RECLAMATION
Managing Water in the West

The Colorado River Documents 2008

U.S. Department of the Interior
Bureau of Reclamation

September 2010

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Katherine Ott Verburg

U.S. Department of the Interior
Bureau of Reclamation
Lower Colorado Region

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Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

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

FOREWORD

Michael L. Connor
Commissioner, Bureau of Reclamation

The Colorado River Documents 2008 chronicles key events and activities undertaken since 1979 by the Bureau of Reclamation on behalf of the Secretary of the Interior to address the pressing issues faced by Colorado River Basin water users and managers. My predecessor, Robert W. Johnson, deserves great credit for initiating this valuable update. Great credit also goes to Secretary of the Interior Ken Salazar for supporting this project's completion.

Like the three volumes that preceded it in 1933, 1948, and 1978, this volume also details the political, legal, institutional, and other instruments developed to address these issues. Reflective of its era, this volume has an increased focus on coordinated operations of the river in both the Upper and Lower Basins, on environmental matters, on the relationship with Mexico, and on Native American water settlements.

This volume will be an invaluable resource, but it is fundamentally a historical record and we have already turned our eyes to the future. It is as important for Reclamation to identify and address, or prepare ourselves to address, the challenges we face today and will face in the next 30 years as it was for our predecessors to meet the challenges of yesterday. If history teaches us anything, it is that there always will be new challenges to face in the Colorado River Basin.

Today, we face a challenge perhaps more daunting than any the Basin has seen in modern history – a continuing drought that already has resulted in the driest 10-year period in the river's 100-year-plus historical record. Perhaps more importantly, we face the potential of substantial changes in the climate and a significant decrease in the river's water supply.

We also are faced with the challenge of developing new and more efficient energy technologies and resources, such as solar, wind, biomass and geothermal, to help meet the Basin's coming needs and the challenge of integrating the development of these energy resources with the prudent use of limited water supplies. We must find new ways to stretch existing water supplies to support the water and energy demand of a growing population, while also addressing the Basin's important environmental and recreational needs.

While pursuing these goals, we cannot and will not neglect our responsibilities to the land, or to the Basin's Native American tribes and communities – we must protect the Basin's treasured landscapes, and empower its Native American

communities to develop and use their natural resources. This volume reviews the Native American water settlements of the 30-year period from 1979 through 2008 in this Basin and provides tangible proof of the Department of the Interior's long-standing commitment to secure water supplies for Native American communities, a commitment which remains vital today.

We must do more to engage our youth in natural resources management and protection. While confronting, evaluating, and addressing today's challenges is our immediate responsibility, we also must prepare those who will follow us to confront and surmount the challenges they will face. Successful river management requires a keen awareness of, and sensitivity to, the multiple interests which must be balanced as each new issue arises. Such awareness is best developed over a substantial period of time and through hands-on personal experience. Involving today's youth will be essential to achieving future success in managing the river.

The development, management, and protection of water and related resources is the fundamental core of Reclamation's mission. Since taking office early in 2009, this Administration has worked diligently to advance these goals to increase the certainty that the Colorado River Basin will have adequate water and power supplies to meet pressing municipal, agricultural and environmental needs; that these will be dependable, sustainable supplies; and that the Basin can withstand droughts.

To achieve these goals, Reclamation will continue to seek, develop, and adopt new technologies, processes, and operations to respond to climate change and other challenges. Through research, innovation, creativity, and collaboration with stakeholders throughout the Basin, we will strive to achieve these goals.

Fortunately, even as this volume is being finalized, the tools and authorities available to Reclamation to address current and future challenges are increasing.

For example, working with the Secretary's Office of Indian Water Rights, we are leading the implementation effort for the Navajo San Juan Settlement in the San Juan River Basin. The Omnibus Public Land Management Act of 2009 (Public Law No. 111-11) authorized the settlement of Navajo Nation water rights in the San Juan River Basin in New Mexico, which includes construction of the Navajo-Gallup Water Supply Project (NGWSP). The Act also laid the foundation for additional future settlements in the Colorado River Basin.

Secretary of the Interior Ken Salazar signed the Record of Decision for the NGWSP on October 1, 2009, marking a significant step towards implementation of the water rights settlement. Negotiations to finalize the Navajo San Juan settlement agreement and settlement contract are underway and are expected to be completed by December 31, 2010.

Construction of the NGWSP is scheduled to begin in FY2012, subject to appropriations. Once completed, the project will provide a reliable municipal and industrial and domestic water supply for the eastern section of the Navajo Nation, alleviating the health impacts and other issues associated with hauling water. The project is also expected to serve the southwestern part of the Jicarilla Apache Nation and the City of Gallup, New Mexico.

We also are engaged in a binational process with the Mexican government, the Colorado River Basin States, and non-governmental entities in an effort to identify holistic and innovative measures that could be implemented to ensure the river is able to continue to meet the environmental, agricultural, and urban demands of both the United States and Mexico into the future.

Through a Core Group formed by the International Boundary and Water Commission, several potential cooperative actions that might be taken jointly or individually by each Nation are being examined.

Progress has also been made through a partnership with the three largest municipal water supply entities in the Southwest to conduct a one-year pilot run of the Yuma Desalting Plant, which began in 2010. The pilot run will provide real-time operating information essential to determining the plant's capability to reliably produce water that could be used for a multitude of purposes at some future date.

Finally, Public Law No. 111-11 also included the Science and Engineering to Comprehensively Understand and Responsibly Enhance (SECURE) Water Act.

The SECURE Water Act provides for systematic data-gathering, research and development associated with the water resources of the United States to ensure sufficient quantities of water to support increasing populations, economic growth, irrigated agriculture, energy production, and protection of aquatic ecosystems. Through the Department's Water Conservation Initiative and the Basin Study Program, current and future water supply and demand imbalances throughout the Colorado River Basin are being analyzed, and potential options for solving those imbalances are being identified and evaluated.

As we move into the future, the Obama Administration is committed to continuing to work with all Colorado River Basin stakeholders - the Basin States, Native American tribes and communities, non-governmental organizations, Mexico, the water and power communities, and other interested parties - to address and resolve the challenges that have been identified, or that may arise unexpectedly.

I learned about the value of water while growing up in Las Cruces, New Mexico, and I am dedicated to helping the West, and the Colorado River Basin, meet its water needs. I recognize the historic feats that have been accomplished in this

Basin, many of which are documented in this volume, feats that so amply demonstrate the willingness of a diverse group of interests to collaborate to develop and initiate solutions to complex issues. This approach holds with it the future of the Colorado River Basin. I look forward to being part of an organization and an Administration committed to adding to this astonishing list of accomplishments.

PREFACE

Robert W. Johnson
Commissioner, Bureau of Reclamation 2006-2009

The Colorado River is one of the most important natural resources in the United States. Approximately 1,400 miles long, running through seven States and the country of Mexico, the river and its tributaries provide immeasurable economic and ecological value. The river drains roughly $1/12^{th}$ of the land area of the contiguous American States. It provides drinking water to more than 25 million people, irrigates in excess of 2 million acres of farmland, produces 10 billion kilowatt-hours of hydroelectricity annually, runs through seven national parks and recreation areas allowing for over 10 million visitor days of recreation activity each year, and provides untold habitat for fish and wildlife.

The importance of the river to the region that it serves is underscored by the history of the river's development and the associated legal framework that governs its management.

Over 85 years have passed since the seven Basin States came together at Bishop's Lodge to sign the Colorado River Compact. Over 80 years have passed since the United States Congress authorized the Secretary of the Interior to construct Hoover Dam. Over 45 years have passed since the United States Supreme Court entered its opinion in *Arizona* v. *California*. These events forever altered the course of development and the quality of life in the Colorado River Basin States of Arizona, California, Nevada, Colorado, New Mexico, Utah, and Wyoming.

We are fortunate that those who came before us struggled both mightily and successfully to build a strong foundation and an enduring framework to confront and resolve the challenges of our time. Their history has been previously chronicled by the United States Department of the Interior in volumes published in 1933, 1948, and 1978. It is with both pleasure and pride that the Bureau of Reclamation shares with you this volume, fourth in the series, identifying the milestones in Federal management of the Colorado River from the period 1979 through 2008.

The last 30 years have seen significant additions to the Law of the River. Particularly noteworthy is that the body of law governing the river has proved to be flexible, allowing river management to adapt to accommodate social and economic change. These changes in river management have been carefully integrated into the existing legal framework to provide a seamless web that respects the historical rights and obligations already in existence and conforms to statutory, treaty, and decree requirements.

The Colorado River serves the seven Basin States, two countries, numerous Native American tribes and communities, and hundreds of water and power users, and is of interest to a wide variety of environmental and recreational interests. These stakeholders do not always see eye-to-eye, and changes in river management can be difficult, time consuming, and full of conflict. Conflict in the form of litigation occurs from time to time but, for the most part, change has occurred through negotiation, compromise, and consensus.

This period of consensus has been remarkable. All involved deserve much credit for their ability to find solutions to difficult issues and conflicting needs. This period is remarkable for a growing awareness among Federal managers and non-Federal stakeholders that Upper Basin and Lower Basin interests are deeply intertwined and cannot be successfully managed in isolation. This period is remarkable for the growing awareness within the Basin States that replacing conflict with communication leads to understanding and, increasingly, to cooperation. Through communication and cooperation, a developing regional awareness has emerged, with each Basin State far more attuned to the water management challenges faced by the others, each better able to perceive the common good.

This period is remarkable for the number of Native American water rights settlements achieved through the use of Colorado River water supplies. This period is also remarkable for the heightened awareness of environmental concerns in Colorado River management – and for the successful development of mechanisms that address the requirements of the Law of the River and Federal and State environmental laws. This period is further remarkable for the heightened level of interaction with Mexico through the International Boundary and Water Commission.

What has made these achievements possible? The unique aspects of the Colorado River management framework allow for the development of consensus solutions.

First, the foundational documents, as important as they are, are not the key. The Colorado River Compact, written in 1922, is a vital document today because the people of the seven Basin States continue to come together on a regular basis, to take the time to express their concerns and to learn the concerns of others. It is foundational relationships – people talking to people, calm or angry, isolationist or visionary, knowledgeable or not – that make the difference. There is a longstanding relationship among most of the parties involved with the Colorado River – many interests are represented by people with 20 or 30 years of experience dealing with particular issues. It is through these human interactions that knowledge builds, the edges of conflict soften, and consensus begins to form. The Colorado River Compact is a powerful document but, in essence, it is a rulebook and how the game is played depends greatly upon the players.

Second, the role of the Secretary of the Interior is an essential ingredient in the success of Colorado River management.

Many of the achievements of these last 30 years are the direct result of the leadership provided by the Secretary. The Secretary controls and operates most of the dams, reservoirs, and diversion facilities on the river. The Secretary serves as water master for the lower Colorado River, administers the Endangered Species Act, carries out Native American trust responsibilities, and oversees the national parks and recreation areas located along the river. The Secretary's substantial role in the river's management provides a central focus for decisionmaking. By judicious use of that authority, the Secretary can work carefully with all parties to develop consensus. This stands in stark contrast to many other river systems that have a less well defined and a more dispersed authority for decisionmaking, which may be less effective in the development of consensus.

It is during this period that demand in the Lower Basin States began to exceed supply. From here forward, the focus of the Federal government and of all non-Federal stakeholders must be on exceptionally prudent water management to ensure the reasonable, beneficial, and lawful use of our precious but limited Colorado River supplies.

This volume, *The Colorado River Documents 2008*, captures the essence of the past three decades in a manner that both reflects the challenges and accomplishments of the past and provides a useful guide for the future. Without the unprecedented cooperation of the last 30 years, the story might have been far different. Congratulations to all who have had a part in this story.

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[1] Titles abbreviated.

[2] Appended courtesy of Papers of Delph E. Carpenter and Family, Water Resources Archive, Colorado State University.

[3] Appended courtesy of History and Archives Division, Arizona State Library, Archives and Public Records, Governor Sidney P. Osborn, February 9, 1944, Box 118E, Folder 14, Contract for Delivery of Water, Boulder Canyon Project, RG1 Governor's Files.

[4] Representative original executed by MWD. Each party separately ratified the agreement, with PVID including a reservation of right with its ratification. A copy of PVID's original is included among the supplemental documents on the DVD accompanying this volume.

[5] Reprinted from *The Hoover Dam Documents 1948*.

[6] Title II was later amended.

LIST OF SUPPLEMENTAL DOCUMENTS ON DVD[1]

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Arizona v. *California*

DVD Supplement 1: *Arizona* v. *California*, Special Master Rifkind, Report (1960)
DVD Supplement 2: *Arizona* v. *California*, Opinion (1963)
DVD Supplement 3: *Arizona* v. *California*, Decree (1964)
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[1] Titles abbreviated. Files in Adobe Portable Document Format (PDF).

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POWER

ACKNOWLEDGEMENTS

This volume was written with the able assistance and whole-hearted support of countless individuals within the United States Department of the Interior. Those especially deserving of mention within the Bureau of Reclamation include Michael L. Connor, Commissioner; Lorri Gray-Lee, Regional Director of the Lower Colorado Region; Larry Walkoviak, Regional Director of the Upper Colorado Region; and the legions of Reclamation staff without whom this volume would not have been possible.

Katherine Ott Verburg

INTRODUCTION

The Law of the River is an ever-evolving compendium of documents relating to the management of the Colorado River. On behalf of the Secretary of the Interior (Secretary), the Bureau of Reclamation operates and manages major dams, reservoirs, diversion works, and other facilities on the Colorado River. In February of 1933, the Federal government collected and published *The Hoover Dam Power and Water Contracts and Related Data*, bringing together the initial set of Law of the River documents governing the management of the Colorado River. A second volume, *The Hoover Dam Documents 1948*, was published 15 years later, followed in 30 years by a third volume, *Updating the Hoover Dam Documents 1978*. This new volume, *The Colorado River Documents 2008*, brings the series forward another 30 years, covering events through December 31, 2008.

This volume is a reference work, providing a broad overview of Federal actions spanning three decades. Although considerable effort has been put into verifying the material presented here, readers are strongly encouraged to turn to the underlying source materials, many of which may be found in the Appendix. This volume, together with the 1933, 1948, and 1978 volumes, appears on a DVD located in a pocket in the inside back cover, with the appendices to each volume also included. Also found on the DVD are selected Supplemental Documents discussed in this volume. In addition, the DVD contains a folder of the source documents for the Appendix, without the headers or footers added in this volume.

A List of References appears at the end of each chapter. Documents appearing in the List of References which have been included in the Appendix are designated as such. Documents appearing in the List of References which have been included in the Supplemental Documents and are only on the DVD are designated as such.

The List of References is organized in categories according to the nature of the document or authority referenced, with materials listed in chronological order under each category. These categories are: Treaties, Interstate Compacts, and Federal Statutes; Federal Court Decisions; Federal Regulations; Federal Register Notices; Records of Decision (RODs); Contracts and Agreements; Reports; Letters; Memoranda; and Other.

The Appendix to this volume is organized in categories relating to Colorado River management. These categories are: Colorado River Water Distribution; Water Regulations and Policies for Lower Division States; Colorado River Operations; Environment; and Power. The Supplemental Documents appearing on the DVD accompanying this volume are also organized in these categories.

An index of the Supplemental Documents on the DVD follows the Table of Contents.

All references in this book to Federal statutes or regulations are to those statutes and regulations as amended or modified through the end of 2008 unless otherwise evident from the context of the discussion.

Disclaimer

This volume is a reference work. Nothing in *The Colorado River Documents 2008* is intended to interpret the provisions of the Law of the River or any other Federal statute, any Federal court decision, any Federal regulation, contract, or policy described herein, including but not limited to: the Colorado River Compact, 45 Stat. 1057; the Upper Colorado River Basin Compact, 63 Stat. 31; the Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, Treaty Between the United States of America and Mexico, Treaty Series 994, 59 Stat. 1219; the United States/Mexico agreement in Minute No. 242 of August 30, 1973, Treaty Series 7708; 24 UST 1968; the Consolidated Decree entered by the Supreme Court of the United States in *Arizona* v. *California*, 547 U.S. 150 (2006); the Boulder Canyon Project Act, 45 Stat. 1057; the Boulder Canyon Project Adjustment Act, 54 Stat. 774; the Colorado River Storage Project Act, 70 Stat. 105; the Colorado River Basin Project Act, 82 Stat. 885; the Colorado River Basin Salinity Control Act, 88 Stat. 266; the Hoover Power Plant Act of 1984, 98 Stat. 1333; the Colorado River Floodway Protection Act, 100 Stat. 1129; or the Grand Canyon Protection Act of 1992, 106 Stat. 4669.

Brief Synopsis of the Law of the River

For those who are new to the Law of the River, it is helpful to understand the key roles of the Colorado River Compact, the Mexican Water Treaty, the Upper Colorado River Basin Compact, and the *Arizona* v. *California* litigation in the distribution of the waters of the Colorado River. A brief review of these essential components is provided here in chronological order, followed by a brief description of two Federal statutes essential to an understanding of the Law of the River.

Colorado River Compact

The Colorado River system is a major source of water supply for the States of Arizona, California, Nevada, Colorado, New Mexico, Utah, and Wyoming, known as the Colorado River Basin States (Basin States). Large-scale demand for Colorado River water first developed in California. The other Basin States became concerned that California might obtain first priority rights to most of the flow of the river under the doctrine of prior appropriation. In 1922, water rights negotiations resulted in the Colorado River Compact which divided the Colorado River Basin into two parts, the Upper Basin and the Lower Basin. The Colorado River Compact establishes Lee Ferry, Arizona, as the dividing point.

The Upper Basin is defined in Article II of the Colorado River Compact to mean:

> …those parts of the States of Arizona, Colorado, New Mexico, Utah, and Wyoming within and from which waters naturally drain into the Colorado River System above Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the System above Lee Ferry.

