to be implemented by the Secretary of the Interior through Reclamation (for additional information on the BSP, please refer to earlier annual reports).

Reclamation solicits projects through a FOA for both the Basinwide Program and the BSP. Through the FOA process, projects are ranked into a competitive range, but due to lack of funding not all projects in the competitive range are able to be funded through the Basinwide Program. Reclamation approves some of these projects to be funded through the BSP. Reclamation then decides whether to fund and manage these projects itself or to approve these projects to be funded and managed by the appropriate state agency through its agreement with the state agency.

1. Bureau of Reclamation

Reclamation decided to fund and manage two projects from the 2015 FOA.

a. Minnesota L-75 Lateral Salinity Control Project

Reclamation executed a cooperative agreement with the Minnesota L-75 Lateral Company in March 2016, and construction is scheduled to begin in April 2017. The project budget is $153,412 to pipe approximately 3,100 feet of existing, unlined earthen irrigation ditch located near Paonia, Colorado, and along the south side of the North Fork of the Gunnison River. This will result in an annual salt load reduction of approximately 129 tons to the Colorado River, at a cost effectiveness of $49.57 per ton. The piping project will consist of buried PVC pipe. It is expected to be completed in 2017.

b. Whiterocks and Mosby Canals Rehabilitation Project

The proposed project will eliminate about 10.2 miles of the open unlined Whiterocks Canal and 3.5 miles of the open unlined Mosby Canal for a combined length of about 13.7 miles. They will be replaced with a HDPE pipeline ranging in diameter from 36 inches to 16 inches. The salt load reduction estimate for the project is 1,635 tons per year and the estimated cost effectiveness is $61.50 per ton per year. A cooperative agreement was executed in September 2016 with the Whiterocks Irrigation Company in the amount of $2.41 million from the BSP. Funding in the amount of $1.97 million is being provided by a loan from the Utah Board of Water Resources. Construction is scheduled to begin in the fall of 2017 and be completed in 2019.

2. Colorado State Conservation Board

a. Clipper Zanni Project

Most of the construction on the Clipper Zanni Project was completed in 2016. Remaining construction and habitat replacement will be completed in 2017.

b. Ditch Mapping

Colorado received $34,000 in BSP funding to complete ditch mapping activities in Ouray County in the Lower Gunnison area, and to review and complete data for ditch mapping previously completed in other portions of the Lower Gunnison area. This project encountered setbacks from landowners that were resistant to allow access to their property and from insufficient funds to complete the work. The Colorado Water Conservation Board provided $18,000 to complete the project.

c. Grand Valley Wildlife Project

The Colorado State Conservation Board (CSCB) has contracted with Colorado Parks and Wildlife to fund approximately 491 acres of wildlife improvements along the Colorado River in the Grand Valley for a cost of $804,415, utilizing BSP special funding received from Reclamation in 2013. This project completes the Grand Valley wildlife habitat replacement obligation and is nearly finished with one

more year of weed control planned. $214,020 has been expended to date. Fifteen thousand dollars will be reserved to perform the remaining tasks and the remaining $389,488 will be de-obligated.

A similar project was recently proposed and approved for state wildlife land in close proximity to the main project. Reclamation obligated $19,000 from the unspent Grand Valley Wildlife Replacement funds to replace future habitat offset obligations.

d. Lower Gunnison Basin Salinity Program Coordinator

The Lower Gunnison Basin Salinity Program Coordinator has become the "go to" resource for off-farm irrigation system improvement projects, assisting interested ditch companies in securing funding for planning and implementing delivery system piping projects, and informing their water users of NRCS Salinity and Lower Gunnison Basin-Regional Conservation Partnership Program funding available for on-farm improvements. The coordinator provided grant application assistance to BSP and Basinwide Program participants, conservation districts, and other ditch companies to complete financing for salinity control related projects. The coordinator costs $69,000 per year (salary, benefits, and operational costs) and secured over $800,000 of additional funding to support Salinity Program projects.

3. Utah Department of Agriculture and Food

The Utah Department of Agriculture and Food (UDAF) received two projects from Reclamation's 2015 FOA to be funded under the BSP.

a. Antelope and North Laterals Salinity Project

UDAF has executed a grant agreement with the Sheep Creek Irrigation Company in Manila, Utah, to complete this project. This is a canal piping project with two laterals of the Sheep Creek Canal to control 1,474 tons of salt per year at a cost of $1.948 million. The irrigation company has retained an engineering firm to begin work on the final designs and the National Environmental Policy Act process has begun.

b. Rock Point Canal Project

UDAF has executed a grant agreement with Rock Point Irrigation Company to complete this project. The project is a rehabilitation project in the Vernal area to pipe the Rock Point Canal, controlling 740 tons of salt. The total project cost is $1.423 million, with $976,549 coming from the BSP. The irrigation company has retained an engineering firm to begin work on the final designs and the National Environmental Policy Act process has begun.

UDAF, through its agreement with Reclamation, continues to employ the Uintah Basin Salinity Coordinator, using BSP funds. The value of the coordinator position has been demonstrated by successful efforts to obtain four 2015 FOA projects. These projects were competitive because of the coordinator's efforts to confederate historically opposing companies into accepting unified systems that improve each company, as well as the significant cost share match being provided by local funding sources to buy down the cost per ton of salt control. Improvements with the Ute Tribe have also been made. It is anticipated that the tribe will submit future

FOA applications. UDAF feels that using BSP funds for this position has greatly benefited the salinity control program in the Uintah Basin area. The coordinator has also been successful in helping entities submit applications with the NRCS Regional Conservation Partnership Programs.

4. Wyoming Water Development Commission

A new agreement between Reclamation and the Wyoming Water Development Commission (WWDC) was put in place in 2016 to use BSP funds that will end in 2020. The new agreement is similar to the agreements with UDAF and CSCB. The agreement has a value of $2,800,000 for the construction of projects and salinity studies in Wyoming.

The WWDC provides state funding through grants and loans for water studies, master plans, and construction projects across Wyoming. WWDC project funding is provided to a public entity for projects including, but not limited to, transmission pipelines, storage, reservoirs, irrigation improvements, canal to pipe conversions, and system improvements. Day-to-day operations are managed by Wyoming Water Development Office (WWDO) staff. The WWDO construction division will be administering the construction and study components of the Wyoming BSP.

a. Eden Valley, Farson/Eden Pipeline Project

This project came through Reclamation's 2015 FOA. The project is for a canal to pipeline conversion project with the Eden Valley Irrigation and Drainage District. The project will convert approximately 6 miles of irrigation canal to pipeline. The project includes piping the Farson F-2, F-3, F-4 and F-5 laterals. The project budget is $4.39 million with $2.366 million in funding provided by the WWDC and $2 million provided by the Wyoming BSP. The project will result in salt control of 1,619 tons and a cost effectiveness of $52.11 per ton. Currently, the project has secured the services of an engineer and has entered the design phase of the project. The project is anticipated to be designed, permits secured, necessary reviews conducted, and ready for the fall 2017 construction season.