The Lower Basin is defined in Article II of the Colorado River Compact to mean:

> …those parts of the States of Arizona, California, Nevada, New Mexico, and Utah within and from which waters naturally drain into the Colorado River System below Lee Ferry, and also all parts of said States located without the drainage area of the Colorado River System which are now or shall hereafter be beneficially served by waters diverted from the System below Lee Ferry.

In the Colorado River Compact, the States of Colorado, New Mexico, Utah, and Wyoming are termed "States of the Upper Division" and the States of Arizona, California, and Nevada are termed "States of the Lower Division."

The Compact defines the "Colorado River System" as "that portion of the Colorado River and its tributaries within the United States of America." Under the Compact:

> There is hereby apportioned from the Colorado River System in perpetuity to the Upper Basin and to the Lower Basin, respectively, the exclusive beneficial consumptive use of 7,500,000 acre-feet of water per annum, which shall include all water necessary for the supply of any rights which may now exist.

The Colorado River Compact also provides a right to the Lower Basin "to increase its beneficial consumptive use of such waters by one million acre-feet per annum."

The Compact provides that "[p]resent perfected rights to the beneficial use of waters of the Colorado River System are unimpaired by this compact" and further provides that "[n]othing in the compact shall be construed as affecting the obligations of the United States of America to Indian Tribes."

The Compact sets forth the framework for supplying water to Mexico "[i]f, as a matter of international comity, the United States of America shall hereafter recognize in the United States of Mexico any right to the use of any waters of the Colorado River System."

The Colorado River Compact is discussed in detail in Chapter II of *The Hoover Dam Documents 1948* and in Chapter I(B) of *Updating the Hoover Dam Documents 1978*.

Mexican Water Treaty

The Treaty between the United States of America and Mexico, Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, 59 Stat. 1219 (1944) (Mexican Water Treaty) provides for the allotment of Colorado River water to Mexico and identifies points of delivery. The treaty provides that:

> The application of the present Treaty, the regulation and exercise of the rights and obligations which the two Governments assume thereunder, and the settlement of all disputes to which its observance and execution may give rise are hereby entrusted to the International Boundary and Water Commission, which shall function in conformity with the powers and limitations set forth in this Treaty.

The Mexican Water Treaty is discussed in Chapter XIV of *The Hoover Dam Documents 1948* and in Chapter I(F) of *Updating the Hoover Dam Documents 1978*. Salinity issues involving Mexico are discussed in Chapter XIII of *Updating the Hoover Dam Documents 1978*.

Upper Colorado River Basin Compact

In 1948, the five States with territory in the Upper Basin entered into the Upper Colorado River Basin Compact, which apportions to the State of Arizona the beneficial consumptive use of 50,000 acre-feet per year of the Upper Basin's 7,500,000-acre-foot apportionment. The annual beneficial consumptive use apportionment remaining after deducting the Arizona share is distributed among the other four States as follows: 51.75 percent to the State of Colorado, 11.25 percent to the State of New Mexico, 23.00 percent to the State of Utah, and 14.00 percent to the State of Wyoming. This compact also establishes the Upper Colorado River Commission.

The Upper Colorado River Basin Compact is discussed in Chapter II of *The Hoover Dam Documents 1948* and in Chapter IV of *Updating the Hoover Dam Documents 1978*.

Arizona v. *California* Litigation

The Lower Division States were unsuccessful in their efforts to divide the Lower Basin apportionment by compact. In 1928, Congress passed the Boulder Canyon Project Act of 1928, Public Law (Pub. L.) No. 70-642, 45 Stat. 1057 (1928) (BCPA), which authorized the States of Arizona, California, and Nevada to enter into an agreement that would divide the Lower Basin's 7,500,000 acre-foot annual consumptive use apportionment as follows: 2,800,000 acre-feet to the State of Arizona; 300,000 acre-feet to the State of Nevada; and 4,400,000 acre-feet to the State of California. The agreement was never consummated. In later years, under the authority of the BCPA, the Secretary entered into contracts with

the States of Arizona and Nevada and with water users in all three Lower Division States reflecting the BCPA apportionments.

In its 1963 opinion in *Arizona* v. *California*, 373 U.S. 546 (1963), the United States Supreme Court held that in the absence of an interstate agreement the Secretary's water delivery contracts accomplished the division of water provided for in the BCPA. The decree entered in *Arizona* v. *California*, 376 U.S. 340 (1964) (1964 Decree) sets forth the basic legal framework under which the Secretary manages the lower Colorado River. The 1964 Decree was amended in 1966, and supplemented in 1979 and thereafter by decrees addressing rights established as of June 25, 1929, the effective date of the BCPA, including rights for the Indian reservations along the lower Colorado River. The 1964 Decree and the subsequent supplemental decrees were later incorporated into the Consolidated Decree, 547 U.S. 150 (2006).

The *Arizona* v. *California* litigation from its inception through 1979 is discussed in Chapters VIII, IX, and X of *Updating the Hoover Dam Documents 1978*, which set forth the text of relevant documents in Appendices VIII through X of that volume. Issues involving Indian reservation lands left unresolved by the 1979 supplemental decree are discussed in Chapter XI of that volume, with the text of relevant documents set forth in Appendix XI of that volume.

Boulder Canyon Project Act

The BCPA, discussed above under *Arizona* v. *California*, authorizes the Secretary to construct Hoover Dam for the purpose of controlling floods, improving navigation and regulating the flow of the Colorado River, providing for storage and for the delivery of the stored waters, and providing for the generation of electrical energy. The BCPA further authorizes the Secretary to enter into contracts for the water stored in Lake Mead, the reservoir created by Hoover Dam, and to enter into contracts for sale of the electrical energy generated at the dam. The BCPA also authorized the Secretary to construct the All-American Canal.

Colorado River Storage Project Act

The Colorado River Storage Project Act, Pub. L. No. 84-485, 70 Stat. 105 (1956) (CRSPA) provides authority for the Secretary to construct, operate, and maintain numerous water storage projects, including powerplants, in the Upper Basin and to further investigate and prepare planning reports for additional projects, making it possible for the States in the Upper Basin to utilize the apportionments to which they are entitled under the Upper Colorado River Basin Compact, consistent with the provisions of the Colorado River Compact.

CHAPTER 1: COLORADO RIVER OPERATIONS

Introduction

After the passage of the Colorado River Storage Project Act, Public Law (Pub. L.) No. 84-485, 70 Stat. 105 (1956) (CRSPA), and the subsequent construction of Glen Canyon Dam and other facilities, the need arose to coordinate the operation of the Colorado River mainstream reservoirs and, in particular, to coordinate the operation of Lake Powell, the reservoir created by Glen Canyon Dam, with the operation of Lake Mead, the reservoir created by Hoover Dam. The coordinated operation of Lake Powell and Lake Mead was addressed in 1968 in the Colorado River Basin Project Act, Pub. L. No. 90-537, 82 Stat. 885 (1968) (CRBPA or Basin Project Act).

This chapter addresses events during the period from 1979 through 2008 that relate to the criteria adopted by the Secretary of the Interior (Secretary) in 1962 for filling Lake Powell, the criteria adopted by the Secretary in 1970 under the Basin Project Act for the coordinated operation of Colorado River reservoirs, and the publication of annual operating plans for Colorado River reservoirs in accordance with the Basin Project Act and the 1970 operating criteria. Chapter 2 addresses additional reservoir management strategies for the coordinated operations of Lake Powell and Lake Mead, and the development of interim operational guidelines adopted by the Secretary in 2007.

Lake Powell Filling Criteria

During the construction of Glen Canyon Dam, Secretary Stewart L. Udall initiated studies to determine how Lake Powell could be filled, with minimal disruption to the many activities dependent upon riverflow. After consultation with interests throughout the Colorado River Basin, Secretary Udall adopted the General Principles to Govern, and Operating Criteria for, Glen Canyon Reservoir (Lake Powell) and Lake Mead During the Lake Powell Filling Period (Filling Criteria) in 1962 and these were published in the *Federal Register* at 27 Fed. Reg. 6851 (July 19, 1962). There were several efforts to change or terminate the Filling Criteria throughout the 1970s. The development and adoption of these criteria and the efforts to modify or terminate them are discussed in *Updating the Hoover Dam Documents 1978*, Chapters I(L) and VI.

The Filling Criteria terminated automatically on June 22, 1980, as specified elevations were reached in Lake Powell and Lake Mead. This event was recognized by Secretary Cecil D. Andrus in a letter to the Upper Colorado River Commission dated June 25, 1980, in which the Secretary noted:

> The "General Governing and Operating Criteria During Lake Powell Filling Period" were published in the Federal Register on July 12 [sic], 1962, and stated that the filling criteria would be applicable until the date Lake Powell storage first attains elevation 3,700 feet and Lake Mead storage is simultaneously at or above elevation 1,146 feet. On Sunday evening, June 22, 1980, Lake Powell exceeded elevation 3,700 feet for the first time, and on that date Lake Mead was at about elevation 1,201 feet, thus terminating the Lake Powell filling criteria.

Long-Range Operating Criteria

Section 602(a) of the Basin Project Act provides, in part, that:

> In order to comply with and carry out the provisions of the Colorado River Compact, the Upper Colorado River Basin Compact, and the Mexican Water Treaty, the Secretary shall propose criteria for the coordinated long-range operation of the reservoirs constructed and operated under the authority of the Colorado River Storage Project Act, the Boulder Canyon Project Act, and the Boulder Canyon Project Adjustment Act.

As enacted in 1968, Section 602(b) requires that the proposed long-range operating criteria be submitted to the Governors of the seven Colorado River Basin States (Basin States) and to such other parties and agencies as the Secretary deems appropriate, for review and comment. Section 602(b) of the Basin Project Act also required that such criteria be adopted by July 1, 1970.

Following discussions between and among representatives of the United States Department of the Interior and representatives of the seven Basin States, Secretary Walter J. Hickel proposed criteria on December 16, 1969. After review of the comments, on June 4, 1970, Secretary Hickel adopted the Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs (Long-Range Operating Criteria, Operating Criteria, or LROC), pursuant to the Basin Project Act. The LROC were published in the *Federal Register* at 35 Fed. Reg. 8951 (June 10, 1970). The history of Section 602 and the adoption of the LROC are discussed in *Updating the Hoover Dam Documents 1978*, Chapters I(N) and VII.

As originally adopted in 1970, the LROC provide that the Secretary may modify the criteria from time to time in accordance with the consultation provisions of Section 602(b) of the Basin Project Act. In addition, the LROC as originally adopted also provide that:

> The Secretary will sponsor a formal review of the Operating Criteria at least every 5 years, with participation by State representatives as each Governor may designate and such other parties and agencies as the Secretary may deem appropriate.

As discussed in a *Federal Register* notice published at 62 Fed. Reg. 45440 (August 27, 1997), reviews prior to 1990 were conducted primarily through meetings with and correspondence between representatives of the seven Basin States and the Bureau of Reclamation (Reclamation). In 1990, Reclamation expanded the review of the LROC to include additional stakeholders.

In the Grand Canyon Protection Act of 1992, Pub. L. No. 102-575, Title XVIII, 106 Stat. 4669 (1992), Congress identified those with whom the Secretary must consult regarding the preparation of the LROC, providing in Section 1804(c)(3) of that Act that:

> In preparing the criteria and operating plans described in section 602(b) of the Colorado River Basin Project Act of 1968 and in this subsection, the Secretary shall consult with the Governors of the Colorado River Basin States and with the general public, including—
> (A) representatives of academic and scientific communities;
> (B) environmental organizations;
> (C) the recreation industry; and
> (D) contractors for the purchase of Federal power produced at Glen Canyon Dam.

As of December 31, 2008, there have been six reviews of the LROC. The first five reviews were conducted between 1975 and 1997 and did not propose or adopt any revisions. In the sixth review, which was initiated in 2002 and completed in March 2005, Secretary Gale A. Norton proposed and adopted a number of modifications to the LROC. The bases for the modifications were: (1) a specific change in Federal law applicable to the LROC (that is, the 1992 statutory consultation requirements); (2) the need to address outdated language that had remained in the LROC since its adoption in 1970; and (3) a desire to incorporate specific modifications to Article IV(b) of the LROC to better reflect actual operating experience. The Secretary's final decision as a result of the sixth review was published in the *Federal Register* at 70 Fed. Reg. 15873 (March 29, 2005).

The reviews of the LROC have been carried out by a team consisting of Reclamation staff from the Upper Colorado Region in Salt Lake City, Utah, and the Lower Colorado Region in Boulder City, Nevada. Reclamation routinely publishes *Federal Register* notices at various steps during these reviews and conducts multiple public meetings.

Coordinated Operation of Lake Powell and Lake Mead under the Long-Range Operating Criteria

With the termination of the Filling Criteria in June 1980, the coordinated operation of Lake Powell and Lake Mead was primarily governed by the LROC. Article II(2) of the LROC provides that "the objective shall be to maintain a

minimum release of water from Lake Powell of 8.23 million acre-feet for that year." Under Article II(3) of the LROC, water may be released at a rate greater than 8,230,000 acre-feet per year in order to maintain, as nearly as practicable, active storage in Lake Mead equal to the active storage in Lake Powell, provided that there is sufficient water in storage in the Upper Basin reservoirs to protect the Upper Division States against impairment of annual consumptive uses in the Upper Basin. Additional water may also be released to avoid anticipated spills (water released in excess of powerplant capacity) from Lake Powell.

Water released from Lake Powell, plus the tributary inflows between Lake Powell and Lake Mead, is regulated in Lake Mead. This water is either pumped from Lake Mead or released downstream via Hoover Dam to meet the following requirements in Article III of the LROC:

> (a) Mexican Treaty obligations;
> (b) Reasonable consumptive use requirements of mainstream users in the Lower Basin;
> (c) Net river losses;
> (d) Net reservoir losses;
> (e) Regulatory wastes.

During flood control operations, Lake Mead is operated as prescribed by the February 8, 1984, Field Working Agreement between Reclamation and the United States Army Corps of Engineers. See Chapter 12.

The condition governing the quantity of water that may be released from Lake Mead in a given year for consumptive use within the Lower Division States is determined by the Secretary annually in accordance with the LROC and Article II of the Consolidated Decree in *Arizona* v. *California*, 547 U.S. 150 (2006), which incorporates the 1964 Decree in *Arizona* v. *California*, 376 U.S. 340 (1964). The provisions for each condition are as follows:

- "Normal Condition": when sufficient mainstream water is available to satisfy 7,500,000 acre-feet of consumptive use in the Lower Division States (Article II.B.1)

- "Surplus Condition": when sufficient mainstream water is available to satisfy in excess of 7,500,000 acre-feet of consumptive use in the Lower Division States (Article II.B.2)

- "Shortage Condition": when insufficient mainstream water is available to satisfy 7,500,000 acre-feet of consumptive use in the Lower Division States (Article II.B.3)

Annual Operating Plan

Since 1972, as required by Section 602(b) of the Basin Project Act and Article I(1) of the LROC, the Secretary has prepared a report each year for transmittal to the Congress and the Governors of the seven Basin States describing the hydrologic conditions on the Colorado River, the releases made from system storage during the prior operating year, and the projected operations for the current or upcoming year.[1] This report, known as the Annual Operating Plan (AOP), is developed consistent with the requirements of the Basin Project Act and the additional consultation requirements identified in the Grand Canyon Protection Act of 1992. As of December 31, 2008, the Secretary implements the consultation requirement through consultation with the Colorado River Management Work Group (CRMWG), which includes a broad range of interested stakeholders.

As of December 31, 2008, the Secretary's development of each AOP is carried out by a team consisting of Reclamation staff from the Upper Colorado and Lower Colorado Regions. Reclamation develops a draft AOP each year and provides the draft to the general public and the CRMWG. Reclamation conducts public meetings regarding the content of the AOP and develops a final draft AOP that is then submitted to the Secretary. The Secretary's practice has been to review the final draft AOP and then to transmit the final AOP, as approved, via letter from the Secretary to each Governor of the seven Basin States and other interested stakeholders. As of December 31, 2008, the final AOP is also published on Reclamation's Web page.

In addition to the description of hydrologic conditions and releases from system storage during the prior operating year, an AOP describes projected Colorado River operations for the current or upcoming year. Typically, an AOP will address: (1) the projected operation of the Colorado River reservoirs to satisfy project purposes under varying projected hydrologic and climatic conditions; (2) the quantity of water considered necessary to be in storage in the Upper Basin reservoirs, pursuant to Section 602(a) of the Basin Project Act; (3) the quantity of water available for delivery to the United Mexican States (Mexico) pursuant to the Treaty between the United States of America and Mexico, Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, 59 Stat. 1219 (1944) (Mexican Water Treaty) and Minutes of the International Boundary and Water Commission (see Chapter 4); (4) whether the beneficial consumptive use requirements of mainstream users in the Lower Division States will be met under a "Normal," "Surplus," or "Shortage" condition as outlined in Article III of the LROC and any applicable implementing

[1] During the period from 1979 through 2000, Reclamation published a report describing the actual operation for the preceding year and a report describing the projected operation for the current or upcoming year. Beginning in 2001 and as of December 31, 2008, Reclamation practice was to produce one report covering both years.

guidelines; and (5) whether water apportioned to, but unused by, one or more Lower Division States exists and may be released to satisfy beneficial consumptive use.

In order to better identify the range of possible operations, each AOP typically presents the relevant projected operations for the Colorado River system over the upcoming year for each of three projected hydrologic conditions: (1) the Most Probable, (2) the Probable Maximum, and (3) the Probable Minimum. As of December 31, 2008, these hydrologic scenarios are provided by the National Weather Service's Colorado Basin River Forecast Center.

In recent years, additional operational rules and decisions have been put into place for Colorado River reservoirs, for example: the *Record of Decision, Operation of Glen Canyon Dam Final Environmental Impact Statement* signed by Secretary Bruce Babbitt on October 9, 1996, and the associated Operating Criteria for Glen Canyon Dam published at 62 Fed. Reg. 9447 (March 3, 1997); the *Record of Decision, Colorado River Interim Surplus Guidelines Final Environmental Impact Statement* signed by Secretary Babbitt on January 16, 2001, and published at 66 Fed. Reg. 7772 (January 25, 2001); and the *Record of Decision, Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead* (2007 Interim Guidelines ROD) signed by Secretary Dirk Kempthorne on December 13, 2007, and published at 73 Fed. Reg. 19873 (April 11, 2008). The AOP incorporates such rules and decisions into the report and implements the criteria contained in these decision documents. Thus, the AOP describes the manner in which Reclamation's project operations will implement operational decisions in response to the existing and projected water conditions for a particular water year.

Secretary Kempthorne recognized in the 2007 Interim Guidelines ROD that the AOP serves to integrate numerous Federal policies affecting reservoir operations:

> The AOP is used to memorialize operational decisions that are made pursuant to individual federal actions (e.g., ISG, 1996 Glen Canyon Dam ROD, this ROD). Thus, the AOP serves as a single, integrated reference document required by section 602(b) of the CRBPA of 1968 regarding past and anticipated operations.

Article I of the LROC allows for an AOP to be "revised to reflect the current hydrologic conditions" with Congress and the Governors of the Basin States to be advised of any changes by June of each year, following appropriate consultation. Such a mid-year review was performed in 2005, and ultimately led to the initiation of a public process that was completed with the signing of the 2007 Interim Guidelines ROD. See Chapter 2.

Chapter 1: List of References

Treaties, Interstate Compacts, and Federal Statutes

Treaty between the United States of America and Mexico, Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, 59 Stat. 1219 (1944). Appendix 6.

Colorado River Storage Project Act, Pub. L. No. 84-485, 70 Stat. 105 (1956). On DVD in *Updating the Hoover Dam Documents 1978* at I-99.

Colorado River Basin Project Act, Pub. L. No. 90-537, 82 Stat. 885 (1968). On DVD in *Updating the Hoover Dam Documents 1978* at XII-9.

Grand Canyon Protection Act of 1992, Pub. L. No. 102-575, Title XVIII, 106 Stat. 4669 (1992). Appendix 43.

Federal Court Decisions

Arizona v. *California*, 376 U.S. 340 (1964) (1964 Decree). Appendix 4 and DVD Supplement 3.

Arizona v. *California*, 547 U.S. 150 (2006) (Consolidated Decree). Appendix 5 and DVD Supplement 12.

Federal Register Notices

27 Fed. Reg. 6851 (July 19, 1962), Glen Canyon Reservoir (Lake Powell) and Lake Mead. General Governing and Operating Criteria During Lake Powell Filling Period.

35 Fed. Reg. 8951 (June 10, 1970), Colorado River Reservoirs. Coordinated Long-Range Operation. DVD Supplement 92.

62 Fed. Reg. 9447 (March 3, 1997), Operating Criteria and 1997 Annual Plan of Operations for Glen Canyon Dam. Adoption of operating criteria and 1997 annual plan of operations. Appendix 37.

62 Fed. Reg. 45440 (August 27, 1997), Review of Existing Coordinated Long-Range Operating Criteria for Colorado River Reservoirs (Operating Criteria). DVD Supplement 93.

66 Fed. Reg. 7772 (January 25, 2001), Colorado River Interim Surplus Guidelines. Notice of Availability of Record of Decision for the adoption of Colorado River Interim Surplus Guidelines. DVD Supplement 94.

70 Fed. Reg. 15873 (March 29, 2005), Review of Existing Coordinated Long-Range Operating Criteria for Colorado River Reservoirs (Operating Criteria). Notice of final decision regarding the operating criteria. Appendix 33.

73 Fed. Reg. 19873 (April 11, 2008), Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead. Notice of Availability of the Record of Decision for the adoption of Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead. DVD Supplement 96.

Records of Decision (RODs)

Secretary of the Interior, October 9, 1996, *Record of Decision, Operation of Glen Canyon Dam Final Environmental Impact Statement*. Reprinted without attachments at Appendix 36. DVD Supplement 97, with attachments.

Secretary of the Interior, January 16, 2001, *Record of Decision, Colorado River Interim Surplus Guidelines Final Environmental Impact Statement*. Appendix 32.

Secretary of the Interior, December 13, 2007, *Record of Decision, Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead.* Appendix 35.

Contracts and Agreements

Field Working Agreement between Department of the Interior, Bureau of Reclamation and Department of the Army, Corps of Engineers for Flood Control Operation of Hoover Dam and Lake Mead, Colorado River, Nevada-Arizona, February 8, 1984. Appendix 40.

Letters

Secretary of the Interior, June 25, 1980, to Upper Colorado River Commission regarding the June 22, 1980, termination of Lake Powell Filling Criteria. Appendix 31.

Other

Updating the Hoover Dam Documents 1978, Chapters I(L) and (N), VI, and VII. On DVD.

CHAPTER 2: INTERIM GUIDELINES FOR LAKE POWELL AND LAKE MEAD

Introduction

Lake Powell and Lake Mead, by far the two largest reservoirs on the mainstream of the Colorado River, provide over 50 million acre-feet of storage capacity. The General Principles to Govern, and Operating Criteria for, Glen Canyon Reservoir (Lake Powell) and Lake Mead During the Lake Powell Filling Period (Filling Criteria) (see Chapter 1) controlled the coordinated operation of these reservoirs until Lake Powell first filled in June 1980. The Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs (Long-Range Operating Criteria, Operating Criteria, or LROC) (see Chapter 1) adopted in 1970 also provided a framework for the coordinated operation of these reservoirs.

As a result of the largest inflows on record, occurring from 1983 through 1986, Lake Powell and Lake Mead were essentially full throughout the 1980s and remained at relatively high levels throughout the 1990s. During this period, demand for water throughout the Colorado River Basin, although increasing, was substantially less than the full Upper and Lower Basin apportionments established by the Colorado River Compact in 1922. The LROC framework for the coordinated operation of Lake Powell and Lake Mead was sufficient as a reservoir management strategy throughout this period.

As hydrologic conditions changed in the 1990s and demand for Colorado River water continued to increase, particularly in the Lower Basin, it became clear that additional reservoir management strategies would be necessary to more effectively coordinate the operations of Lake Powell and Lake Mead. Three key strategies were developed and implemented by the Secretary of the Interior (Secretary) at the turn of the century and are discussed in this chapter:

- Colorado River Interim Surplus Guidelines, implemented in 2001 (2001 ISG)
- Interim 602(a) Storage Guideline, implemented in 2004
- Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead, implemented in 2007 (2007 Interim Guidelines)

In addition, pertinent hydrologic data for the period from 1979 through 2008 are summarized at the end of this chapter, updating the corresponding tables of data originally presented in *Updating the Hoover Dam Documents 1978*.

Additional Management Strategies for the Operation of Lake Powell and Lake Mead

Although the Decree in *Arizona* v. *California*, 376 U.S. 340 (1964) (1964 Decree), and the LROC, provided for the Secretary's annual determination of the quantity of mainstream Colorado River water available for release for use in the States of Arizona, California, and Nevada (see Chapter 1), prior to 2001 no additional specific or objective guidance existed to aid the Secretary in making the determinations. In the mid to late 1990s, as demand for Colorado River water continued to increase in the Lower Basin, the need for additional guidance with respect to determinations of surplus water availability became evident. This need was addressed through adoption of the 2001 ISG.

With the onset in 2000 of a prolonged drought, by 2005 it was clear that additional guidance regarding shortage determinations in the Lower Basin was also needed. Furthermore, the determination of the annual release from Lake Powell considered the amount of water in storage at Lake Powell but not at Lake Mead, and releases greater than 8,230,000 acre-feet from Lake Powell occurred only at relatively high reservoir levels through equalization. In addition, the minimum objective release from Lake Powell of 8,230,000 acre-feet annually resulted in rapidly decreasing Lake Powell storage during periods of sustained drought. By mid-2005, the Secretary determined that a coordinated operations strategy considering the full range of reservoir elevations for both reservoirs was needed. This need was addressed through adoption of the 2007 Interim Guidelines.

Colorado River Interim Surplus Guidelines, 2001

In almost all years from 1953 through 2003, California's consumptive use of Colorado River water exceeded 4,400,000 acre-feet, the annual apportionment available to California when the Secretary determines a Normal Condition.[1] During this period, following issuance of the 1964 Decree in *Arizona* v. *California*, the Secretary made additional water available to California either under Article II(B)(6) of the 1964 Decree, as unused apportionment from the States of Arizona and Nevada, or as surplus under Article II(B)(2) of the 1964 Decree. In the 1990s, as Arizona and Nevada approached full use of their Colorado River apportionments, it became clear that California would soon need to reduce its reliance on Colorado River water and limit its use to 4,400,000 acre-feet in years of a Normal Condition. See Chapter 6 for further discussion of California's efforts to limit its use of Colorado River water.

Prior to adoption of the Interim Surplus Guidelines in 2001, the Secretary applied various factors including, but not limited to, those specified in the LROC, in

[1] In 1993, the Secretary implemented the use of the terms Normal Condition, Shortage Condition, and Surplus Condition in the AOP to characterize the amount of water available for release under *Arizona* v. *California*. See Chapter 1 for additional information regarding AOPs.

determining the quantities to be released from Lake Mead. In several years during the period from 1979 through 2008, in anticipation of flood events, water was released in excess of 9,000,000 acre-feet (the sum of the annual Lower Basin apportionment of 7,500,000 acre-feet and the annual Mexican Treaty obligation of 1,500,000 acre-feet) plus conveyance losses. In 1996, a Surplus Condition determination occurred through a mid-year review of the Annual Operating Plan (AOP). This was the first determination to release water from Lake Mead in excess of 9,000,000 acre-feet plus conveyance losses which was not based on flood control. Based on this actual operating experience and through preparation of subsequent AOPs, the Secretary determined that more specific surplus guidelines, consistent with the LROC, the 1964 Decree, and applicable Federal law, were necessary. Secretary Bruce Babbitt adopted these guidelines following a public process under the National Environmental Policy Act of 1969, Public Law (Pub. L.) No. 91-190, 83 Stat. 852 (1970) (NEPA).

On January 16, 2001, Secretary Bruce Babbitt signed the *Record of Decision, Colorado River Interim Surplus Guidelines Final Environmental Impact Statement*. The 2001 ISG were published in the *Federal Register* at 66 Fed. Reg. 7772 (January 25, 2001). These guidelines, initially designed to be in effect through 2016, linked determinations of surplus availability to specific elevations of Lake Mead and also to California's progress in developing and implementing a plan to reduce its annual consumptive use to 4,400,000 acre-feet. See Chapter 6.

Through adoption of specific interim surplus guidelines, the Secretary was able to afford mainstream users of Colorado River water, particularly those in California then utilizing surplus Colorado River water, a greater degree of predictability with respect to the likelihood of a Secretarial determination of surplus conditions on the Colorado River in a given year. The 2001 ISG further served to encourage California to reduce reliance on consumptive use of Colorado River water in excess of 4,400,000 acre-feet per year.

Interim 602(a) Storage Guideline, 2004

The LROC provide that the AOP include a determination by the Secretary of the quantity of water considered necessary as of September 30 of each year to be in storage as required by section 602(a) of the Colorado River Basin Project Act, Pub. L. No. 90-537, 82 Stat. 885 (1968) (CRBPA or Basin Project Act). This quantity of water, commonly referred to as "602(a) Storage," is the quantity of water considered necessary to be in storage in the Upper Basin reservoirs to provide protection to the Upper Division States of Colorado, New Mexico, Utah, and Wyoming against impairment of annual consumptive uses in the Upper Basin. In years when projected storage in the Upper Basin reservoirs is greater than 602(a) Storage, and Lake Powell storage is greater than storage at Lake Mead, storage equalization releases are made to maintain, as nearly as practicable, the active storage in Lake Mead equal to the active storage in Lake Powell on September 30 of each year. In years when projected storage in the Upper Basin is less than 602(a) Storage, such storage equalization releases are not made.

Article II of the LROC provides, in part, that:

> The quantity of 602(a) Storage shall be determined by the Secretary after consideration of all applicable laws and relevant factors, including, but not limited to, the following:
>
> (a) Historic streamflows;
>
> (b) The most critical period of record;
>
> (c) Probabilities of water supply;
>
> (d) Estimated future depletions in the upper basin, including the effects of recurrence of critical periods of water supply;
>
> (e) The "Report of the Committee on Probabilities and Test Studies to the Task Force on Operating Criteria for the Colorado River," dated October 30, 1969, and such additional studies as the Secretary deems necessary; and
>
> (f) The necessity to assure that upper basin consumptive uses not be impaired because of failure to store sufficient water to assure deliveries under section 602(a)(1) and (2) of Public Law 90-537.

There has been, and as of December 31, 2008, continues to be, a range of differing views regarding precisely how these factors should be considered by the Secretary in making the determination of 602(a) Storage.

Due to relatively full reservoir conditions in the Upper Basin and the amount of Upper Basin demand for Colorado River water, the 602(a) Storage determinations in the 1980s and 1990s did not directly affect the releases from Lake Powell. As the water in storage in the Upper Basin decreased and the demand for water in the Upper Basin increased, the need for additional guidance for the annual 602(a) Storage determinations was identified.

In 2004, Reclamation adopted the Interim 602(a) Storage Guideline to be in effect through 2016 to coincide with the effective period of the 2001 ISG. This guideline was published in the *Federal Register* at 69 Fed. Reg. 28945 (May 19, 2004). The Interim 602(a) Storage Guideline established that:

> Through the year 2016, 602(a) storage requirements determined in accordance with Article II(1) of the Long-Range Operating Criteria shall utilize a value of not less than 14.85 million acre-feet (elevation 3,630 feet) for Lake Powell.[2]

[2] The interim guideline provided for the possibility that a future sediment survey at Lake Powell might result in a revised water storage volume that correlates with the water surface elevation of 3,630 feet.

The Interim 602(a) Storage Guideline further provided:

> Accordingly, when projected September 30 Lake Powell storage is less than 14.85 million acre-feet (elevation 3,630 feet), the objective will be to maintain a minimum annual release of water from Lake Powell of 8.23 million acre-feet, consistent with Article II(2) of the Long-Range Operating Criteria.

This portion of the Interim 602(a) Storage Guideline became less relevant for operational purposes in December 2007 following the adoption of the 2007 Interim Guidelines.

Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations of Lake Powell and Lake Mead, 2007

As of December 31, 2008, the Colorado River was experiencing one of the worst droughts in approximately 100 years of recorded history. For the period 2000 through 2008, the average natural flow into Lake Powell was 11,700,000 acre-feet, the lowest 9-year average since 1906. This drought was the first sustained drought experienced in the Colorado River Basin at a time when all major storage facilities were in place and when use by the Lower Division States of Arizona, California, and Nevada met or exceeded the annual apportionment of 7,500,000 acre-feet under a Normal Condition.

On September 30, 1999, Lake Powell and Lake Mead were a combined 95 percent full. By September 30, 2004, the amount of water in storage in Lake Powell and Lake Mead had declined to approximately 46 percent of the total capacity. During this time, Reclamation conducted detailed briefings for stakeholders in the Colorado River Basin and other interested entities regarding the drought and potential future scenarios for Colorado River operations. In 2004, the seven Colorado River Basin States (Basin States) began discussions of possible strategies to address the system-wide drought in the Colorado River Basin.

During the mid-year review of the 2005 AOP (see Chapter 1), the Secretary received conflicting recommendations from Basin States representatives regarding operations of Glen Canyon Dam for the remainder of the 2005 water year. Secretary Gale A. Norton's mid-year review decision, set forth in a May 2, 2005, letter to the Governors of the Basin States, considered potential adjustments to water year 2005 releases from Lake Powell but did not lead to any operational changes during the 2005 water year. In the May 2, 2005, letter, Secretary Norton directed Reclamation to develop additional strategies to improve coordinated management of the reservoirs in the Colorado River system, particularly for drought and low reservoir conditions.

On September 30, 2005, through a notice published in the *Federal Register* at 70 Fed. Reg. 57322, Reclamation initiated a process in accordance with NEPA, to develop Lower Basin shortage guidelines and coordinated management strategies

for the operation of Lake Powell and Lake Mead. As a result of public input, three important considerations were identified:

- The importance of encouraging conservation of water to better manage limited water supplies and, therefore, minimize the likelihood and severity of potential future shortages

- The importance of considering operations throughout the full range of reservoir elevations

- The importance of implementing guidelines for an interim, rather than a permanent, period to gain valuable experience operating the reservoirs under the modified operations and perhaps improve the basis for making future operational decisions during the interim period and/or thereafter

An intensive period of public input and analysis took place from late 2005 through 2007, and during this period Reclamation consulted with the United States Fish and Wildlife Service (USFWS) under the Endangered Species Act of 1973, Pub. L. No. 93-205, 87 Stat. 884 (1973). On December 12, 2007, the USFWS issued the *Final Biological Opinion for the Proposed Adoption of Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead*.

On December 13, 2007, Secretary Dirk Kempthorne signed the *Record of Decision, Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations of Lake Powell and Lake Mead*, adopting the 2007 Interim Guidelines for an interim period to be in effect through December 31, 2025 (through preparation of the 2026 AOP). These guidelines were published in the *Federal Register* at 73 Fed. Reg. 19873 (April 11, 2008). The following four key elements of river management were adopted.

Shortage Guidelines

The 2007 Interim Guidelines identified the circumstances under which the Secretary would reduce the amount of water available for consumptive use from Lake Mead to the Lower Division States in any given year to below 7,500,000 acre-feet, pursuant to the Consolidated Decree in *Arizona* v. *California*.[3]

Coordinated River Operations

The 2007 Interim Guidelines provided for the coordinated operations of Lake Powell and Lake Mead to provide improved operation of these two reservoirs, particularly under low reservoir conditions, in order to better share the risk of drought years and the benefits of high flow years.