B. NATURAL RESOURCES CONSERVATION SERVICE SALINITY CONTROL PROGRAM

The USDA's Environmental Quality Incentives Program (EQIP), which currently provides the vehicle for USDA salinity control activities in the Colorado River Basin, is administered by the Natural Resources Conservation Service. In fiscal year 2016, $10 million was obligated for new EQIP contracts with individual entities to install salinity control measures. An additional $1.6 million was used to provide technical assistance (planning, engineering design, construction inspections, etc.) to these entities. Cost sharing from the Basin Funds is also available to assist producers and to conduct research, studies, and investigations for further implementation of the program. In 2016, approximately $5 million was provided from the Basin Funds.

Salinity control is currently being implemented by the NRCS in 12 authorized project areas: five in Colorado, five in Utah, and two in Wyoming.

1. Colorado

a. Grand Valley Unit

The NRCS considers its Grand Valley Project to be successfully completed. The salt control goal has been exceeded and habitat replacement is complete. The NRCS continues to accept applications to improve irrigation systems that result in additional salt control. In 2016, 19 new contracts were developed on 240 acres.

b. Lower Gunnison Basin Unit

The Lower Gunnison Basin Unit, initiated in 1988, is the largest of the USDA salinity control units and is located in Delta, Montrose, and Ouray counties. Over 171,000 acres are planned for treatment. Currently, about 68,000 acres have been treated. The application of salinity reduction and wildlife habitat replacement practices continues to be an integral part of implementation of the Lower Gunnison Basin Unit.

In 2016, 54 new contracts were developed on 2,000 acres for planned salt control of about 1,879 tons. The project is about 65 percent complete and controls approximately 121,000 tons of salt annually.

In addition to the EQIP salinity program, $8 million from the Regional Conservation Partnership Program was awarded to the Modernizing Agricultural Water Management in the Lower Gunnison River Basin Project that addresses water quality and quantity concerns within the Lower Gunnison Salinity Project area.

c. Mancos Valley Unit

The Mancos Valley Unit, initiated in 2004, is bounded by the San Juan National Forest to the north, Mesa Verde National Park to the east, and the Southern Ute Indian Reservation to the south. Currently, the NRCS has developed 56 salinity control contracts with landowners of which two were added in 2016. The project has achieved about 37 percent of the salt control goal of 11,940 tons.

d. McElmo Creek Unit

Implementation of the McElmo Creek Unit was initiated in 1990. Currently, about 64 percent of the salt control goal of 46,000 tons has been implemented. Twenty one new contracts were developed in 2016 on 409 acres.

e. Silt Area Project

The Silt Project, authorized in 2006, is Colorado's newest project. Through 2016, 2,326 tons of annual salt control have been implemented, or about 58 percent of the project goal.

2. New Mexico and Arizona

a. San Juan River Unit

For 30 miles downstream from Farmington, New Mexico, and on both sides of the San Juan River, lies 8,400 acres of irrigated cropland that is part of the Navajo Nation. This area is served by the San Juan River Dineh Water Users, Inc. irrigation

company. These lands contribute significant salt load to the San Juan River, and later to the Colorado River. The NRCS, working closely with Reclamation, provides technical and financial assistance to Native American farmers who plan to improve irrigation delivery and application. Off-farm delivery infrastructure is currently being improved with the assistance of a salinity control grant from Reclamation. When the off-farm construction is completed in 2017-2018, NRCS anticipates an increase in requests for its assistance to improve on-farm irrigation systems.

3. Utah

a. Green River Project

This Green River Project is Utah's newest project and was adopted in 2010 with a goal of controlling 6,540 tons of salt annually. Through 2016, about 20 percent of the salt control goal has been realized. The recently completed rehabilitation of the Tusher Diversion upstream of the town of Green River is expected to initiate additional requests for NRCS assistance within the project area.

b. Manila-Washam Area

In 2006, a salinity control plan and an environmental assessment were completed by the NRCS on irrigated lands near the community of Manila, Utah, along the border with Wyoming. The project would ultimately treat about 11,000 acres with a goal of reducing salt loading by about 17,000 tons annually. Reclamation has assisted in the improvement of most of the off-farm delivery systems to the project area so that water deliveries are now better managed with seepage, spillage, and wastage eliminated. Through 2016, 46 percent of the salt control goal has been reached. The wildlife habitat replacement requirements are currently deficient and the NRCS is taking additional efforts to secure additional habitat.

c. Muddy Creek Unit

In 2003-2004, the NRCS conducted planning activities for salt control in cropland areas irrigated from Muddy Creek near the town of Emery, Utah. The Muddy Creek Unit was officially approved in 2005. Plans for the project area include piping the current earthen ditches in order to deliver pressurized water to individual farms. Ultimately, the opportunity exists to convert about 6,000 acres of flood-irrigated cropland to sprinkled cropland. Through 2016, only 70 acres have been converted. The NRCS hopes to work closely with Reclamation to assist the irrigators to develop a competitive funding proposal that will allow the off-farm infrastructure to be improved.

d. Price-San Rafael Rivers Salinity Control Unit

Reclamation and the NRCS issued a joint environmental impact statement for the Price-San Rafael Rivers Salinity Control Unit in December 1993. The Record of Decision indicated that more than 36,000 acres of irrigated lands would receive salt control measures and that several hundred miles of earthen canals and laterals would be replaced with buried pipelines. Each agency has proceeded to implement control measures as its funding and authority allows. The larger units (Ferron, Wellington, Moore Group, Carbon Canal, and Huntington-Cleveland) have been substantially implemented; both on farm and off farm. The remaining Cottonwood

Creek Irrigation Company service area should be completed by 2018. In 2016, 42 new contracts were developed on 2,182 acres. At the end of 2016, the NRCS has assisted with implementation of more than 84,800 tons of salt control.

e. Uintah Basin Unit

Implementation of the USDA on-farm portion of the Uintah Basin Unit started in 1980. Side-roll and center pivot sprinkler systems predominate in the project area. In 2016, 35 new contracts were developed on 906 acres. Landowner participation has exceeded expectations to such an extent that the original salt control goal has been exceeded. Currently, more than 149,000 tons of annual salt control occurs on the irrigated agricultural lands.

4. Wyoming

a. Big Sandy River Unit

On-farm salinity control implementation has been underway on the Big Sandy River Unit since 1988. The original goal for salinity reduction is 70 percent complete and wildlife habitat replacement is complete, though there may have been some loss of habitat in recent years. More than 58,000 tons of annual salt control has been achieved. On this project, where practical, farmers have converted nearly all surface flood irrigation to low-pressure sprinkler irrigation systems for salinity control.

b. Henrys Fork River Unit

The Henrys Fork River Unit is the NRCS's newest salinity control project area; authorized in 2013. Through 2016, six contracts have been developed on 213 acres. Progress is expected to be slow in this project area due to the current low prices for irrigated alfalfa and grass hay, the predominate crops grown in the area.