[3] The 1964 Decree in *Arizona* v. *California* was incorporated in 2006 into the Consolidated Decree reported at 547 U.S. 150 (2006).

Storage and Delivery of Conserved Water (ICS and DSS)

The 2007 Interim Guidelines provided for the development of Intentionally Created Surplus (ICS) in Lake Mead from conserved Colorado River system and nonsystem water and for the delivery of ICS pursuant to applicable Federal law to encourage water conservation actions and increase the flexibility of meeting water use demand from Lake Mead, particularly under drought and low reservoir conditions. The 2007 Interim Guidelines provide for the creation, verification, accounting, and any necessary forbearance and delivery agreements required to create and deliver ICS. ICS may be created through a variety of conservation methodologies, including the fallowing of land, canal lining programs, desalination programs, system efficiency measures, introduction to the mainstream of tributary water associated with pre-June 25, 1929, perfected rights, and the importation of non-Colorado River system water. For certain types of ICS, at the time the ICS is created, 5 percent of the total amount created is dedicated to the Colorado River system on a one-time basis to benefit the system and enhance the water in storage in Lake Mead to meet future needs and to offset the effects of drought.

The 2007 Interim Guidelines further provided for the creation, verification, accounting, and delivery of Developed Shortage Supply (DSS) to be available for use in a Shortage Condition. DSS may be created through the purchase of documented water rights perfected prior to June 25, 1929, on Colorado River system tributaries, with the amount actually introduced to the mainstream of the Colorado River subject to verification by the Secretary. DSS may also be created by introducing non-Colorado River system water into the mainstream of the Colorado River. DSS is intended to assist in partially offsetting the specific reductions associated with a Shortage Condition and may only be delivered in the year of its creation.

Interim Surplus Guidelines

The 2007 Interim Guidelines also identify the conditions under which the Secretary may declare the availability of surplus water for use within the Lower Division States, modifying the substance of the 2001 ISG and extending the term from 2016 to be in effect through December 31, 2025 (through preparation of the 2026 AOP).

The 2007 Interim Guidelines provide an objective methodology to determine the annual releases from Lake Powell and Lake Mead, unless extraordinary circumstances arise. Figure 2-1 presents diagrams of the operations specified by the 2007 Interim Guidelines for Lake Powell and Lake Mead, anticipated as of 2008 to be in effect through preparation of the 2026 AOP.

Lake Powell			Lake Mead		
Elevation (feet)	**Operation According to the Interim Guidelines**	**Live Storage (maf)[1]**	**Elevation (feet)**	**Operation According to the Interim Guidelines**	**Live Storage (maf)**
3,700	**Equalization Tier** Equalize, avoid spills or release 8.23 maf	**24.3**	**1,220**	**Flood Control Surplus or Quantified Surplus Condition** Deliver > 7.5 maf (± ICS[2] if Quantified Surplus)	**25.9**
3,636 - 3,666 (2008-2026)	**Upper Elevation Balancing Tier[4]** Release 8.23 maf; if Lake Mead < 1,075 feet, balance contents with a min/max release of 7.0 and 9.0 maf	**15.5 - 19.3** (2008-2026)	**1,200** (approx.)[3]	**Domestic Surplus or ICS Surplus Condition** Deliver > 7.5 maf ± ICS	**22.9** (approx.)
			1,145		**15.9**
			1,105	**Normal or ICS Surplus Condition** Deliver ≥ 7.5 maf ± ICS	**11.9**
3,575		**9.5**			
			1,075		**9.4**
	Mid-Elevation Release Tier Release 7.48 maf; if Lake Mead < 1,025 feet, release 8.23 maf			**Shortage Condition** Deliver 7.167[5] maf + DSS[6]	
			1,050		**7.5**
3,525		**5.9**		**Shortage Condition** Deliver 7.083[7] maf + DSS	
			1,025		**5.8**
	Lower Elevation Balancing Tier Balance contents with a min/max release of 7.0 and 9.5 maf			**Shortage Condition** Deliver 7.0[8] maf + DSS Further measures may be undertaken[9]	
3,490		**4.0**	**1,000**		**4.3**
3,370		**0**	**895**		**0**

Diagram not to scale

[1] Acronym for million acre-feet.

[2] Acronym for Intentionally Created Surplus. See the 2007 Interim Guidelines.

[3] This elevation, and the corresponding storage value, is approximate. It is determined each year by considering several factors including Lake Powell and Lake Mead storage, projected Upper Basin and Lower Basin demands, and an assumed inflow.

[4] Subject to April adjustment which may result in a release according to the Equalization Tier.

[5] Of which 2.48 maf is apportioned to Arizona, 4.4 maf to California, and 0.287 maf to Nevada.

[6] Acronym for Developed Shortage Supply. See the 2007 Interim Guidelines.

[7] Of which 2.40 maf is apportioned to Arizona, 4.4 maf to California, and 0.283 maf to Nevada.

[8] Of which 2.32 maf is apportioned to Arizona, 4.4 maf to California, and 0.280 maf to Nevada.

[9] Whenever Lake Mead is below elevation 1,025 feet, the Secretary shall consider whether hydrologic conditions together with anticipated deliveries to the Lower Division States and Mexico are likely to cause the elevation at Lake Mead to fall below 1,000 feet. Such consideration, in consultation with the Basin States, may result in the undertaking of further measures, consistent with applicable Federal law.

Figure 2-1. Operational diagrams for Lake Powell and Lake Mead.

Hydrologic Data - 1979 through 2008

Pertinent hydrologic data for the period 1979 through 2008 are presented in this section, updating and supplementing the data presented in *Updating the Hoover Dam Documents 1978*, Chapters VI and VII. In addition, the provisional data for 1977 and 1978 appearing in that earlier volume have been updated with the final data for those years, and errors in data previously reported have been corrected.

Background

The United States Geological Survey (USGS) established a gaging station at Lees Ferry, Arizona, in 1921 (see Figure 2-2). For long-term planning purposes, this record was extended back to October 1905 through statistical techniques in order to standardize the period of record across the network of streamflow gages used for modeling in the Colorado River system. The record extension work is detailed in the report by Colorado State University, *Record Extension of Monthly Flows for the Colorado River System*, dated December 2006.

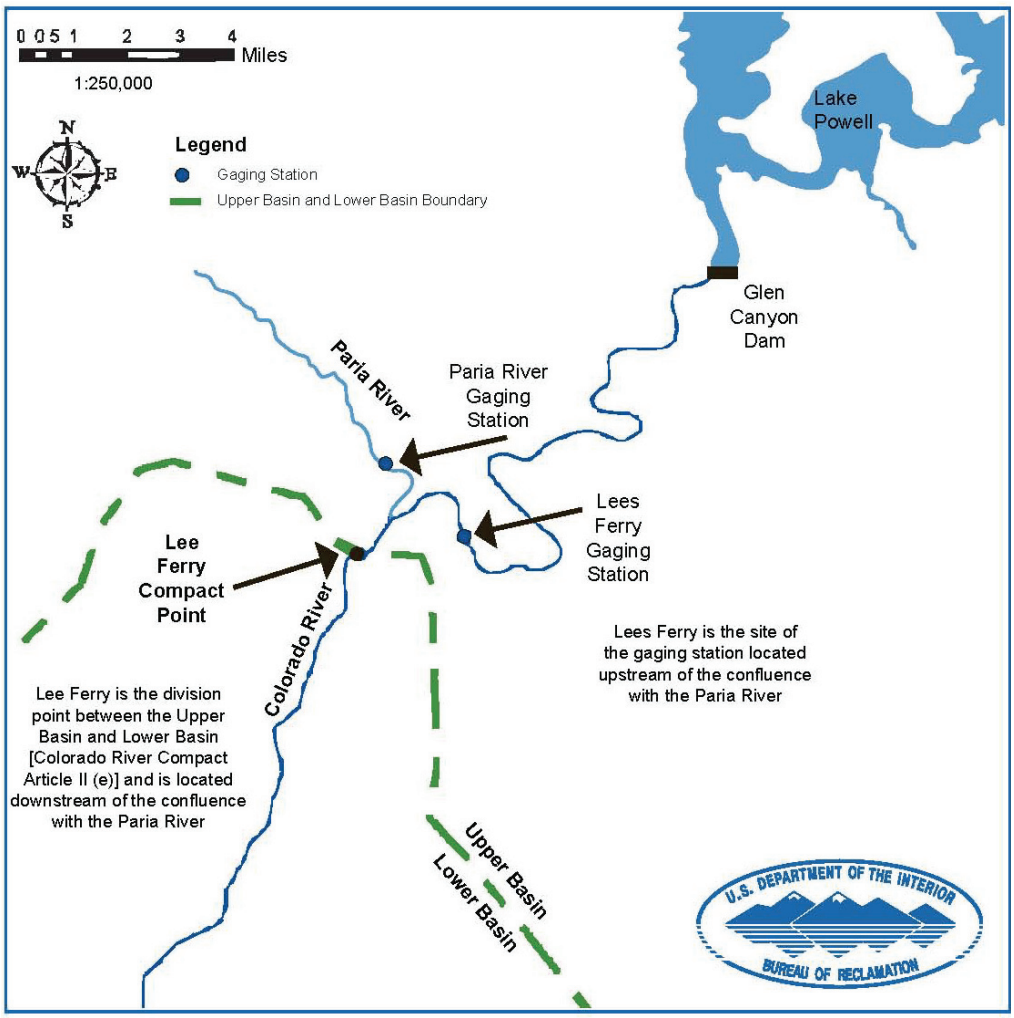

Figure 2-2. Map of Lee Ferry and Lees Ferry, Arizona, locations.

The flow measurement gage at Lees Ferry, Arizona, is located approximately 15 miles downstream of Glen Canyon Dam and 2 miles upstream of Lee Ferry, Arizona, identified in 1922 in the Colorado River Compact as the boundary between the Upper and Lower Basins. As of December 31, 2008, there was not a direct measurement at Lee Ferry and the USGS continued to measure flow at the Lees Ferry gaging station. The flow at the Lee Ferry compact point is computed by summing the release from Glen Canyon Dam and the Paria River inflow. From 1977 through 2008, Paria River annual inflow ranged from a low of 8,067 acre-feet to a high of 47,283 acre-feet with an average annual flow of 19,059 acre-feet over the period (see Table 2-1). Paria River inflow is measured approximately 1.1 miles upstream from its confluence with the Colorado River. The USGS established a gage at this site in 1923. The steamflow record at this gage was also extended back to October of 1905 through the record extension work referenced earlier in this chapter.

Natural Flow at Lee Ferry, Arizona

Natural flow (referred to as virgin flow in *Updating the Hoover Dam Documents 1978*, Chapter I) is the recorded flow at a point in the river corrected for upstream depletions, losses, and reservoir regulation. Figure 2-3 presents the annual natural flow of the Colorado River at Lee Ferry, Arizona, for calendar year 1906 through 2008 (2007 and 2008 were provisional estimates as of December 31, 2008) and updates the bar chart presented in *Updating the Hoover Dam Documents 1978*, Appendix 1 A.2.

Historic Flow at Lee Ferry, Arizona, 1977 through 2008

Following Figure 2-3, Table 2-1 presents the annual water year release from Lake Powell and the inflow from the Paria River, the sum of which represents the flow at Lee Ferry, and the running 10-year total from 1977 through 2008 (2007 and 2008 were provisional estimates as of December 31, 2008). This table updates data found in the table on page 125 in *Updating the Hoover Dam Documents 1978*, Chapter VII, in which the running total is referred to as the "Progressive, 10-year Total."

Additional Hydrologic Data

The remainder of this chapter presents data relevant to Reclamation's Colorado River operations. Table 2-2 presents the end-of-water-year elevation and storage of Lake Powell and Lake Mead from 1977 through 2008. Table 2-3 presents annual December 31 elevation, storage, and calendar year release from Lake Mead from 1979 through 2008, and water supply condition for the Lower Division States for the years 1993 through 2008. Table 2-4 presents the annual consumptive use in the Upper Basin for the States of Arizona, Colorado, New Mexico, Utah, and Wyoming for the period 1971 through 2008. Table 2-5 presents the annual consumptive use in the Lower Basin for the States of Arizona, California, and Nevada for the period 1971 through 2008.

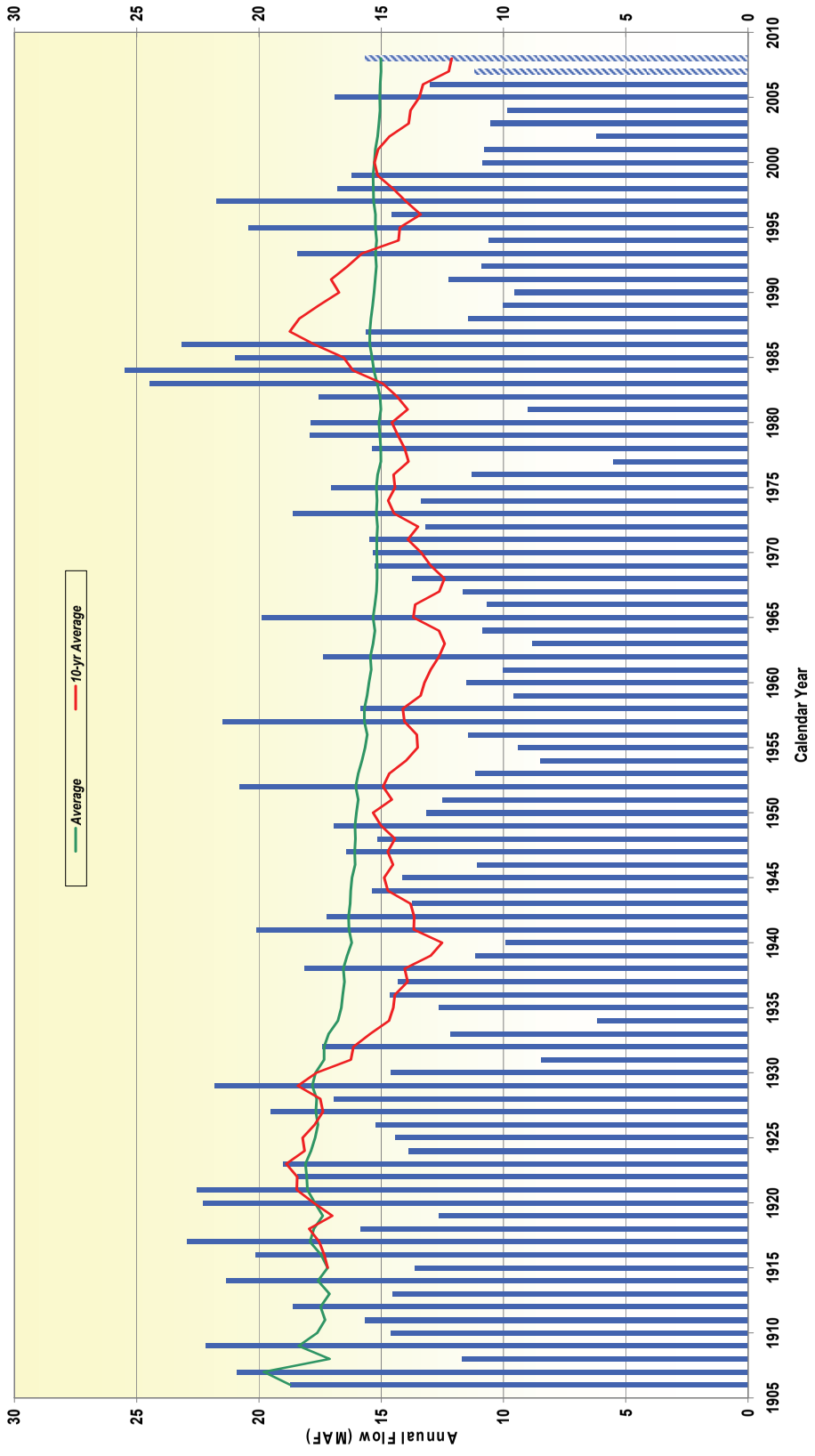

Figure 2-3. Natural flow of the Colorado River at Lee Ferry, Arizona.
(Provisional data subject to change; 2007 and 2008 are estimated values.)

Table 2-1. Water Year Values in Acre-Feet 1977 through 2008

Water Year	Paria River Flow	Lake Powell Release[1]	Flow at Lee Ferry	Running 10-Year Total
1977	8,279	8,260,403	8,268,682	88,284,819
1978	15,033	8,353,666	8,368,699	88,295,920
1979	35,853	8,296,502	8,332,355	87,778,246
1980	47,283	10,907,484	10,954,767	90,045,233
1981	21,091	8,295,154	8,316,245	89,754,832
1982	18,804	8,304,395	8,323,199	88,747,911
1983	26,857	17,493,441	17,520,298	96,128,726
1984	18,214	20,499,412	20,517,626	108,369,556
1985	15,305	19,094,102	19,109,407	118,205,208
1986	18,454	16,847,841	16,866,295	126,577,573
1987	16,387	13,428,595	13,444,982	131,753,873
1988	15,550	8,143,617	8,159,167	131,544,341
1989	12,656	7,980,516	7,993,172	131,205,158
1990	10,816	8,140,403	8,151,219	128,401,610
1991	9,603	8,121,402	8,131,005	128,216,370
1992	20,772	8,001,898	8,022,670	127,915,841
1993	34,850	8,102,499	8,137,349	118,532,892
1994	15,295	8,288,529	8,303,824	106,319,090
1995	19,300	9,223,339	9,242,639	96,452,322
1996	10,240	11,522,142	11,532,382	91,118,409
1997	28,489	13,823,706	13,852,195	91,525,622
1998	19,836	13,509,892	13,529,728	96,896,183
1999	22,293	11,204,251	11,226,544	100,129,555
2000	8,375	9,380,866	9,389,241	101,367,577
2001	19,713	8,235,534	8,255,247	101,491,819
2002	8,067	8,230,493	8,238,560	101,707,709
2003	11,673	8,228,584	8,240,257	101,810,617
2004	12,663	8,232,112	8,244,775	101,751,568
2005	33,489	8,231,718	8,265,207	100,774,136
2006	14,781	8,228,365	8,243,146	97,484,900
2007	24,109	8,231,036	8,255,145	91,887,850
2008	15,760	8,978,025	8,993,785	87,351,907

[1] Releases from Lake Powell prior to 1997 are from USGS published data from the Colorado River at Lees Ferry, Arizona, surface water discharge station. Release values from 1997 through 2005 are values from the Glen Canyon Dam Supervisory Control and Data Aquisition (SCADA) system and are based on turbine rating curves. Release values from 2006 through 2008 are from acoustic velocity meters at Glen Canyon Dam, located on each penstock.

Table 2-2. End of Water Year Elevation and Storage of Lake Powell and Lake Mead, 1977 through 2008

Water Year	Powell Elevation (feet)	Powell Storage (acre-feet)	Mead Elevation (feet)	Mead Storage (acre-feet)
1977	3,636.70	15,616,782	1,180.48	20,205,000
1978	3,640.17	16,023,134	1,185.43	20,869,000
1979	3,678.10	20,982,671	1,195.30	22,242,000
1980	3,687.78	22,414,099	1,204.92	23,637,000
1981	3,671.96	20,110,881	1,192.67	21,870,000
1982	3,687.27	22,336,913	1,198.96	22,766,000
1983	3,698.86	24,139,580	1,218.21	25,658,000
1984	3,695.91	23,671,075	1,210.06	24,406,000
1985	3,685.66	22,094,527	1,213.14	24,875,000
1986	3,689.62	22,694,218	1,208.83	24,220,000
1987	3,687.95	22,439,859	1,209.79	24,365,000
1988	3,685.61	22,087,061	1,199.16	22,795,000
1989	3,665.20	19,183,233	1,190.22	21,528,000
1990	3,637.61	15,722,660	1,180.02	20,144,000
1991	3,628.62	14,698,880	1,173.01	19,233,000
1992	3,623.01	14,084,829	1,174.44	19,416,000
1993	3,662.52	18,824,804	1,189.15	21,379,000
1994	3,654.42	17,772,167	1,178.40	19,930,400
1995	3,687.10	22,311,240	1,184.28	20,713,805
1996	3,679.29	21,154,837	1,190.84	21,613,756
1997	3,690.32	22,801,446	1,205.81	23,768,699
1998	3,687.71	22,403,483	1,214.78	25,126,125
1999	3,691.59	22,996,950	1,211.29	24,592,086
2000	3,677.80	20,939,423	1,196.72	22,443,956
2001	3,664.84	19,134,795	1,177.96	19,872,756
2002	3,626.53	14,467,880	1,155.42	17,093,000
2003	3,603.73	12,109,533	1,142.12	15,617,840
2004	3,570.77	9,169,460	1,125.86	13,937,000
2005	3,601.97	11,939,007	1,138.36	15,219,160
2006	3,601.74	11,916,846	1,125.36	13,887,000
2007	3,601.87	11,929,370	1,111.06	12,504,640
2008	3,626.90	14,508,577	1,105.76	12,012,920

Table 2-3. End of Calendar Year Elevation, Storage and Calendar Year Release at Lake Mead, and Water Supply Condition[1] for Lower Division States, 1979 through 2008

Calendar Year	Elevation (feet)	Storage (acre-feet)	Release[2] (acre-feet)	Water Supply Condition	Flood Control Releases
1979	1,197.97	22,623,000	7,721,117		No
1980	1,202.88	23,336,000	11,088,000		Yes
1981	1,198.28	22,668,000	8,283,531		Yes
1982	1,208.37	24,151,000	7,458,506		No
1983	1,212.33	24,751,000	19,065,798		Yes
1984	1,207.90	24,081,000	21,411,174		Yes
1985	1,205.49	23,721,000	17,227,438		Yes
1986	1,210.39	24,456,000	17,547,570		Yes
1987	1,211.03	24,553,000	11,337,878		Yes
1988	1,199.75	22,880,000	9,425,712		Yes
1989	1,189.80	21,469,000	9,164,707		No
1990	1,177.89	19,864,000	9,203,921		No
1991	1,173.44	19,288,000	8,954,598		No
1992	1,176.84	19,729,000	7,826,896		No
1993	1,188.75	21,324,000	7,440,230	Normal	No
1994	1,176.52	19,689,000	9,354,254	Normal	No
1995	1,190.92	21,624,887	8,546,875	Normal	No
1996	1,194.38	22,111,580	9,965,288	Surplus[3]	No
1997	1,214.64	25,104,563	11,682,997	Surplus	Yes[4]
1998	1,212.53	24,781,094	12,781,057	Surplus	Yes
1999	1,213.94	24,996,810	11,028,388	Surplus	Yes
2000	1,196.12	22,358,160	10,675,985	Surplus	No[5]
2001	1,177.37	19,795,468	10,205,836	Surplus	No
2002	1,152.13	16,717,691	10,442,238	Full Domestic Surplus	No
2003	1,139.12	15,299,600	9,365,254	Full Domestic Surplus[6]	No
2004	1,130.01	14,355,020	9,345,126	Partial Domestic Surplus	No
2005	1,137.52	15,131,080	8,275,510	Normal	No
2006	1,128.12	14,164,120	9,260,297	Partial Domestic Surplus	No
2007	1,114.81	12,859,760	9,362,973	Partial Domestic Surplus	No
2008	1,110.97	12,496,210	9,545,339	ICS Surplus	No

[1] In 1993, the Secretary implemented the use of the terms Normal Condition, Shortage Condition, and Surplus Condition in the AOP to characterize the amount of water available for release under *Arizona* v. *California*. See Chapter 1 for additional information regarding AOPs.

[2] This total includes releases from Lake Mead to satisfy the Mexican Water Treaty.

[3] The determination in the 1996 AOP was a Normal Condition. That determination was modified in July 1996 to a Surplus Condition as noted in the 1997 AOP.

[4] The scheduled delivery to Mexico in the 1997 AOP was 1,500,000 acre-feet. That delivery schedule was modified in March 1997 to 1,700,000 acre-feet as noted in the 1998 AOP.

[5] Flood control releases were not required in calendar year 2000; however, the scheduled delivery to Mexico in the 2000 AOP was 1,700,000 acre-feet.

[6] 2001 ISG were suspended effective January 1, 2003, resulting in a Normal Condition and reinstated in October 2003, resulting in a Full Domestic Surplus Condition.

Table 2-4. Annual Consumptive Use in the Upper Basin for the States of Arizona, Colorado, New Mexico, Utah, and Wyoming, 1971 through 2008[1]

Calendar Year	Arizona	Colorado	New Mexico	Utah	Wyoming	Total
1971	11,100	1,700,400	179,600	729,500	333,700	2,954,300
1972	12,200	1,775,500	183,500	748,600	303,600	3,023,400
1973	11,400	1,536,200	319,600	730,000	303,600	2,900,800
1974	19,200	1,855,000	199,900	785,100	363,500	3,222,700
1975	25,200	1,777,400	290,400	615,100	291,300	2,999,400
1976	30,400	1,678,800	279,200	638,000	282,200	2,908,600
1977	34,000	1,607,700	208,600	396,700	218,900	2,465,900
1978	32,900	1,936,800	324,800	678,600	333,400	3,306,500
1979	33,900	1,824,400	401,100	725,800	348,000	3,333,200
1980	36,900	1,744,300	424,800	673,900	337,400	3,217,300
1981	41,800	2,086,100	314,600	666,500	341,000	3,450,000
1982	39,800	2,106,100	399,200	632,700	329,800	3,507,600
1983	41,600	1,919,500	400,900	596,500	346,100	3,304,600
1984	44,000	1,864,700	394,500	638,100	307,300	3,248,600
1985	44,000	1,993,800	375,100	755,000	336,400	3,504,300
1986	39,100	1,807,900	367,700	735,400	474,000	3,424,100
1987	38,200	1,896,000	339,500	767,700	478,300	3,519,700
1988	40,700	2,280,300	315,100	754,100	561,200	3,951,400
1989	40,200	2,406,000	380,200	741,700	477,900	4,046,000
1990	35,800	2,102,300	362,000	784,400	519,700	3,804,200
1991	39,000	2,168,100	401,400	821,000	441,900	3,871,400
1992	40,000	2,207,100	363,100	868,400	543,600	4,022,200
1993	39,400	2,056,000	393,700	823,000	419,700	3,731,800
1994	40,800	2,251,100	391,900	957,400	604,300	4,245,500
1995	39,800	1,711,300	384,700	791,400	436,800	3,364,000
1996	31,400	2,087,700	376,500	767,400	495,500	3,758,500
1997	31,400	1,966,200	425,900	768,100	442,100	3,633,700
1998	34,100	2,031,800	396,600	849,100	390,400	3,702,000
1999	35,700	1,853,400	376,100	858,200	415,100	3,538,500
2000	38,100	2,382,600	337,100	774,200	421,100	3,953,100
2001	37,600	2,329,800	402,700	966,500	429,900	4,166,500
2002	37,400	2,122,600	333,800	811,200	437,900	3,742,900
2003	36,000	2,079,300	383,300	877,600	436,600	3,812,800
2004	38,200	1,893,100	407,700	830,000	368,700	3,537,700
2005	37,100	1,856,100	466,300	853,200	405,100	3,617,800
2006	36,800	2,028,000	393,400	824,600	460,400	3,743,200
2007	36,900	1,961,300	414,700	677,800	515,800	3,606,500
2008[2]						

[1] All values in acre-feet from Reclamation's Upper Colorado River Basin Consumptive Uses and Losses Reports and do not include evaporation.

[2] As of December 31, 2008, provisional data for irrigated agriculture were not available and, therefore, consumptive use could not be estimated.

Table 2-5. Annual Consumptive Use in the Lower Basin for the States of Arizona, California, and Nevada, 1971 through 2008[1]

Calendar Year	Arizona	California	Nevada	Total
1971	1,296,930	5,216,192	50,586	6,563,708
1972	1,203,043	5,230,635	81,051	6,514,729
1973	1,268,744	5,317,547	92,649	6,678,940
1974	1,325,631	5,414,040	94,889	6,834,560
1975	1,358,003	4,983,705	72,140	6,413,848
1976	1,248,000	4,706,594	73,192	6,027,786
1977	1,231,274	5,097,343	73,174	6,401,791
1978	1,234,942	4,503,340	71,293	5,809,575
1979	1,150,853	4,788,423	60,074	5,999,350
1980	1,169,657	4,725,496	92,737	5,987,890
1981	1,415,850	4,795,949	110,017	6,321,816
1982	1,240,384	4,299,799	102,326	5,642,509
1983	1,062,169	4,245,045	86,596	5,393,810
1984	1,122,399	4,677,103	101,492	5,900,994
1985	1,194,208	4,778,749	101,709	6,074,666
1986	1,356,930	4,803,676	112,217	6,272,823
1987	1,734,172	4,891,961	108,863	6,734,996
1988	1,922,737	5,039,679	129,420	7,091,836
1989	2,229,697	5,144,417	156,213	7,530,327
1990	2,260,272	5,219,457	178,111	7,657,840
1991	1,864,360	5,005,595	180,224	7,050,179
1992	1,906,071	4,546,192	177,551	6,629,814
1993	2,246,695	4,835,017	204,402	7,286,114
1994	1,944,995	5,189,419	225,828	7,360,242
1995	2,028,809	4,836,801	215,718	7,081,328
1996	2,552,799	5,226,365	248,502	8,027,666
1997	2,696,974	5,161,892	242,045	8,100,911
1998	2,422,865	4,953,232	244,509	7,620,606
1999	2,579,702	5,107,177	289,515	7,976,394
2000	2,633,515	5,072,006	319,856	8,025,377
2001	2,687,812	5,168,643	313,937	8,170,392
2002	2,805,986	5,275,607	325,227	8,406,820
2003	2,830,599	4,408,746	298,392	7,537,737
2004	2,784,645	4,316,185	283,006	7,383,836
2005	2,428,469	4,344,258	291,778	7,064,505
2006	2,782,866	4,335,299	292,864	7,411,029
2007	2,783,323	4,370,695	300,312	7,454,330
2008	2,752,497	4,498,810	269,654	7,520,961

[1] All values in acre-feet from Reclamation's Compilation of Records in Accordance with Article V of the Decree of the Supreme Court of the United States in *Arizona* v. *California* and do not include evaporation.

Chapter 2: List of References

Treaties, Interstate Compacts, and Federal Statutes

Colorado River Compact, 1922. Appendix 1.

Colorado River Basin Project Act, Pub. L. No. 90-537, 82 Stat. 885 (1968). On DVD in *Updating the Hoover Dam Documents 1978* at XII-9.

National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (1970).

Endangered Species Act of 1973, Pub. L. No. 93-205, 87 Stat. 884 (1973).

Federal Court Decisions

Arizona v. *California*, 376 U.S. 340 (1964) (1964 Decree). Appendix 4 and DVD Supplement 3.

Arizona v. *California*, 547 U.S. 150 (2006) (Consolidated Decree). Appendix 5 and DVD Supplement 12.

Federal Register Notices

66 Fed. Reg. 7772 (January 25, 2001), Colorado River Interim Surplus Guidelines. Notice of Availability of Record of Decision for the adoption of Colorado River Interim Surplus Guidelines. DVD Supplement 94.

69 Fed. Reg. 28945 (May 19, 2004), Notice of Adoption of an Interim 602(a) Storage Guideline for Management of the Colorado River. DVD Supplement 95.

70 Fed. Reg. 57322 (September 30, 2005), Colorado River Reservoir Operations: Development of Lower Basin Shortage Guidelines and Coordinated Management Strategies for Lake Powell and Lake Mead Under Low Reservoir Conditions. Notice of intent to prepare an environmental impact statement (EIS) and notice to solicit comments and hold public scoping meetings on the development of Lower Basin shortage guidelines and coordinated management strategies for the operation of Lake Powell and Lake Mead under low reservoir conditions.

73 Fed. Reg. 19873 (April 11, 2008), Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead. Notice of Availability of the Record of Decision for the Adoption of Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead. DVD Supplement 96.

Records of Decision (RODs)

Secretary of the Interior, January 16, 2001, *Record of Decision, Colorado River Interim Surplus Guidelines Final Environmental Impact Statement*. Appendix 32.

Secretary of the Interior, December 13, 2007, *Record of Decision, Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations of Lake Powell and Lake Mead.* Appendix 35.

Reports

Taesam Lee and Jose D. Salas, Department of Civil and Environmental Engineering, Colorado State University, *Record Extension of Monthly Flows for the Colorado River System*, December 2006. Submitted to T. Fulp and D.K. Frevert, Bureau of Reclamation.

Fish and Wildlife Service, *Final Biological Opinion for the Proposed Adoption of Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead*, December 12, 2007. DVD Supplement 122.

Letters

Secretary of the Interior, May 2, 2005, to the Basin States Governors, AOP, Mid-Year Review Decision. Appendix 34.

Other

Updating the Hoover Dam Documents 1978, Chapters I, VI, VII, and Appendix 1 A.2. On DVD.

CHAPTER 3: ENVIRONMENTAL PROGRAMS AND COMPLIANCE ACTIVITIES

Introduction

Environmental statutes, particularly the National Environmental Policy Act of 1969, Public Law (Pub. L.) No. 91-190, 83 Stat. 852 (1970) (NEPA), and the Endangered Species Act of 1973, Pub. L. No. 93-205, 87 Stat. 884 (1973) (ESA), played a major role in Colorado River operations and management during the period from 1979 through 2008. This chapter briefly describes NEPA and ESA, describes how these and other statutes affected the management of the Colorado River in both the Upper and Lower Basins, and describes the development of a number of ongoing environmental programs, including recovery implementation programs in the Upper Basin and the Lower Colorado River Multi-Species Conservation Program (LCR MSCP) in the Lower Basin. In addition, this chapter discusses the Grand Canyon Protection Act of 1992, Pub. L. No. 102-575, Title XVIII, 106 Stat. 4669 (1992), and the resulting modifications to the operations of Glen Canyon Dam. NEPA and ESA litigation relating to the Bureau of Reclamation's (Reclamation) Colorado River operations is discussed in Chapter 12.

NEPA

NEPA was enacted on January 1, 1970. The NEPA process helps to ensure that Federal decisionmakers and the public are informed regarding the potential impacts of proposed Federal actions. Reclamation meets the requirements of NEPA in the Colorado River Basin through the preparation of environmental compliance documents such as Environmental Impact Statements (EISs) analyzing the potential impacts of various alternatives. EISs lead to adoption of Records of Decision (RODs) in which a particular course of action, that is, a specific action alternative or a no-action (status-quo) alternative, is selected. Several environmental compliance documents prepared during the period from 1979 through 2008 are described in other chapters of this volume in the context of the discussion of the particular actions under consideration.

ESA

ESA was enacted on December 28, 1973. Key provisions of the ESA, as amended, include: Section 7(a)(1), which directs Federal agencies to utilize their authorities in furtherance of the purposes of the ESA by carrying out programs for

the conservation of endangered and threatened species; Section 7(a)(2), which requires Federal agencies to ensure their discretionary actions do not jeopardize the continued existence of listed threatened or endangered species or adversely modify designated critical habitat (see 50 Code of Federal Regulations (CFR) § 402.13 for a description of the Section 7 informal consultation process and 50 CFR § 402.14 for a description of the Section 7 formal consultation process); Section 9, which prohibits unauthorized take of individual members of listed species; and Section 10, which provides a mechanism where, for non-Federal activities, the United States Fish and Wildlife Service (USFWS) may permit the taking of listed species "if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity."