5. Additional Projects

In 2010, the NRCS began to quantify the salt control being provided by Environmental Quality Incentives Program irrigation improvement contracts in areas outside of the approved project areas, but within the Upper Colorado River Basin. These have been named "Tier II" areas. In 2016, the Colorado NRCS developed seven new EQIP contracts for approximately $663,000 that will control 400 tons of salt annually when fully implemented.

C. BUREAU OF LAND MANAGEMENT SALINITY CONTROL PROGRAM

The BLM's Salinity Program is founded by the Colorado River Basin Salinity Control Act (1974, 1984) and its mission and multiple use management of public lands are mandated under the Federal Land Management Policy Act (FLMPA; 1976). The Act provides the management framework, collaborative network, and programmatic structure for complying with FLMPA on more than 53 million acres of public lands BLM manages within the Colorado River Basin. The BLM is committed to reducing salt and sediment as sourced from its public lands to the Colorado River through land management policies and practices. These policies and practices are intended to maintain or restore land health as reflected by key ecological attributes such as soil and site stability, watershed function, and biotic integrity.

Many land use activities such as livestock grazing, energy development, mining, recreation, timber production, and road management increase erosion and sediment transport. The BLM reduces these impacts and aims to maintain land health standards through best management practices using terms, conditions, and stipulations in land use authorizations; and requiring actions to restore lands upon completion of authorized activities. The BLM engages in many restoration activities for degraded ecosystems that contribute excessive sediment and salts to transport through Colorado River Basin watersheds. These activities include constructing and maintaining grade-control structures, spreader dikes, and retention structures; emergency stabilization and rehabilitation efforts after wildfires; removal of invasive plant species; channel stabilization and other riparian enhancements; maintaining road culverts; remediation of abandoned mine lands; and fire fuels reduction treatments among several other endeavors.

Salinity reductions across the 53 million acre-plus landscape continue to be a challenge to quantify and report on activities due to factors such as physical process understanding about mobilization and transport of salts from rangelands and the inability to conduct effectiveness monitoring for all projects. A computer tool is being funded and developed to assist in the quantification of sediment retention due to the vastness of BLM's lands and activities.

The BLM allocated $1,500,000 in 2016 to support projects specifically related to salinity control program objectives in its Colorado River Basin states. Since the Salinity Coordinator was hired in January 2013, the BLM Salinity Program has become very active and has taken a more invested approach toward salinity and sediment reduction and management actions. Significant progress has been made in these areas through fiscal year 2016 with approximately 126,000 verifiable tons of sediment retained on BLM lands as funded through the Salinity Program. Efforts are underway to verify all contributions retained on BLM lands. Primarily, the BLM has been accounting for sediment transport from terrestrial upland areas. However, the BLM Salinity Program has begun to include many other contributions to sediment erosion reduction. Traditionally there has not been a comprehensive way to account for all of the contributions made from the other BLM programs. However, the Salinity Coordinator is currently developing computer tools and using limited resources more efficiently and effectively.

As of 2013, the collaborative efforts of the BLM and Agricultural Research Service continue to thrive in a dynamic worldwide salinity bibliography through the National Agricultural Library. Additional funded work includes multiple rainfall sediment and salinity transport projects. Data are being collected from Utah, Colorado, and other locations and will continue to be collected through 2017. This work continues from the previous BLM- and Reclamation-funded work to collect physical data to validate computer tools being co-developed by the BLM and Texas Agricultural Experiment Station. Currently, there are five peer-reviewed scientific journal publications, several oral and poster presentations that have been given both domestically and internationally, and two USDA-Agricultural Research Service reports.

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Upper Colorado River Commission

APPENDIX A

Annual Financial Report

For the Year Ended
June 30, 2016

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Upper Colorado River Commission

Annual Financial Report

With Auditors' Report Thereon

Year Ended June 30, 2016

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Upper Colorado River Commission

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INDEPENDENT AUDITORS' REPORT

The Commissioners of the
Upper Colorado River Commission
Salt Lake City, Utah

Report on the Financial Statements

We have audited the accompanying financial statements of the governmental activities and each major fund information of the Upper Colorado River Commission as of and for the year ended June 30, 2016, and the related notes, to the financial statements, which collectively comprise the Commission's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities and each major fund information of the Upper Colorado River Commission as of June 30, 2016, and the respective changes in financial position thereof and the budgetary comparison for the general fund for the year then ended in conformity with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, and budgetary comparison information be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other lnformation

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the Upper Colorado River Commission's financial statements as a whole. The supplemental schedule of cash receipts and disbursements, and the supplemental schedule of expenses – budget to actual, are presented for purposes of additional analysis and are not a required part of the financial statements. These schedules are the responsibility of management and were derived from and relate directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the financial statements taken as a whole.

Ulrich & Associates, PC

October 5, 2016

This discussion and analysis is intended to be an easily readable analysis of the Upper Colorado River Commission (the Commission) financial activities based on currently known facts, decisions, or conditions. This analysis focuses on current year activities and should be read in conjunction with the financial statements that follow.

Financial Highlights

The overall assets of the Commission exceed it's liabilities by $1,526,972, an increase of $1,117,450 over the prior year. This increase is due to a one million dollar grant from the federal government for the System Conservation Pilot Program that was received at year end. The grant monies will be spent in the next fiscal year.

The Commission has established a reserved cash account with the Utah PTIF fund. This account is used to hold cash to pay the accrued unpaid leave upon the separation or retirement of employees. The Commission deposited $20,000 into the account in the current year.

Report Layout

Besides this Management's Discussion and Analysis (MD&A), the report consists of government-wide statements, fund financial statements, and the notes to the financial statements. The first two statements are condensed and present a government-wide view of the Commission's finances. Within this view, all Commission operations are categorized and reported as governmental activities. Governmental activities include basic services and administration. The Commission does not have any business-type activities. These government-wide statements are designed to be more corporate-like in that all activities are consolidated into a total for the Commission.

Basic Financial Statements

The Statement of Net Position focuses on resources available for future operations. In simple terms, this statement presents a snap-shot view of the assets the Commission, the liabilities it owes and the net difference. The net difference is further separated into amounts restricted for specific purposes and unrestricted amounts.

The Statement of Activities focuses gross and net costs of the Commission's programs and the extent to which such programs rely upon general revenues. This statement summarizes and simplifies the user's analysis to determine the extent to which programs are self-supporting and/or subsidized by general revenues.

The notes to the financial statements provide additional disclosures required by governmental accounting standards and provide information to assist the reader in understanding the Commission's financial condition

The MD&A is intended to explain the significant changes in financial position and differences in operation between the current and prior years. Significant changes from the prior year are explained in the following paragraphs.