In addition to other actions, Reclamation met the requirements of the ESA in the Colorado River Basin through a number of Section 7 consultations with USFWS during the period from 1979 through 2008. As a result of these consultations, Reclamation modified operations of some Colorado River dams and reservoirs in the Upper Basin to assist in the conservation of federally listed endangered and threatened species, and engaged in habitat restoration and protection, native fish augmentation programs, participation in endangered species recovery programs, and other similar activities throughout the Basin.

Endangered Fish Species on the Colorado River

As of December 31, 2008, the USFWS had listed the following four native fish species as endangered:

- Humpback chub (*Gila cypha*) - listed as endangered in 1967 under the Act of October 15, 1966, Pub. L. No. 89-669, 80 Stat. 926 (1966) (Endangered Species Preservation Act) in a notice published in the *Federal Register* at 32 Fed. Reg. 4001 (March 11, 1967)

- Colorado pikeminnow (*Ptychocheilus lucius*) - listed as endangered in 1967 under the Endangered Species Preservation Act as the Colorado River squawfish in a notice published in the *Federal Register* at 32 Fed. Reg. 4001 (March 11, 1967)

- Bonytail (*Gila elegans*) - listed as endangered in 1980 under the ESA as the bonytail chub in a notice published in the *Federal Register* at 45 Fed. Reg. 27710 (April 23, 1980)

- Razorback sucker (*Xyrauchen texanus*) - listed as endangered in 1991 under the ESA in a notice published in the *Federal Register* at 56 Fed. Reg. 54957 (October 23, 1991)

In 1994, the USFWS designated 1,980 miles of the Colorado River and its tributaries as critical habitat for these four fish species. This designation was published in the *Federal Register* at 59 Fed. Reg. 13374 (March 21, 1994). Under Section 7(a)(2) of the ESA, action agencies such as Reclamation must avoid adverse modifications to designated critical habitat. Programs were developed in both the Upper and Lower Basins to address these and other endangered species.

Upper Basin

Many of the Upper Basin environmental considerations have been addressed in decisions concerning operation of particular projects and, for this reason, these environmental compliance activities are discussed later in this chapter in the context of project operations. In addition, specific programs were established in the Upper Basin to address the endangered fish species and are discussed in the following section.

Recovery Programs

To promote cooperative discussions regarding water project development and endangered fishes in the Upper Basin, the USFWS, Reclamation, and the States of Colorado, Utah, and Wyoming entered into a Memorandum of Understanding dated August 3, 1984, forming a Coordinating Committee to develop a program of reasonable and prudent alternatives associated with water project development and depletions in the Upper Basin. The committee's work became the basis for two related recovery programs established in the late 1980s and early 1990s.

These recovery programs were implemented as joint efforts between the United States Department of the Interior, the United States Department of Energy's Western Area Power Administration (Western), Upper Basin States acting through their governors, and Upper Basin Native American tribes. The two programs are established by these agreements:

- Cooperative Agreement for the Recovery Implementation Program for Endangered Species in the Upper Colorado River Basin (Upper Colorado River RIP), executed in 1988 and extended in 2001

- Cooperative Agreement for the San Juan River Basin Recovery Implementation Program (San Juan River RIP), executed in 1992 and extended in 2006

Congress approved these programs in the Act of October 30, 2000, Pub. L. No. 106-392, 114 Stat. 1602 (2000), with the programs later extended by the Act of December 19, 2002, Pub. L. No. 107-375, 116 Stat. 3113 (2002) and the Upper Colorado and San Juan River Basin Endangered Fish Recovery Programs Reauthorization Act of 2005, Pub. L. No. 109-183, 120 Stat. 290 (2006).

These programs share the dual goals of recovering populations of endangered fish and continuing water development to meet current and future human needs. Program actions provide ESA compliance for more than 1,600 Federal, tribal, and non-Federal water projects depleting more than 3 million acre-feet of water per year in the Colorado and San Juan Rivers and their tributaries.

The 1988 Upper Colorado River RIP Cooperative Agreement states that "[t]he Program provides for a broad range of measures to manage and recover three endangered fishes and to manage the razorback sucker, while providing for new water development to proceed in the Upper Colorado River Basin." The Cooperative Agreement identifies 5 principal activities of the Upper Colorado River RIP: (1) habitat management through the provision of instream flows; (2) nonflow habitat development and maintenance; (3) native fish stocking; (4) management of nonnative species and sportfishing; and (5) research, data management, and monitoring.

Program activities further include construction and operation of fish ladders to provide the fish access to former spawning areas blocked by diversion and storage dams. For instance, successful ladders have been operating since 1996 around the Redlands Diversion Dam on the Gunnison River in Colorado. The fish ladders near Grand Junction at the Grand Valley Diversion Dam (2006) and near Palisade at the Price-Stubb Diversion Dam (2008) were put into operation to enable native fish to access the uppermost reaches of the Colorado River.

As of December 31, 2008, the program partners for the Upper Colorado River RIP included Reclamation, the USFWS, the National Park Service, Western, the State of Colorado, the State of Utah, the State of Wyoming, the Colorado River Energy Distributors Association, the Colorado Water Congress, the Utah Water Users Association, The Nature Conservancy, Western Resource Advocates, and the Wyoming Water Association.

The 2006 San Juan River RIP's Final Draft Program Document (2006 Program Document) identifies the following two specific goals:

> (1) to conserve populations of Colorado pikeminnow and razorback sucker in the Basin consistent with the recovery goals established under the Endangered Species Act, 16 U.S.C. 1531 et seq.; and
>
> (2) to proceed with water development in the Basin in compliance with federal and state laws, interstate compacts, Supreme Court decrees, and federal trust responsibilities to the Southern Utes, Ute Mountain Utes, Jicarillas, and the Navajos.

The 2006 Program Document for the San Juan River RIP identifies the following activities of the program: (1) protection, management, and augmentation of habitat; (2) water quality protection and enhancement; (3) interactions between

native and non-native fish species; (4) monitoring and data management; and (5) protection of genetic integrity and management and augmentation of populations. The San Juan River RIP also has a Long-Range Plan which outlines a multi-year proposal to guide the program's research and monitoring programs and recovery actions.

As of December 31, 2008, the program participants for the San Juan River RIP included Reclamation, the USFWS, the Bureau of Indian Affairs, the Bureau of Land Management, the State of Colorado, the State of New Mexico, the Southern Ute Indian Tribe, the Ute Mountain Ute Tribe, the Jicarilla Apache Nation, the Navajo Nation, water development interests (local governments and non-Federal water users), and conservation interests (as of December 31, 2008, represented by The Nature Conservancy).

Flaming Gorge Dam Operations

Flaming Gorge Dam is located on the Green River, a major tributary of the Colorado River, in northeastern Utah. Flaming Gorge Dam is one of the initial units authorized by the Colorado River Storage Project Act, Pub. L. No. 84-485, 70 Stat. 105 (1956) (CRSPA) for the Colorado River Storage Project (CRSP). Flaming Gorge Dam was completed in 1963, with a total storage capacity of 3,788,900 acre-feet. During the 1960s, dam operation focused primarily on power generation during periods of peak power demand. In the mid-1980s, Reclamation, in consultation with the USFWS, began gradual modification of annual releases to better reflect natural hydrograph conditions. These modifications were undertaken to assist in the recovery of four endangered fish species known to live in the Green River below Flaming Gorge Dam: the humpback chub, the Colorado pikeminnow, the bonytail, and the razorback sucker.

On November 25, 1992, the USFWS issued a *Final Biological Opinion on the Operation of Flaming Gorge Dam* (1992 BO), which concluded that the operations of Flaming Gorge Dam were jeopardizing the continued existence of these four endangered fish species. The 1992 BO provided a Reasonable and Prudent Alternative (RPA) to operate Flaming Gorge Dam in a manner which would remove jeopardy for the endangered fish. One element of the RPA was for Reclamation to conduct a 5-year period of experimentation in order to learn which conditions best favored the endangered fishes and then work with the USFWS to develop flow recommendations to provide guidance regarding the operation of Flaming Gorge Dam in a manner to avoid jeopardizing the endangered fishes known to live in the Green River.

In September 2000, a report was issued by the Upper Colorado River RIP, in cooperation with Reclamation and Western, entitled *Flow and Temperature Recommendations for Endangered Fishes in the Green River Downstream of Flaming Gorge Dam* (Flow and Temperature Recommendations). This report was the product of the 5-year experimental period and provided the best available

scientific information on the needs of the endangered fish in the Green River. In 2000, Reclamation began a NEPA process to modify the operation of Flaming Gorge Dam in light of the Flow and Temperature Recommendations. The *Operation of Flaming Gorge Dam Final Environmental Impact Statement* was released by Reclamation in September 2005. The USFWS issued a nonjeopardy biological opinion on the proposed action, also in September 2005, entitled *Final Biological Opinion on the Operation of Flaming Gorge Dam*.

A *Record of Decision, Operation of Flaming Gorge Dam Final Environmental Impact Statement* (2006 Flaming Gorge ROD) was signed by Reclamation on February 16, 2006, and modified the operation of Flaming Gorge Dam to achieve, to the extent possible, the Flow and Temperature Recommendations. The 2006 Flaming Gorge ROD was based on a finding that the flow regime selected by the ROD would assist in avoiding jeopardy to listed species and in making progress toward recovery of listed fish, which would, in turn, facilitate the ability of the Upper Basin States to continue utilizing and further developing their Colorado River apportionments pursuant to the Colorado River Compact.

Wayne N. Aspinall Unit Operations

The Wayne N. Aspinall Unit (Aspinall Unit), originally authorized in CRSPA as the "Curecanti" initial unit, consists of three reservoirs located on the Gunnison River in Western Colorado: Blue Mesa, Morrow Point, and Crystal. The Gunnison begins at the confluence of the East and Taylor Rivers, from which it flows 25 miles to Blue Mesa Reservoir, and then through Morrow Point and Crystal Reservoirs, respectively. The Aspinall Unit was constructed between 1963 and 1977. The total storage capacities for these reservoirs are: 940,700 acre-feet in Blue Mesa; 117,190 acre-feet in Morrow Point; and 25,000 acre-feet in Crystal.

Most of the water storage occurs in the uppermost and largest reservoir, Blue Mesa. The upstream powerplants at Blue Mesa and Morrow Point Dams provide power generation during periods of peak power demand. Crystal Dam serves as a regulating reservoir, helping to stabilize flows in the Gunnison River below the three dams.

In July 2003, the USFWS issued its final report on *Flow Recommendations to Benefit Endangered Fishes in the Colorado and Gunnison Rivers*. The report, which was revised in October 2003, presents flow recommendations for two different river reaches: one for the lower Gunnison River between Delta and Grand Junction, Colorado; and the other for the Colorado River between the Gunnison River confluence and the Colorado-Utah State line. In January 2004, Reclamation published in the *Federal Register* at 69 Fed. Reg. 2943 (January 21, 2004) a notice of intent to prepare an EIS to describe potential effects of operational changes for the Aspinall Unit. The purpose of Reclamation's proposed action is to operate the Aspinall Unit to avoid jeopardy to endangered

species while maintaining the congressionally authorized Aspinall Unit purposes. As of December 31, 2008, the NEPA process was ongoing.

Navajo Unit Operations

The Navajo Unit (Navajo Dam and Reservoir) is located on the San Juan River in New Mexico, approximately 34 miles east of Farmington. The Navajo Unit was authorized as an initial unit of CRSP. Water development supported by the Navajo Unit includes the San Juan-Chama Project, the Navajo Indian Irrigation Project, portions of the Jicarilla Apache Nation water settlement, and development of the Animas-La Plata Project. Also, as of December 31, 2008, expected to be included are the proposed Navajo-Gallup Water Supply Project and other water uses. The Navajo Dam Hydroelectric Plant is owned and operated by the City of Farmington and began full commercial operation in 1989. Navajo Dam was completed in 1963, creating Navajo Reservoir, which has a total capacity of approximately 1,700,000 acre-feet.

Throughout the 1970s and the 1980s, Navajo Dam was operated to maximize water storage and minimize flow variation in the river below the dam, which reduced the magnitude of peak spring flows and supplemented flows in other seasons. Regulated flows, along with other factors including loss of habitat and water development in the basin, had an adverse impact on native fish in the San Juan River.

In May 1999, a report entitled *Flow Recommendations for the San Juan River* (San Juan Flow Recommendations) was completed by the San Juan River RIP following a 7-year research period. This report outlines flow recommendations for the San Juan River below Navajo Dam to promote the recovery of the endangered Colorado pikeminnow and razorback sucker; to maintain important habitat for these two species, as well as other native species; and to provide information for the evaluation of continued water development in the basin.

In 2006, Reclamation completed a NEPA process on the implementation of operations at Navajo Dam that met the San Juan Flow Recommendations. In January 2006, the USFWS issued a nonjeopardy *Final Biological Opinion for Navajo Reservoir Operations, Colorado River Storage Project, Colorado-New Mexico-Utah*. The *Final Environmental Impact Statement, Navajo Reservoir Operations* was issued in April 2006, and a notice of availability was published in the *Federal Register* at 71 Fed. Reg. 20416 (April 20, 2006). The *Record of Decision, for the Navajo Reservoir Operations, Navajo Unit – San Juan River New Mexico, Colorado, Utah, Final Environmental Impact Statement* was signed by Reclamation on July 31, 2006.

Glen Canyon Dam Operations

Glen Canyon Dam is located in northeastern Arizona just upstream of Lee Ferry, Arizona. See Chapter 2. Glen Canyon Dam was authorized as an initial unit of CRSP. Construction on Glen Canyon Dam began in the fall of 1956. Closure of

the dam and the first storage of water occurred in March 1963. Lake Powell, the reservoir impounded by Glen Canyon Dam, has a capacity of approximately 24,332,000 acre-feet of water.

In the 1980s, various scientific, environmental, and recreational interests began to identify changes to the Grand Canyon's riparian resources in areas downstream of Glen Canyon Dam. These concerns led to investigations into Glen Canyon Dam operations in order to better understand the impacts of those operations on the Grand Canyon's ecological systems. While these studies were underway, Congress enacted the Grand Canyon Protection Act of 1992, Pub. L. No. 102-575, Title XVIII, 106 Stat. 4669 (1992).

Grand Canyon Protection Act of 1992

Provisions of the Grand Canyon Protection Act of 1992 include:

> Section 1802(a). The Secretary shall 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 project [sic], 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.
>
> Section 1802(b). The Secretary shall implement this section in a manner fully consistent with and subject to the Colorado River Compact, the Upper Colorado River Basin Compact, the Water Treaty of 1944 with Mexico, the decree of the Supreme Court in Arizona v. California, and the provisions of the Colorado River Storage Project Act of 1956 and the Colorado River Basin Project Act of 1968 that govern allocation, appropriation, development, and exportation of the waters of the Colorado River Basin.
>
> * * *
>
> Section 1804(a). Not later than 2 years after the date of enactment of this Act, the Secretary shall complete a final Glen Canyon Dam environmental impact statement, in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.).
>
> Section 1804(b). The Comptroller General shall-
>
> (1) audit the costs and benefits to water and power users and to natural, recreational, and cultural resources resulting from management policies and dam oporations [sic] identified pursuant to the environmental impact statement described in subsection (a); and
> (2) report the results of the audit to the Secretary and the Congress.
>
> Section 1804(c). (1) Based on the findings, conclusions, and recommendations made in the environmental impact statement prepared pursuant to subsection (a) and the audit performed pursuant to subsection (b), the Secretary shall-

> (A) adopt criteria and operating plans separate from and in addition to those specified in section 602(b) of the Colorado River Basin Project Act of 1968; and
> (B) exercise other authorities under existing law, so as to ensure that Glen Canyon Dam is operated in a manner consistent with section 1802.

In accordance with the Grand Canyon Protection Act of 1992, Reclamation completed the *Operation of Glen Canyon Dam Final Environmental Impact Statement* (1995 FEIS) in 1995. Alternatives considered in the 1995 FEIS varied with respect to monthly, daily, and hourly water release fluctuations but did not analyze modification of the annual release volume from Glen Canyon Dam.

Secretary of the Interior (Secretary) Bruce Babbitt signed the *Record of Decision, Operation of Glen Canyon Dam Final Environmental Impact Statement* (1996 Glen Canyon Dam ROD) on October 9, 1996. The 1996 Glen Canyon Dam ROD selected the Modified Low Fluctuating Flow Alternative, which "substantially reduce[s] daily fluctuations from historic levels." As described on page 28 of the 1995 FEIS, the Modified Low Fluctuating Flow Alternative "would have the same annual and essentially the same monthly operating plan as described under the No Action Alternative but would restrict daily and hourly operations more than [the other fluctuating flow alternatives described in the 1995 FEIS]." The 1996 Glen Canyon Dam ROD also allows for certain high flow releases and experimental releases. A number of experimental releases, including high flow releases, steady flow releases, and fluctuating flow releases, were made between 1996 and December 31, 2008, pursuant to the 1996 Glen Canyon Dam ROD.

The 1996 Glen Canyon Dam ROD also established the Glen Canyon Dam Adaptive Management Program (AMP). The Adaptive Management Work Group, established to implement the AMP, is chartered as a Federal advisory committee, under the Federal Advisory Committee Act, Pub. L. No. 92-463, 86 Stat. 770 (1972). The most recent charter of the Adaptive Management Work Group, as of December 31, 2008, was signed by Secretary Dirk Kempthorne on July 23, 2008. As set forth in the 1996 Glen Canyon Dam ROD, the AMP applies an adaptive management framework for making recommendations to the Secretary on prospective adjustments to dam operations and other related management actions. The 1996 Glen Canyon Dam ROD provides that adaptive management would be used to "evaluate the effects of operational changes [to Glen Canyon Dam operations] over time and make modifications according to scientific findings."

In accordance with Section 1804(b) of the Grand Canyon Protection Act of 1992, the General Accounting Office submitted a report to the Secretary and to Congress entitled *Bureau of Reclamation – An Assessment of the Environmental Impact Statement on the Operations of the Glen Canyon Dam*, October 1996.