Commission as a Whole

Government-wide Financial Statements

A condensed version of the Statement of Net Position follows:

Net Position at Year-end
June 30

	2016	2015
Cash & investments	$ 1,610,973	381,067
Capital assets (net)	38,508	41,550
Total assets	1,649,481	422,617
Current liabilities	84,968	10,696
Non-current liabilities	37,541	36,061
Total liabilities	122,509	46,757
Net position:		
Invested in capital assets	38,508	41,550
Unrestricted	417,430	334,310
Total net position	$ 455,938	375,860

During the year ended June 30, 2016 the biggest change in net position came about because of a new program for the System Conservation Pilot Program and the one million dollar federal grant received at year end to fund the project for another year.

A condensed version of the Statement of Activities follows:

Governmental Activities
For the year ended June 30

Revenues	2016	2015
Program Revenues		
Charges for Services	450	709
Assessments	443,317	380,210
Grants and Contributions	2,083,492	-
General Revenues		
Interest	3,663	2,470
Total Revenues	2,530,922	383,389
Expenses		
Administration	1,413,472	371,503
Change in net position	1,117,450	11,886
Beginning net position	409,522	363,974
Ending net position	$ 1,526,972	375,860

The increase in the assessment revenue and no significant increases in expenditures created an increase in the net position.

Capital Assets

At June 30, 2016 the Commission had $38,508 invested in capital assets, consisting primarily of a building and furniture & equipment. The change in capital assets during the year consisted of continued depreciation expense.

Capital Assets at Year-end

	2016	2015
Land	$ 24,159	24,159
Building	79,827	79,827
Improvements	2,207	2,207
Furniture & equipment	80,721	80,721
Subtotal	186,914	186,914
Less: Accumulated Depreciation	(148,406)	(144,748)
Capital assets, net	$ 38,508	42,166

Financial Contact

The Commission's financial statements are designed to present users (citizens, taxpayers, state governments) with a general overview of the Commission's finances and to demonstrate the Commission's accountability. If you have questions about the report or need additional financial information, please contact the Commission's secretary at 355 South 400 East, Salt Lake City, UT 84111.

Basic Financial Statements

Upper Colorado River Commission
Statement of Net Position
June 30, 2016

	Governmental Activities
Assets	
Cash & cash equivalents	
Operations	$ 479,192
Unpaid leave	60,747
Restricted cash	
SCPP	1,071,034
Capital assets	
Land	24,159
Building	79,827
Improvements other than building	2,207
Furniture & equipment	80,721
Less: accumulated depreciation	(148,406)
Total Assets	1,649,481
Liabilities	
Accounts payable	13,964
Retirement payable	1,187
Compensated absences	1,492
Prepaid Assessments	68,325
Total current liabilities	84,968
Noncurrent liabilities:	
Accrued compensated absences	37,541
Total noncurrent liabilities	37,541
Total Liabilities	122,509
Net Position	
Invested in capital assets	38,508
Restricted - SCPP	1,071,034
Unrestricted	417,430
Total Net Position	$ 1,526,972

See accompanying notes to the basic financial statements

Upper Colorado River Commission
Statement of Activities
For the Year ended June 30, 2016

	Expenses	Program Revenues: Charges for services	Program Revenues: Operating grants and contributions	Net Revenue and Changes in Net Position: Total
Governmental activities:				
General administration	$ 401,014	450	443,317	42,753
SCPP	1,012,458	-	2,083,492	1,071,034
Total governmental activities	1,413,472	450	2,526,809	1,113,787
General revenues:				
Interest				3,663
Total general revenues				3,663
Change in Net Position				1,117,450
Net Position - Beginning of Year				409,522
Net Position - End of Year				$ 1,526,972

See accompanying notes to the basic financial statements

Upper Colorado River Commission

Balance Sheet
Governmental Funds
June 30, 2016

	General Fund	SCPP Fund	Total
Assets			
Petty cash	$ 25	-	$ 25
Cash in bank	94,903	-	94,903
Utah public treasurers' investment pool			-
Operations	384,264	-	384,264
Unpaid Leave	60,747	-	60,747
	539,939	-	539,939
Restricted cash			
Cash in bank - SCPP	-	1,071,034	1,071,034
Total Assets	539,939	1,071,034	1,610,973
Liabilities			
Accounts payable	13,964	-	13,964
Accrued liabilities	1,187	-	1,187
Accrued benefits	1,492	-	1,492
Prepaid assessments	68,325	-	68,325
Total Liabilities	84,968	-	84,968
Fund Balance			
Restricted - SCPP	-	1,071,034	1,071,034
Assigned to:			
Unpaid leave	60,747	-	60,747
Unassigned	394,224	-	394,224
Total Fund Balance	454,971	1,071,034	1,526,005
Total Liabilities and Fund Balance	$ 539,939	1,071,034	$ 1,610,973

Reconciliation of the Statement of Net Position to the Balance Sheet

Amounts reported for governmental activities in the statement of net position are different because:	
Total fund balance reported above	$ 1,526,005
Capital assets used in governmental activities are not financial resources and, therefore, are not reported in the funds	38,508
Compensated absences are not due and payable in the current period and, therefore, are not reported in the funds	(37,541)
Net position of governmental activities (page 9)	$ 1,526,972

See accompanying notes to the basic financial statements

Upper Colorado River Commission
Statement of Revenues, Expenditures, and Changes in Fund Balance
Governmental Funds
For the Year Ended June 30, 2016

	General Fund	SCPP Fund	Total
Revenues			
Assessments	443,317	-	443,317
Grants	-	1,105,000	1,105,000
Supporters	-	978,492	978,492
Interest	3,663	-	3,663
Waternews subscriptions & refunds	450	-	450
Total Revenues	447,430	2,083,492	2,530,922
Expenditures			
Personal services	313,413	-	313,413
Travel	38,724	-	38,724
Current operating	38,754	62,744	101,498
Capital outlay	1,937	-	1,937
Conservation payments	-	949,714	949,714
Total Expenditures	392,828	1,012,458	1,405,286
Excess of revenues over expenditures	54,602	1,071,034	1,125,636
Fund Balance - beginning of year	400,369	-	400,369
Fund Balance - end of year	454,971	1,071,034	1,526,005

Reconciliation of the statement of Revenues, Expenditures and Changes in Fund Balances of Governmental Funds to the Statement of Activities

Net change in fund balance (as reported above)	1,125,636
Governmental funds report capital outlays as expenditures. However, in the statement of activities, the cost of those assets is allocated over their estimated useful lives as depreciation expense. This is the amount by which depreciation exceeded capital outlays in the current period.	(3,658)
The expense for accrued compensated absences reported in the statement of activities does not require the use of current financial resources and, therefore, are not reported as expenditures in governmental funds.	(4,528)
Change in net position of governmental activities (page 10)	1,117,450

See accompanying notes to the basic financial statements

Upper Colorado River Commission

Statement of Revenues, Expenditures, and Changes in Fund Balance
Budget and Actual - General Fund
For the Year Ended June 30, 2016