In accordance with Section 1804(c) of the Grand Canyon Protection Act of 1992, the Secretary, acting through the Commissioner of Reclamation, adopted the Glen Canyon Dam Operating Criteria, which were published in the *Federal Register* at 62 Fed. Reg. 9447 (March 3, 1997).

In addition, during the period from 1979 through 2008, there were multiple consultations between USFWS and Reclamation regarding Glen Canyon Dam operations, resulting in the USFWS issuing several related documents, including:

- *Substantiating Report, Operation of Glen Canyon Dam – Fish and Wildlife Coordination Act Report*, June 28, 1994, prepared in accordance with the Fish and Wildlife Coordination Act, Pub. L. No. 85-624, 72 Stat. 563 (1958)

- *Final Biological Opinion, Operation of Glen Canyon Dam as the Modified Low Fluctuating Flow Alternative of the Final Environmental Impact Statement*, December 21, 1994, transmitted to Reclamation January 7, 1995

- *Biological and Conference Opinions on Operation of Glen Canyon Dam - Controlled Release for Habitat and Beach Building*, February 16, 1996

- *Biological Opinion, November 1997 – Fall Test Flow from Glen Canyon Dam*, October 30, 1997

- *Biological Opinion*, *Section 7 Consultation on Proposed Experimental Releases from Glen Canyon Dam and Removal of Non-native Fish*, December 6, 2002

- *Biological Opinion, Reinitiation of Section 7 Consultation on Proposed Experimental Releases from Glen Canyon Dam and Removal of Non-native Fish*, June 12, 2003

- *Biological Opinion, Reinitiation of Section 7 Consultation on Proposed Experimental Releases from Glen Canyon Dam and Removal of Non-native Fish*, August 12, 2003

- *Final Biological Opinion for the Operation of Glen Canyon Dam*, February 27, 2008

The February 27, 2008, *Final Biological Opinion for the Operation of Glen Canyon Dam* by the USFWS was prepared in response to Reclamation's December 21, 2007, transmittal to the USFWS of the *Biological Assessment on the Operation of Glen Canyon Dam and Proposed Experimental Flows for the Colorado River Below Glen Canyon Dam During the Years 2008-2012*, dated December 2007. Reclamation, on February 29, 2008, adopted the *Finding of No*

Significant Impact, Final Environmental Assessment for Experimental Releases from Glen Canyon Dam, Arizona, 2008-2012, Colorado River Storage Project, Coconino County, Arizona. As of December 31, 2008, the proposed experimental flows during the period 2008 through 2012 were the subject of ongoing litigation styled: *Grand Canyon Trust* v. *U.S. Bureau of Reclamation*, Case No. 3:07-CV-8164-DGC (D. Ariz).

Lower Basin: The Lower Colorado River Multi-Species Conservation Program

Within the Lower Basin, ESA coverage for Reclamation's ongoing mainstream Colorado River operations is provided by the Lower Colorado River Multi-Species Conservation Program (LCR MSCP).

Prior to 1994, Reclamation addressed ESA compliance in the Lower Basin on an action-by-action basis for its operations and maintenance activities on the lower Colorado River, resulting in a number of specific efforts to address effects on federally listed species. With the designation of critical habitat for the razorback sucker, humpback chub, Colorado pikeminnow, and bonytail, Reclamation and stakeholders recognized a need for a comprehensive program to comply with the ESA for various ongoing and future Federal and non-Federal activities on the lower Colorado River within the Federal legal framework governing the Secretary's management of the Colorado River.

Lower Colorado River stakeholders recognized that a comprehensive plan for aquatic and riparian species would likely be more efficient and effective than action-by-action consultations. Such a plan could include actions designed to prevent the need for future listing of other species, thus addressing the needs of species on a proactive basis. Also, by analyzing and mitigating current as well as projected future impacts in one comprehensive program, the species covered by the LCR MSCP would gain a greater benefit as compared to action-by-action consultations.

Beginning in 1994, multiple interests in the Lower Basin joined together with Reclamation to develop the LCR MSCP. Federal participants included Reclamation, USFWS, National Park Service, Bureau of Indian Affairs, Bureau of Land Management, and Western. Non-Federal partners included water, power, and wildlife agencies from the States of Arizona, California, and Nevada; other groups, including Native American tribes; and other stakeholders. The group of stakeholders formed a partnership to develop a long-term ESA compliance and resource management program for the historic flood plain of the lower Colorado River from the full pool elevation of Lake Mead to the Southerly International Boundary (SIB) with the United Mexican States (Mexico).

A formal steering committee with representatives of the partnership was formed in 1995 to direct the planning process. This steering committee was later designated by the USFWS as the Ecosystem Conservation Recovery Implementation Team for the lower Colorado River to facilitate development of an ecosystem-based habitat conservation plan. Several other entities, including public agencies and nongovernmental organizations, participated in the process of developing the LCR MSCP.

Beginning in 1995, the United States Department of the Interior entered into a number of agreements relating to the development of the LCR MSCP, including:

- Memorandum of Understanding Amongst the United States of America, through its Department of the Interior, Arizona Department of Water Resources, Colorado River Board of California, Colorado River Commission of Nevada, Arizona Game and Fish Commission, California Department of Fish and Game, Nevada Division of Wildlife, February 24, 1995, to create a forum to consider "the effects of water and power resources development, management, operations, maintenance and replacement, or activities to offset those effects, to endangered, threatened, and candidate species within the 100-year floodplain of the mainstream Colorado River and the full pool elevation of affected reservoirs from below Glen Canyon Dam to the Southerly International Boundary"

- Memorandum of Agreement for Development of a Lower Colorado River Species Conservation Program, August 2, 1995, among agencies of the United States, the State of Arizona, the State of California, and the State of Nevada to initiate the development of a program "which will accommodate current water diversions and power production and optimize opportunities for future water and power development, while working toward the conservation of habitat and toward the recovery of included species, and reducing the likelihood of additional species listings" in the mainstem of the Colorado River "from below Glen Canyon Dam to the Southerly International Boundary, including the 100-year floodplain and reservoir full-pool elevations within the states of Arizona, California, and Nevada"

    - Memorandum of Clarification, July 17, 1996, clarifying the intent of the parties with respect to the August 2, 1995, Memorandum of Agreement

- Agreement Between the United States Department of the Interior and the Lower Colorado River Multi-Species Conservation Program Steering Committee, June 26, 1996, (1996 Cost Sharing Agreement), a cost-sharing agreement "to establish funding commitments and arrangements" to develop the LCR MSCP program and implement interim conservation measures, modified on April 28, 1997, to extend the date for a non-Federal

cost-sharing agreement, and later amended by Amendment No. 1 dated February 15, 2001, and Amendment No. 2 dated August 27, 2003

Additional agreements were also entered into among non-Federal parties relating to the establishment and funding of the LCR MSCP.

In August 1996, Reclamation submitted the *Biological Assessment on Operations, Maintenance, and Sensitive Species of the Lower Colorado River* to the USFWS and requested formal ESA Section 7 consultation on routine operations and maintenance on the lower Colorado River from Lake Mead to the SIB. The 1996 biological assessment addressed actions where Reclamation had discretionary involvement or control and served as a reference for the subsequent development and implementation of the LCR MSCP by lower Colorado River stakeholders pursuant to ESA Section 7 and Section 10(a)(1)(B).

On April 30, 1997, the USFWS issued its *Biological and Conference Opinion on Lower Colorado River Operations and Maintenance – Lake Mead to Southerly International Boundary* that found the proposed action not likely to jeopardize the continued existence of the flat-tailed horned lizard (*Phrynosoma mcalli*) or Yuma clapper rail (*Rallus llogirostris yumanensis*) but likely to jeopardize the continued existence of the bonytail, razorback sucker, and southwestern willow flycatcher (*Empidonax trailii extimus*). The 1997 biological and conference opinion was designed to be in effect for a 5-year period to address Reclamation's ESA obligations during the period in which the LCR MSCP was being developed. USFWS developed an RPA containing 17 provisions, some of which were to be completed within 5 years of issuance. Longer term requirements were expected to become a portion of the actions undertaken by the LCR MSCP.

Reclamation implemented the 1997 biological and conference opinion RPA provisions. In addition to the development of the LCR MSCP, major activities included:

- Acquisition of 1,400 acres of suitable southwestern willow flycatcher habitat
- Development of 300 acres of native fish impoundments
- Stocking of 50,000 razorback suckers below Parker Dam

On May 1, 1997, the United States Department of the Interior entered into the Lower Colorado River Multi-Species Conservation Program Joint Participation Agreement Among the U.S. Department of the Interior, Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, and National Park Service, State of Arizona, represented by the Arizona Department of Water Resources and the Arizona Game and Fish Commission, State of California, represented by the Colorado River Board of California and the California

Department of Fish and Game, and the State of Nevada, represented by its Colorado River Commission and the Division of Wildlife of the State Department of Conservation and Natural Resources (1997 Joint Participation Agreement).

In the 1997 Joint Participation Agreement, the parties formally established their participation in the LCR MSCP and formally established the LCR MSCP Steering Committee and provided for its functions. On April 28, 1997, the 1996 Cost Sharing Agreement described above was modified to extend the date for development of a non-federal cost-sharing agreement. In May 1997, State agencies from the Lower Basin States entered into an interstate cost sharing agreement. The framework for the LCR MSCP was then in place.

In addition to work and conservation measures undertaken following adoption of the 1997 Joint Participation Agreement, the LCR MSCP Steering Committee also worked to develop conservation measures and initiated conservation measures outlined in a USFWS January 12, 2001, *Biological Opinion for Interim Surplus Criteria, Secretarial Implementation Agreements, and Conservation Measures on the Lower Colorado River, Lake Mead to the Southerly International Boundary Arizona, California and Nevada*, prepared in conjunction with the adoption of the Interim Surplus Guidelines (see Chapter 2) as well as the Colorado River Water Delivery Agreement: Federal Quantification Settlement Agreement (see Chapter 6). These included the development of 372 acres of habitat for the southwestern willow flycatcher and 44 acres of backwater habitat for native fish.

In March 2002, recognizing that completion of a comprehensive multi-species plan would require additional time and effort, Reclamation requested that the ESA coverage provided by the 1997 biological and conference opinion be extended by submitting its *Biological Assessment for Continued Discretionary Operations, Maintenance, and Sensitive Species of the Lower Colorado River for the Period of April 30, 2002 – April 30, 2005* to the USFWS. On April 30, 2002, the USFWS issued its biological opinion *Reinitiation of Formal Section 7 Consultation on Lower Colorado River Operations and Maintenance – Lake Mead to Southerly International Boundary, Arizona, California and Nevada* that extended ESA coverage for Reclamation's discretionary actions until April 30, 2005.

LCR MSCP Federal and non-Federal participants worked closely with the USFWS to develop the draft Habitat Conservation Plan (HCP) and the draft biological assessment for the LCR MSCP. The permit application and the LCR MSCP planning documents were submitted to the USFWS in draft form in April of 2004 and, after a public process, were finalized on December 17, 2004. The LCR MSCP HCP incorporates the RPAs outlined in the USFWS biological and conference opinions dated 1997, 2001, and 2002. The USFWS issued the *Biological and Conference Opinion on the Lower Colorado River Multi-Species Conservation Program* on March 4, 2005 (2005 Biological and Conference Opinion), addressing the LCR MSCP HCP.

The LCR MSCP provides ESA Section 7 coverage for specific identified Federal actions and Section 10 coverage for specific non-Federal covered activities for a 50-year period through 2055. Activities which could not be clearly identified as falling under either Section 7 or Section 10 were also analyzed and mitigated as part of the LCR MSCP HCP. The 2005 Biological and Conference Opinion contains the Incidental Take Statement which addresses the Section 7 coverage for the implementation of the Federal actions addressed in that 2005 opinion. An Endangered & Threatened Species – Incidental Take Permit, dated April 4, 2005, provides the non-Federal LCR MSCP permit applicants with coverage under Section 10(a)(1)(B) of the ESA.

The identified purposes of the LCR MSCP are to:

- Conserve the habitat of the lower Colorado River from the full pool elevation of Lake Mead to the SIB and work toward the recovery of threatened and endangered species, as well as reduce the likelihood of additional species being listed

- Accommodate present water diversions and power production and optimize opportunities for future water and power development to the extent consistent with law

- Provide the basis for incidental take authorizations under Sections 7 and 10 of the ESA

After nearly a decade of work to develop a comprehensive approach to species protection, implementation of the 50-year LCR MSCP began with Secretary Gale A. Norton signing the *Record of Decision, Lower Colorado River Multi-Species Conservation Plan, April 2005* (LCR MSCP ROD). Reclamation's Lower Colorado Regional Office serves as the lead agency responsible for implementation of the LCR MSCP. The approved plan includes the creation of more than 8,100 acres of riparian, marsh, and backwater habitat for 6 listed species and 20 other species native to the lower Colorado River. In addition, the LCR MSCP is committed to providing the level of funding necessary to produce and stock up to 660,000 subadult razorback suckers and up to 620,000 subadult bonytails to augment existing populations of these native fish.

The LCR MSCP HCP provides measures to avoid, minimize, and mitigate, to the maximum extent practicable, the potential effects from covered actions on listed and other covered species and their habitats. Conservation measures outlined in the HCP must be completed to remain in compliance with the incidental take permit.

Total LCR MSCP costs over the 50-year program were calculated at $626 million (2003 dollars indexed annually to inflation), with one-half of these costs being provided by non-Federal partners and one-half by the United States. The

United States, acting through Reclamation, and the non-Federal partners have ensured sufficient funding to implement the LCR MSCP under guidelines established within the LCR MSCP Funding and Management Agreement dated April 4, 2005.

At the time implementation started in 2005, the LCR MSCP was unique in that it provided integrated coverage both under Section 7 of the ESA (for Federal actions) and under Section 10 of the ESA (for non-Federal activities). The covered actions comprise both Federal actions and non-Federal activities, including:

- Impacts of changes in points of diversion of lower Colorado River water, resulting in the reduction of annual flow of the Colorado River between Parker Dam and Imperial Dam by up to 1,574,000 acre-feet

- Impacts of changes in points of diversion of lower Colorado River water, resulting in the reduction of annual flow of the Colorado River between Hoover Dam and Davis Dam by up to 845,000 acre-feet and between Davis Dam and Parker Dam by up to 860,000 acre-feet

- Impacts of diversions under current and future Colorado River water entitlements under Shortage, Normal, and Surplus Conditions

- Impacts of current and future operations and maintenance of the lower Colorado River including operation of the dams and reservoirs for water delivery and power production, and lower Colorado River channel and levee maintenance

- Numerous smaller actions and activities by Federal and non-Federal entities

The LCR MSCP Steering Committee provides input and oversight for the LCR MSCP implementation. The LCR MSCP Steering Committee, consisting of 56 members as of December 31, 2008, is an association of LCR MSCP stakeholders including Federal agencies, State wildlife agencies, Native American tribes, water and power entities, and others participating in the development and implementation of the LCR MSCP.

The final "Program Documents" for the LCR MSCP include the following:

- *Lower Colorado River Multi-Species Conservation Program, Volume I: Final Programmatic Environmental Impact Statement/Environmental Impact Report*, prepared by the United States Department of the Interior Bureau of Reclamation, United States Fish and Wildlife Service, and The Metropolitan Water District of Southern California, dated December 17, 2004

- *Lower Colorado River Multi-Species Conservation Program, Volume II: Final Habitat Conservation Plan*, dated December 17, 2004

- *Lower Colorado River Multi-Species Conservation Program, Volume III: Biological Assessment,* dated December 17, 2004

- USFWS, *Biological and Conference Opinion on the Lower Colorado River Multi-Species Conservation Program, Arizona, California, and Nevada*, dated March 4, 2005

- Lower Colorado River Multi-Species Conservation Program Funding and Management Agreement, dated April 4, 2005

- Lower Colorado River Multi-Species Conservation Program Implementing Agreement, dated April 4, 2005

- USFWS, Incidental Take Permit TE-086834-0, issued to the Lower Colorado River Multi-Species Conservation Program Non-Federal Partners, dated April 4, 2005

Between 2005 and 2008, during the initial years of implementation of the program, LCR MSCP implementation activities focused on continuing ongoing research and monitoring programs for covered species and their habitats that had begun prior to the signing of the LCR MSCP ROD in April 2005. Procedural documents were written to provide guidance for LCR MSCP implementation, including the *Final Fish Augmentation Plan* (August 2006), the *Draft Final Guidelines for the Screening and Evaluation of Potential Conservation Areas* (August 2006) for evaluating potential habitat creation projects, as well as the *Final Science Strategy* (November 2007). Agreements were reached to use existing fish hatchery facilities to raise native fish for the fish augmentation program. Razorback suckers and bonytails were stocked in Lake Mohave and in the lower Colorado River.

As of December 31, 2008, the LCR MSCP had:

- Secured approximately 3,400 acres and 15,500 acre-feet to meet habitat creation goals listed in the HCP

- Established 542 acres of land cover types that will be managed for covered species habitat

- Reared and stocked into the lower Colorado River approximately 75,000 subadult razorback suckers and 32,000 subadult bonytails

- Conducted research and monitoring activities on covered species and their habitats

Chapter 3: List of References

Treaties, Interstate Compacts, and Federal Statutes

Colorado River Storage Project Act, Pub. L. No. 84-485, 70 Stat. 105 (1956). On DVD in *Updating the Hoover Dam Documents 1978* at I-99.

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> Act of December 19, 2002, Pub. L. No. 107-375, 116 Stat. 3113 (2002), and
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50 CFR §§ 402.13 and 402.14.

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32 Fed. Reg. 4001 (March 11, 1967), Native Fish and Wildlife, Endangered Species.