	Original & Final Budget	General Fund	Variance w/Final Budget
Revenues			
Assessments	$ 443,318	443,317	(1)
Interest	-	3,663	3,663
Waternews subscriptions & refunds	400	450	50
Total Revenues	443,718	447,430	3,712
Expenditures			
Personal services	351,518	313,413	38,105
Travel	36,000	38,724	(2,724)
Current operating	46,000	38,754	7,246
Capital outlay	5,200	1,937	3,263
Contingencies	5,000	-	5,000
Total Expenditures	443,718	392,828	50,890
Excess of revenues over expenditures	-	54,602	54,602
Fund Balance - beginning of year	400,369	400,369	-
Fund Balance - end of year	400,369	454,971	54,602

See accompanying notes to the basic financial statements

Upper Colorado River Commission

Statement of Revenues, Expenditures, and Changes in Fund Balance
Actual and Budget - System Conservation Pilot Program
For the Year Ended June 30, 2016

	Original & Final Budget	General Fund	Variance w/Final Budget
Revenues			
Grants	$ -	1,105,000	1,105,000
Supporters	-	978,492	978,492
Total Revenues	-	2,083,492	2,083,492
Expenditures			
Management	-	62,744	(62,744)
Conservation payments	-	949,714	(949,714)
Total Expenditures	-	1,012,458	(1,012,458)
Excess of revenues over expenditures	-	1,071,034	1,071,034
Fund Balance - beginning of year	-	-	-
Fund Balance - end of year	-	1,071,034	1,071,034

See accompanying notes to the basic financial statements

Note 1 - Summary of Significant Accounting Policies

A. Reporting entity

The Commission was formed pursuant to the terms of the Upper Colorado River Basin Compact on October 11, 1948, and consented to by the Congress of the Unites States of America by Act on April 6, 1949, as an administrative agency representing the Upper Division States of the Colorado Basin, namely Colorado, New Mexico, Utah, and Wyoming. The Commission consists of one commissioner representing each of the four states and one representing the United States of America. The activities of the commission are conducted for the purpose of promoting and securing agricultural and industrial development of the Upper Basin's water resources.

The commission has no component units that are included with this report.

B. Basis of Presentation - Government-wide financial statements

While separate government-wide and fund financial statements are presented, they are interrelated. The governmental activities column incorporates data from the governmental fund. The Commission does not currently have any business-type activities.

C. Basis of Presentation - Fund financial statements

The fund financial statements provide information about the Commission's funds. Statements for the governmental fund category is presented. The emphasis of fund financial statements is on major governmental funds, each displayed in a separate column. The Commission has two governmental funds, General and System Conservation Pilot Program, and both are reported as major funds in the fund financial statements.

D. Measurement focus and basis of accounting

Government wide financial statements

The accounting and financial reporting treatment is determined by the applicable measurement focus and basis of accounting. Measurement focus indicates the type of resources being measured such as current financial resources or economic resources. The basis of accounting indicates the timing of transactions or events for recognition in the financial statements.

The government-wide statements are prepared using the *economic resources* measurement focus and the accrual basis of accounting. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows.

The governmental fund financial statements are reported using the current financial resources measurement focus and the *modified accrual basis of accounting.* Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the government considers revenues to be available if they are collected within 60 days of the end of the current fiscal period. Expenditures generally are recorded when a liability is incurred, as under accrual accounting. However, debt service expenditures, as well as expenditures related to compensated absences, and claims and judgments, are recorded only when payment is due. General capital asset acquisitions are reported as expenditures in governmental funds. Issuance of long-term debt and acquisitions under capital leases are reported as other financing sources.

E. Budgetary Information

Annual budgets are prepared on the modified accrual basis of accounting and adopted as required by the compact. The Commission approves the annual budget in total and by major sub-items as identified in the statement of revenues, expenditures and changes in fund balance - budget and actual. The Executive Director has authority to transfer budget accounts within the sub-items with Commissioner approval required to transfer monies between expenditure categories. Currently no formal budget is adopted for the SCPP program.

F. Assets, liabilities, deferred outflow/inflows of resources, and net position/fund balance

Cash & cash equivalents

The government's cash and cash equivalents are considered to be cash on hand, demand deposits, and short-term investments with original maturities of three months or less from the date of acquisition.

Capital Assets and Depreciation

Capital assets, which include property and equipment, are reported in the governmental activities column in the government-wide financial statements. Capital assets are defined by the Commission as assets with an initial, individual cost of more than $1,000 and an estimated useful life in excess of one year.

Depreciation of capital assets is computed and recorded by the straight-line method. Estimated useful lives of the various classes of depreciable capital assets are as follows: buildings, 30 years; improvements, 10 to 15 years; furniture and equipment, 3 to 15 years.

Fund balance policies

Fund balance of governmental funds is reported in various categories based on the nature of any limitations requiring the use of resources for specific purposes. The Commission itself can establish limitations on the use of resources through either a commitment (committed fund balance) or an assignment (assigned fund balance).

Net Position / Fund Balance

Government-wide Financial Statements

Equity is classified in the government-wide financial statements as net assets and can be displayed in three components:

Invested in capital assets, net of related debt - Capital assets including restricted assets, net of accumulated depreciation and reduced by any debt related to the acquisition or improvement of the assets.

Restricted net position - Net position with constraints placed on the use either by (1) external groups or (2) law through constitutional provisions or enabling legislation.

Unrestricted net position - All other net positions that do not meet the definition of "restricted" or "invested in capital assets, net of related debt."

Fund Financial Statements

In the fund financial statements, governmental fund equity is classified as fund balance. Fund balance is further classified as Nonspendable, Restricted, Committed, Assigned, or Unassigned. Description of each classification is as follows:

Nonspendable fund balance - Amounts that cannot be spent because they are either (a) not in spendable form, or (b) legally or contractually required to be maintained intact.

Restricted fund balance - Amounts restricted by enabling legislation. Also if, (a) externally imposed by creditors, grantors, contributors, or laws and regulations of other governments, or (b) imposed by law through constitutional provisions or enabling legislation.

Committed fund balance - Amounts that can only be used for specific purposes pursuant to constraints imposed by formal action of the Commission's highest level of decision making

Assigned fund balance - Amounts that are constrained by the Commission's intent to be used for specific purposes, but are neither restricted nor committed.

Unassigned fund balance - Residual classification of the General Fund. This classification represents fund balance that has not been restricted, committed, or assigned specific purposes within the general fund.

Unpaid Compensated Absences

According to Commission policy each employee accrues annual leave based on years of service with the commission. Employees may accumulate a maximum of 30 days of unused annual leave, which is paid in cash upon termination of employment. The Commission's secretary may grant additional carryover to employees provided that: (1) the employee requests the carryover in writing prior to June 30, and (2) the employee uses the additional carryover within 90 days of the start of the fiscal year.

The Obligation for Compensated Absences has been broken down into two components; current and non-current. The current portion is classified as part of the general fund and is an estimate of the amounts that will be paid within the next operating year. The non-current portion is maintained separately and represents a reconciling item between the fund and government-wide presentations.

Note 2 - Stewardship, compliance, and accountability

Accounting and Reporting

The Commission is not required to report to any individual state or federal agency. Financial reports are given to each Commissioner and is reviewed by them. The Commission is exempt from federal income tax reporting under 501(c) (1) of the internal revenue code.

Note 3 - Detail notes on all activities and funds

Deposits and investments

The Commissioners have authorized the Commission to deposit funds in demand accounts at Wells Fargo Bank and with the Utah Public Treasurers' Investment Pool. Following are discussions of the Commission's exposure to various risks related to its cash management activities.

Deposits

Custodial credit risk - Deposits. In the case of deposits, this is the risk that in the event of a bank failure, the government's deposits may not be returned to it. As of June 30, 2016, $250,000 of the bank deposits are insured, the remaining $1,236,443 balance of deposits was exposed to custodial credit risk because it was uninsured.

Investments

The Utah State Treasurer's Office operates the Public Treasurers' Investment Fund (PTIF). The PTIF is available for investment of funds administered by any Utah public treasurer and is not registered with the SEC as an investment company. The PTIF is authorized and regulated by the Money Management Act (Utah Code , Title 51, Chapter 7). The Act established the Money Management Council which oversees the activities of the State Treasurer and the PTIF and details the types of authorized investments. Deposits in the PTIF are not insured or otherwise guaranteed by the State of Utah, and participants share proportionally in any realized gains or losses on investments.

The PTIF operates and reports to participants on an amortized cost basis. The income, gains, and losses of the PTIF, net of administration fees, are allocated based upon the participant's average daily balance. The fair value of the PTIF investment pool is approximately equal to the value of the pool shares.

Fair Value of Investments - The Commission measures and records its investments using fair value measurement guidelines established by generally accepted accounting principles. These guidelines recognize a three-tiered fair value hierarchy, as follows:

Level 1: Quoted prices for identical investments in active markets;
Level 2: Observable inputs other than quoted market prices; and,
Level 3: Unobservable inputs.

	Measurement		
Investments by fair value level	Level 1	Level 2	Level 3
Utah Public Treasurers' Investment Fund	-	445,011	-
Total investments measure at fair value	$ -	445,011	-

• Utah Public Treasurers' Investment Fund: application of the June 30, 2015 fair value factor, as calculated by the Utah State Treasurer, to the Entity's average daily balance in the Fund.

Interest rate risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. The Commission's policy for managing its exposure to fair value loss arising from increasing interest rates is to invest only with the Utah PTIF.

As of June 30, 2016, the Commission's investments had the following maturities:

	Investment Maturities (in years)		
Investment Type	Less than 1	1-5	6 or more
Utah Public Treasurers' Investment Fund	445,011	-	-
Total investments measure at fair value	$ 445,011	-	-

Credit risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The Commission's policy for reducing its exposure to credit risk is to comply with the State's Money Management Act, as previously discussed.

	Quality Ratings		
Investment Type	AA	A	Unrated
Utah Public Treasurers' Investment Fund	$ -	-	445,011
Total investments measure at fair value	$ -	-	445,011

Concentration of credit risk. The Commission's investment in the Utah Public Treasurer's Investment Fund has no concentration of credit risk.

Custodial credit risk - Investments. For an investment, this is the risk that, in the event of the failure of the counterparty, the Commission will not be able to recover the value of its investments that are in the possession of an outside party. The Commission is authorized to invest in the Utah Public Treasurer's Investment Fund (PTIF), an external pooled investment fund managed by the Utah State Treasurer and subject to the Act and Council requirements. The PTIF is not registered with the SEC as an investment company, and deposits in the PTIF are not insured or otherwise guaranteed by the State of Utah. The PTIF operates and reports to participants on an amortized cost basis. The income, gains, and losses, net of administration fees, of the PTIF are allocated based upon the participants' average daily balances.

Components of deposits and investments (including interest earning deposits) at June 30, 2016, are

Cash on deposit	$ 94,928
Utah State Treasurer's Investment Pool	445,011
Restricted cash - SCPP	1,071,034
Total	$ 1,610,973

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Capital Assets

Capital asset activity for the year ended June 30, 2016, is as follows:

	Balance at June 30, 2015	Additions	Disposals	Balance at June 30, 2016
Capital assets not being depreciated:				
Land	$ 24,159	-	-	24,159
Total capital assets not being depreciated	24,159	-	-	24,159
Capital assets being depreciated:				
Building	79,827	-	-	79,827
Improvements	2,207	-	-	2,207
Furniture & Equipment	80,721	-	-	80,721
Total capital assets being depreciated	162,755	-	-	162,755
Less accumulated depreciation for:				
Building	72,633	1,475	-	74,108
Improvements	2,207	-	-	2,207
Furniture & Equipment	69,908	2,183	-	72,091
Total accumulated depreciation	144,748	3,658	-	148,406
Total capital assets, being depreciated, net	18,007	(3,658)	-	14,349
Capital assets, net	$ 42,166	(3,658)	-	38,508

Depreciation expense of $3,658 was charged to the general administration activity of the Commission.

Note 4 - Other notes

Employee Retirement Plan

The Commission's employee pension plan is a 401(K) defined contribution plan which covers all of the present employees. The Commission contributes 7% of the employees' gross salaries. In addition, the Commission will match contributions made by employees up to a maximum of 3%. Accordingly, the maximum allowable contribution by the Commission is 10%. The employees are allowed to contribute up to the maximum allowed by law. The employer's share of the pension plan contribution for the year ended June 30, 2016 was $23,841, which includes $200 of administrative costs.

Risk Management

The Commission is exposed to various risks of loss related to torts; theft of, damage to, and destruction of assets; errors and omissions; and natural disasters for which the government carries commercial insurance.

Subsequent Events

Subsequent events have been evaluated through October 5, 2016 the date the financial statements were available to be issued. There have been no subsequent events that provide additional evidence about conditions that existed at the date of the balance sheet.

Supplemental Schedules

Upper Colorado River Commission
Supplemental Schedule of Cash Receipts and Disbursements
For the Year Ended June 30, 2016

Cash at June 30, 2015		$ 412,091
Cash Receipts:		
Assessments	511,642	
Interest	3,663	
Refunds	0	
Waternews Subscriptions	450	
		515,755
Cash Disbursements:		
Personal Services	313,403	
Travel	31,683	
Current Operating	39,184	
Capital Outlay	3,637	
Contingency	-	
		387,907
Cash at June 30, 2016		$ 539,939

Upper Colorado River Commission
Detail of Personal Services and Current Operating Expenditures - Budget to Actual (Accrual Basis)
For the Year Ended June 30, 2016

	Budget	Actual	Variance w/Final Budget
Summary of Personal Services with Budget Comparisons			
Executive director	$ 112,429	114,118	(1,689)
Administrative secretary	35,711	35,711	-
General counsel	91,926	91,926	-
Consulting services	34,130	1,245	32,885
Social security	18,365	18,216	149
Pension fund contributions	24,457	23,841	616
Employee medical insurance	34,500	28,356	6,144
	$ 351,518	313,413	38,105
Summary of Current Operating Expenditures with Budget Total Comparison			
Audit and accounting	$ 4,700	4,550	150
Building repair & maintenance	4,500	2,933	1,567
Insurance	3,500	2,179	1,321
Janitorial	1,400	1,045	355
Library	8,000	8,260	(260)
Meetings, including reporter	2,500	3,827	(1,327)
Memberships and registrations	3,400	1,458	1,942
Office supplies and postage	3,500	2,728	772
Printing	4,200	3,291	909
Telephone	4,900	4,126	774
Utilities	5,400	4,357	1,043
	$ 46,000	38,754	7,246

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Upper Colorado River Commission

APPENDIX B

BUDGET

Fiscal Year Ending June 30, 2017

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APPROVED BUDGET FY 2017
UPPER COLORADO RIVER COMMISSION
Fiscal Year ending June 30, 2017
Held at Zermatt Resort, Midway Utah

	As Approved 6/2/2016
Personnel Costs inc. pension, SS & health	400,102.00
staff salaries, benefits and pension	
Travel	37,000.00
Current Expense	46,000.00
Janitor	1,500.00
Income (Newsletter)	-400.00
Funding to capitalize leave sinking fund	
Capital Expense	5,500.00
Contingency	5,000.00
TOTAL	494,702.00

2017 State Assessments

	Percents	
Colorado	51.75%	256,008.00
New Mexico	11.25%	55,654.00
Utah	23%	113,781.00
Wyoming	14%	69,258.00
Total		494,701.00

Note: Budget will be reviewed and adjusted as needed prior to July 1, 2017

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Upper Colorado
River Commission

APPENDIX C

RESOLUTIONS

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RESOLUTION

of the

UPPER COLORADO RIVER COMMISSION

Honoring Dallin W. Jensen

WHEREAS, Dallin W. Jensen has served as an Alternate Upper Colorado River Commissioner for Utah since 1993;

WHEREAS, Dallin W. Jensen's professional involvement with Colorado River issues dates to the early 1960's; and

WHEREAS, Dallin W. Jensen served as an Assistant Utah Attorney General from 1963 to 1988, including serving as Utah's Solicitor General from 1983 to 1988; and

WHEREAS, during his tenure as an Assistant Attorney General Dallin W. Jensen was the State's lead legal advisor on Colorado River matters and counselled Utah's Interstate Water Commissioner; and

WHEREAS, after Dallin W. Jensen left employment with the State of Utah and entered private law practice his involvement with Colorado River matters continued for many years; and

WHEREAS, Dallin W. Jensen is one of the most knowledgeable and well respected water attorneys in Utah; and

WHEREAS, Dallin W. Jensen has volunteered a significant amount of personal and professional time to assist Utah and other western states to resolve interstate water issues; and

WHEREAS, Dallin W. Jensen has honorably and tirelessly represented the State of Utah in matters coming before the Commission, which representation has generated the respect of the Commission, its advisors and staff; and

WHEREAS, as a result of his careful study of issues, keen intellect, wit, wisdom and unique perspective and personality, Dallin W. Jensen has been a respected and trusted Commission Advisor and Alternate Commissioner; and

WHEREAS, Dallin W. Jensen has recently retired from his position as Alternate Upper Colorado River Commissioner for Utah.

NOW, THEREFORE, BE IT RESOLVED that the Upper Colorado River Commission, at its Meeting held in Midway, Utah, on June 2, 2016, does hereby express the gratitude and appreciation of the Commission, its staff, and others for the untiring service and wise legal counsel rendered by Dallin W. Jensen in addressing many legal, policy and political water resource problems that have confronted the Commission during his tenure as an Alternate Upper Colorado River Commissioner; and

BE IT FURTHER RESOLVED that the Upper Colorado River Commission, its advisors, and staff sincerely wish Dallin W. Jensen, his wife, Barbara, and their family, the very best of health, happiness and prosperity in all of their future endeavors; and

BE IT FURTHER RESOLVED that the Executive Director of the Upper Colorado River Commission is directed to transmit copies of this Resolution to Dallin W. Jensen and to the Governor of the State of Utah.

CERTIFICATE

I, DON A. OSTLER, Executive Director and Secretary of the Upper Colorado River Commission, do hereby certify that the above Resolution was unanimously adopted by the Upper Colorado River Commission at its Meeting held in Midway, Utah on June 2, 2016.

WITNESS my hand this 2nd day of June, 2016.

DON A. Ostler
Executive Director and Secretary

RESOLUTION OF THE UPPER COLORADO RIVER COMMISSION

Regarding the Memorandum of Understanding Concerning the Upper Colorado River Basin and the Development of a Climate Station Network

WHEREAS, the four States of the Upper Division (Colorado, New Mexico, Utah and Wyoming), through the Upper Colorado River Commission (UCRC), and in cooperation with the U.S. Department of Interior, Bureau of Reclamation (Reclamation), initiated a study to assess and improve consumptive use estimates from irrigated agricultural lands in the Upper Colorado River Basin; and

WHEREAS, that study, "Assessing Agricultural Consumptive Use in the Upper Colorado River Basin" (Phase I, December 2013) and Phase II (anticipated 2016), resulted in a recommendation that an Upper Colorado River Basin Network (UB Network) of weather stations be formally identified for the purpose of providing information for consumptive use estimates from irrigated agricultural lands; and

WHEREAS, the data collected from the UB Network will be utilized in ongoing studies associated with assessing consumptive use calculations, which studies are important to the individual states, the UCRC and Reclamation; and

WHEREAS, the identified UB Network consists of existing stations, existing stations with necessary upgrades to meet the standards set by American Society of Civil Engineers[1], and new stations which will be installed in accordance with the same standards; and

WHEREAS, given the time and resources spent on the Phase I and II studies and the upgraded and newly installed stations, as well as the importance of the UB Network for consumptive use estimates in the Upper Colorado River Basin, the parties to the Memorandum of Understanding (MOU) want to ensure the stations will continue to be operated and maintained to an agreed upon level of standards and that all collected data will be made available to any and all users in a consistent format; and

WHEREAS, the parties desire to enter into a MOU to outline the necessary funding levels and funding sources, as well as staffing resources, they estimate are needed to set up and operate the described UB Network over the next 10 years (i.e. through 31 December, 2025).

NOW, THEREFORE, BE IT RESOLVED that the UCRC affirms the importance of the proposed UB Network in providing data vital to accomplishing tasks assigned to the UCRC by the Upper Colorado River Basin Compact; and

[1] American Society of Civil Engineers – Environmental and Water Resources Institute (ASCE-EWRI). 2005. The ASCE Standardized Reference Evapotranspiration Equation. By Richard G. Allen (editor), Ivan A. Walter (editor), Ronald L. Elliott (editor), Terry A. Howell (editor), Daniel Itenfisu (editor), Marvin E. Jensen (editor), and Richard L. Snyder (editor), EWRI, Reston, VA. Prepared by the Task Committee on Standardization of Reference

BE IT FURTHER RESOLVED that the UCRC authorizes its Executive Director to sign the Memorandum of Understanding Concerning the Upper Colorado River Basin and the Development of a Climate Station Network, thus making the UCRC a party to the MOU.

CERTIFICATE

I, DON A. OSTLER, Executive Director and Secretary of the Upper Colorado River Commission, do hereby certify that the above Resolution was unanimously adopted by the Upper Colorado River Commission at its Meeting held in Las Vegas, Nevada on December 16, 2015.

WITNESS my hand this 5th day of January, 2016.

DON A. OSTLER
Executive Director and Secretary

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Upper Colorado
River Commission

APPENDIX D

TRANSMOUNTAIN DIVERSIONS

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TRANSMOUNTAIN DIVERSIONS FROM COLORADO RIVER BASIN IN COLORADO
2007 - 2016

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	10YEAR AVERAGE
TO PLATTE RIVER BASIN											
Grand River Ditch	20,432	22,098	19,385	14,033	17,080	9,832	17,692	15,490	12,641	14,070	16,823
Eureka Ditch	0	0	0	0	0	0	0	0	0		0
Alva B. Adams Tunnel	233,858	287,330	243,307	225,799	247,800	292,314	237,200	203,300	113,014	242,900	235,704
Berthoud Pass Ditch	720	702	727	534	841	403	558	600	366	738	629
Moffat Water Tunnel	43,341	76,912	44,455	31,034	51,780	43,749	57,781	18,500	26,828	26,450	47,941
Boreas Pass Ditch	187	171	209	181	237	4	103	181	113	119	156
Vidler Tunnel	714	1,059	1,285	954	400	441	291	670	668	380	712
Harold D. Roberts Tunnel	41,392	76,912	57,286	54,280	79,310	115,972	84,842	13,550	8,870	37,470	64,382
Straight Creek Tunnel	226	286	267	218	347	183	225	322	291	265	271
TO ARKANSAS RIVER BASIN											
Hoosier Pass Tunnel	6,121	10,965	10,230	10,345	3,137	4,586	9,295	9,370	6,493	7,820	8,282
Columbine Ditch	1,830	87	78	352	230	673	1,350	2,408	1,348	926	1,030
Ewing Ditch	1,040	1,440	1,200	919	1,492	257	769	1,553	711	466	1,034
Wurtz Ditch	2,360	1,280	2,920	1,690	3,246	803	1,639	3,398	499	1206	2,076
Homestake Tunnel	20,880	26,820	50,510	9,010	32,231	43,350	19,495	17,771	4,185	2,143	25,674
Twin Lakes Tunnel	54,470	64,540	58,740	46,810	66,326	23,250	37,782	62,747	17,650	17,814	48,699
Charles H. Boustead Tunnel	55,220	90,790	83,840	56,660	99,804	13,960	47,019	81,010	70,731	31,366	66,137
Busk-Ivanhoe Tunnel	4,310	4,880	3,320	3,250	4,039	2,990	4,128	5,852	2,554	2,400	4,015
Larkspur Ditch	397	461	375	234	310	48	64	305	517	177	293
TO RIO GRANDE BASIN											
Tarbell Ditch	993	902	511	744	578	185	424	920	0	0	549
Tabor Ditch	1,270	1,050	827	506	591	347	361	1,020	1,387	1,020	816
Treasure Pass Ditch	200	121	262	183	262	213	180	245	303	319	204
Don La Font Ditches No. 1 & 2	269	218	154	22	296	184	309	229	309	347	199
Williams Creek-Squaw Pass Ditch	466	328	257	303	395	337	296	384	517	318	364
Pine River-Weminuche Pass Ditch	577	350	352	274	307	244	525	448	934	639	440
Weminuche Pass Ditch	1,050	743	847	653	229	219	718	1,270	2,918	2,020	889
TOTAL	492,323	670,445	581,344	458,988	611,266	554,545	523,046	441,543	273,849	391,373	527,320

TRANSMOUNTAIN DIVERSIONS FROM COLORADO RIVER BASIN IN COLORADO TO RIO GRANDE BASIN IN NEW MEXICO

2007 - 2016	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	10 Year AVERAGE
San Juan-Chama Diversions	118,860	145,946	106,382	132,458	92,826	51,775	40,953	61,963	94,048	94,310	91,693

TRANSMOUNTAIN DIVERSIONS FROM COLORADO RIVER BASIN IN UTAH
2007 - 2016

TO GREAT BASIN	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	10 YEAR AVERAGE
Broadbent Supply Ditch (Wyoming)	1,551	2,044	1,455	994	367	377	507	830	1,000	1,061	1,034
Fairview Tunnel	1,515	2,630	1,429	1,300	2,032	2,175	1,881	2,078	1,332	2,241	1,894
Ephraim Tunnel	3,000	3,000	4,221	7,120	1,522	2,145	1,742	2,678	3,412	1,621	3,337
Spring City Tunnel	2,755	2,755	2,800	2,850	4,908	3,421	4,023	4,344	4,171	3,736	3,503
Central Utah Project, Bonneville Unit*	33,606	38,834	37,229	33,233	39,780	27,817	36,437	43,815	44,345	41,982	36,871
Hobble Creek Ditch	0	0	0	0	0	0	0	0	0		0
Strawberry-Willow Creek Ditch	0	0	0	0	0	0	0	0	0		0
Strawberry Water Users Association*	68,906	86,297	45,971	65,740	38,418	71,817	69,600	60,723	63,264	63,499	61,853
Duchesne Tunnel	29,496	26,607	29,492	27,128	10,581	20,712	24,144	42,769	29,638	35,577	26,457
TOTAL	140,829	162,167	122,597	138,365	97,607	128,463	138,334	157,238	147,163	149,717	134,694

TRANSMOUNTAIN DIVERSIONS FROM GREAT BASIN IN UTAH TO COLORADO RIVER BASIN IN UTAH
2007 - 2016

Tropic and East Fork Canal	4,469	5,319	4,258	5,329	4,667	5,100	5,640	3,115	4,444	9,648	4,723

TRANSMOUNTAIN DIVERSIONS FROM COLORADO RIVER BASIN TO NORTH PLATTE BASIN IN WYOMING 2007 - 2016	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	10 YEAR AVERAGE
City of Cheyenne	12,061	18,519	10,063	11,608	5,262	5,754	12,784	8,063	5,945	7,553	10,694

TRANSMOUNTAIN DIVERSIONS FROM COLORADO RIVER BASIN 2007 - 2016	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	10 YEAR AVERAGE
TOTAL	762,704	994,857	819,228	739,190	805,395	738,537	712,577	668,791	519,660	636,405	762,779

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