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56 Fed. Reg. 54957 (October 23, 1991), Endangered and Threatened Wildlife and Plants; the Razorback Sucker (Xyrauchen texanus) Determined to Be an Endangered Species. Final Rule.

59 Fed. Reg. 13374 (March 21, 1994), Endangered and Threatened Wildlife and Plants; Determination of Critical Habitat for the Colorado River Endangered Fishes: Razorback Sucker, Colorado Squawfish, Humpback Chub, and Bonytail Chub. Final Rule.

62 Fed. Reg. 9447 (March 3, 1997), Operating Criteria and 1997 Annual Plan of Operations for Glen Canyon Dam. Adoption of operating criteria and 1997 annual plan of operations. Appendix 37.

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71 Fed. Reg. 20416 (April 20, 2006), Navajo Dam, Colorado River Storage Project, New Mexico and Colorado. Notice of Availability of Navajo Reservoir Operations Final Environmental Impact Statement.

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Secretary of the Interior, October 9, 1996, *Record of Decision, Operation of Glen Canyon Dam Final Environmental Impact Statement*. Reprinted without attachments at Appendix 36. DVD Supplement 97, with attachments.

Secretary of the Interior, April 2, 2005, *Record of Decision, Lower Colorado River Multi-Species Conservation Plan, April 2005*. Appendix 45.

Bureau of Reclamation, February 16, 2006, *Record of Decision, Operation of Flaming Gorge Dam Final Environmental Impact Statement*. Appendix 38.

Bureau of Reclamation, July 31, 2006, *Record of Decision for the Navajo Reservoir Operations, Navajo Unit – San Juan River New Mexico, Colorado, Utah, Final Environmental Impact Statement*. Appendix 39.

Contracts and Agreements

Memorandum of Understanding Between United States Fish and Wildlife Service, United States Bureau of Reclamation, State of Colorado, State of Utah, and State of Wyoming, August 3, 1984, to develop a program of reasonable and prudent alternatives associated with water project development and depletions in the Upper Basin. DVD Supplement 123.

Cooperative Agreement for Recovery Implementation Program for Endangered Species in the Upper Colorado River Basin, among the Secretary of the Interior, Governors of the States of Colorado, Utah, and Wyoming, and the Administrator, Western Area Power Administration, January 21, 1988 (DVD Supplement 124), later extended by:

Extension of the Cooperative Agreement for the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin, December 6, 2001. DVD Supplement 126.

Cooperative Agreement for the San Juan River Basin Recovery Implementation Program, among the United States, the State of Colorado, the State of New Mexico, the Southern Ute Indian Tribe, the Ute Mountain Ute Tribe, and the Jicarilla Apache Indian Tribe, November 13, 1992 (DVD Supplement 125), later extended by:

Extension of the Cooperative Agreement for the San Juan River Basin Recovery Implementation Program, among the original parties and the Navajo Nation, November 6, 2006. DVD Supplement 127.

Memorandum of Understanding Amongst the United States of America, through its Department of the Interior, Arizona Department of Water Resources, Colorado River Board of California, Colorado River Commission of Nevada, Arizona Game and Fish Commission, California Department of Fish and Game, Nevada Division of Wildlife, February 24, 1995. DVD Supplement 146.

Memorandum of Agreement for Development of a Lower Colorado River Species Conservation Program, among agencies of the United States, the State of Arizona, the State of California, and the State of Nevada, August 2, 1995 (DVD Supplement 147), later clarified by:

Memorandum of Clarification, July 17, 1996. DVD Supplement 149.

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Amendment No. 2, August 27, 2003. DVD Supplement 155.

Lower Colorado River Multi-Species Conservation Program Joint Participation Agreement Among the U.S. Department of the Interior, Bureau of Land Management, Bureau of Reclamation, Fish and Wildlife Service, and National Park Service, State of Arizona, represented by the Arizona Department of Water Resources and the Arizona Game and Fish Commission, State of California, represented by the Colorado River Board of California and the California Department of Fish and Game, and the State of Nevada, represented by its Colorado River Commission and the Division of Wildlife of the State Department of Conservation and Natural Resources, May 1, 1997. DVD Supplement 152.

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Fish and Wildlife Service, *Biological Opinion*, *Section 7 Consultation on Proposed Experimental Releases from Glen Canyon Dam and Removal of Non-native Fish*, December 6, 2002. DVD Supplement 134.

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Bureau of Reclamation, *Finding of No Significant Impact, Final Environmental Assessment for Experimental Releases from Glen Canyon Dam, Arizona, 2008-2012*, *Colorado River Storage Project, Coconino County, Arizona,* February 29, 2008.

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CHAPTER 4: MEXICO WATER TREATY DELIVERIES

Introduction

The United States delivers Colorado River water to the United Mexican States (Mexico) in accordance with the Treaty between the United States of America and Mexico, Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, signed on February 3, 1944, 59 Stat. 1219 (Mexican Water Treaty), and subsequently adopted Minutes of the International Boundary and Water Commission (IBWC). The history of the adoption of the Mexican Water Treaty is discussed in *The Hoover Dam Documents 1948*, Chapter XIV. Salinity issues relating to the Mexican Water Treaty are discussed in *Updating the Hoover Dam Documents 1978*, Chapters I(O) and XIII.

During the period from 1979 through 2008, the Bureau of Reclamation (Reclamation) engaged in many activities relating to Mexican Water Treaty deliveries, the salinity requirements of Minute 242, and the requirements of Title I of the Colorado River Basin Salinity Control Act, Public Law (Pub. L.) No. 93-320, 88 Stat. 266 (1974) (Salinity Control Act), as amended and supplemented by the Act of September 4, 1980, Pub. L. No. 96-336, 94 Stat. 1063 (1980), and further amended and supplemented in 1984, 1995, 1996, 2000, and 2008. In addition, other cooperative efforts with Mexico were undertaken.

Salinity control programs implementing Title II of the Salinity Control Act are discussed in Chapter 9, as are Reclamation's actions implementing the 1984, 1995, 1996, 2000, and 2008 amendments to the Act.

International Boundary and Water Commission

The IBWC is an international body composed of the United States Section (which operates under the foreign policy guidance of the United States State Department) and the Mexican Section, each headed by an Engineer Commissioner appointed by each country's respective president. The IBWC is empowered to "settle all differences that may arise between the two Governments with respect to the interpretation or application of [this Mexican Water] Treaty, subject to the approval of the two Governments." See Mexican Water Treaty, Article 24(d). Article 25 of the Mexican Water Treaty provides that: "Decisions of the Commission shall be recorded in the form of Minutes done in duplicate in the English and Spanish languages, signed by each Commissioner and attested by the Secretaries. . . ."

The following Minutes, adopted from 1979 through 2008, are specific to waters of the Colorado River:

- 1979, Minute No. 260 - Extension of the Effect of Minute No. 259 Relating to the Emergency Deliveries of Colorado River Water for Use in Tijuana

- 1980, Minute No. 263 - Extension of the Effect of Minute No. 260 Relating to the Emergency Deliveries of Colorado River Water for Use in Tijuana

- 1981, Minute No. 266 - Extension of the Effect of Minute No. 263 Relating to the Emergency Deliveries of Colorado River Water for Use in Tijuana

- 1982, Minute No. 267 - Extension of the Effect of Minute No. 266 Relating to the Emergency Deliveries of Colorado River Water for Use in Tijuana

- 1991, Minute No. 284 - Rehabilitation of the Wellton-Mohawk Bypass Drain in Mexican Territory

- 1992, Minute No. 287 - Emergency Deliveries of Colorado River Waters for Use in Tijuana, Baja California

- 1992, Minute No. 289 - Observation of the Quality of the Waters Along the United States and Mexico Border

- 1994, Minute No. 291 - Improvements to the Conveying Capacity of the International Boundary Segment of the Colorado River

- 1999, Minute No. 301 - Joint Colorado River Water Conveyance Planning Level Study for the San Diego, California - Tijuana, Baja California Region

- 2000, Minute No. 306 - Conceptual Framework for United States - Mexico Studies for Future Recommendations Concerning the Riparian and Estuarine Ecology of the Limitrophe Section of the Colorado River and Its Associated Delta

- 2003, Minute No. 310 - Emergency Delivery of Colorado River Water for Use in Tijuana, Baja California

- 2008, Minute No. 314 - Extension of the Temporary Emergency Delivery of Colorado River Water for Use in Tijuana, Baja California

As of December 31, 2008, IBWC Minutes may be obtained from the IBWC-United States Section at www.ibwc.gov/Treaties_Minutes/minutes.html.

Colorado River Water Deliveries to Mexico

The allotment of Colorado River water to Mexico is governed by Article 10 of the Mexican Water Treaty which states:

> Of the waters of the Colorado River, from any and all sources, there are allotted to Mexico:
>
> (a) A guaranteed annual quantity of 1,500,000 acre-feet (1,850,234,000 cubic meters) to be delivered in accordance with the provisions of Article 15 of this Treaty.
>
> (b) Any other quantities arriving at the Mexican points of diversion, with the understanding that in any year in which, as determined by the United States Section, there exists a surplus of waters of the Colorado River in excess of the amount necessary to supply uses in the United States and the guaranteed quantity of 1,500,000 acre-feet (1,850,234,000 cubic meters) annually to Mexico, the United States undertakes to deliver to Mexico, in the manner set out in Article 15 of this Treaty, additional waters of the Colorado River system to provide a total quantity not to exceed 1,700,000 acre-feet (2,096,931,000 cubic meters) a year. Mexico shall acquire no right beyond that provided by this subparagraph by the use of waters of the Colorado River system, for any purpose whatsoever, in excess of 1,500,000 acre-feet (1,850,234,000 cubic meters) annually.
>
> In the event of extraordinary drought or serious accident to the irrigation system in the United States, thereby making it difficult for the United States to deliver the guaranteed quantity of 1,500,000 acre-feet (1,850,234,000 cubic meters) a year, the water allotted to Mexico under subparagraph (a) of this Article will be reduced in the same proportion as consumptive uses in the United States are reduced.

The delivery of the water allotted under Article 10 of the Mexican Water Treaty is governed by Article 11 and the Minutes of the IBWC. Under Article 11, and the Mexican Water Treaty's implementing Minutes, the United States delivers water to Mexico at the Northerly International Boundary (NIB), located upstream of Morelos Dam, and to the Southerly International Boundary (SIB), located near San Luis Río Colorado, Sonora. For a number of years, the United States has also delivered limited amounts of Colorado River water on an emergency basis to Tijuana, Baja California, under Minutes of the IBWC, as discussed later in this chapter, with these deliveries accounted for as part of the Mexican Water Treaty deliveries. See Figure 4-1 for a map of the Colorado River and related facilities

near the United States-Mexico border. See Chapter 1 for a discussion of the inclusion of the allotments to Mexico in the Annual Operating Plan.

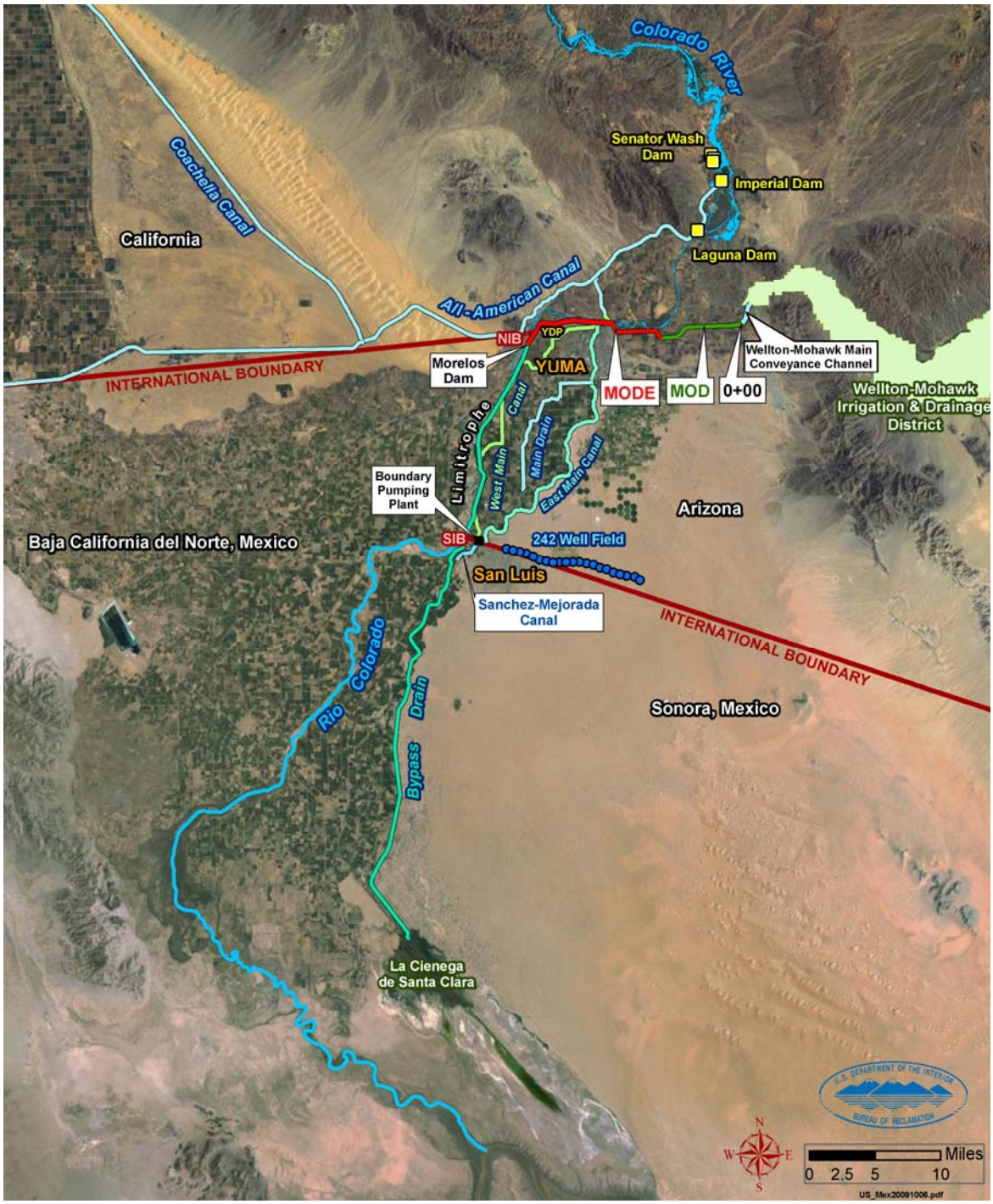

Figure 4-1. Map of certain United States and Mexico facilities.

Each year, the United States Section provides Reclamation with the monthly schedules of water deliveries requested by the Mexican Section in accordance with Article 15 of the Mexican Water Treaty. Flows arriving at the NIB in excess

of the monthly scheduled volume are termed "excess flows" and are reported under Article V of the Consolidated Decree in *Arizona* v. *California*, 547 U.S. 150 (2006). Excess flows are not accounted for as part of the Mexican Water Treaty deliveries. Excess flows to Mexico occur for a number of reasons, including flood releases from upstream dams or rain events. Excess flows may also result from water ordered but not diverted by Colorado River entitlement holders within the United States.

In nine of the 30 years during the period from 1979 through 2008, limited deliveries of Colorado River water under the Mexican Water Treaty were made at Tijuana on an emergency basis in accordance with Minutes adopted by the IBWC. The deliveries first occurred in the 1970s and early 1980s when Mexico encountered delays building an aqueduct to extend Colorado River water deliveries to Tijuana, and the city's water supply distribution systems were experiencing flood-related difficulties. These deliveries at Tijuana in the late 1970s and in the 1980s were based upon IBWC Minutes 260, 263, 266, and 267. In 1992, Minute 287 provided for deliveries during emergency maintenance outages of Mexico's Tijuana aqueduct. In 2003, when Tijuana was facing shortages due to low levels in water supply reserves and problems with the city distribution systems, Minute 310 provided for deliveries at Tijuana for a 5-year period through November 2008.

Minute 314, in 2008, extended Minute 310 for an additional year and permitted further 1-year extensions for a total period not to exceed 5 years. These deliveries were made through the delivery facilities of The Metropolitan Water District of Southern California (MWD), the San Diego County Water Authority, and the Otay Water District under Reclamation Contract No. 14-06-300-2346 among the United States and these agencies, dated June 14, 1972, as amended on: October 1, 1976; June 29, 1977; August 14, 1978; November 13, 1979; September 15, 1980; August 10, 1981; and September 14, 1982.

The following additional agreements were entered into among the United States, MWD, the San Diego County Water Authority, and the Otay Water District:

- Letter Agreement, dated August 1, 1990
- Letter Agreement, dated January 27, 1993
- IBWC, U.S. Section, Contract IBM No. 03-21, dated September 29, 2003
- IBWC, U.S. Section, Contract IBM No. 03-21, Amendment No. 1, dated November 26, 2008

Table 4-1 shows the total delivery at the NIB, at the SIB, and at Tijuana, for the period 1979 through 2008 in satisfaction of the Mexican Water Treaty. Table 4-1

also shows the excess flows during the same time period and indicates whether flood control releases from Hoover Dam were made in each of those years.

Table 4-1. Water Flowing to Mexico, 1979 through 2008[1]

Year	Northerly International Boundary	Southerly International Boundary	Emergency Deliveries to Tijuana, Mexico	Total Quantities Arriving at Mexican Points of Diversion	Total Delivery in Satisfaction of Treaty	Excess Flows	Flood Control Release From Hoover Dam
1979	3,080,766	86,406	251	3,167,423	1,700,000	1,467,423	No[2]
1980	7,090,911	100,787	3,500	7,195,198	1,700,000	5,495,198	Yes[2]
1981	1,928,100	114,372	0	2,042,472	1,700,000	342,472	Yes
1982	1,443,367	105,951	0	1,549,318	1,500,000	49,318	No
1983	14,093,346	96,310	0	14,189,656	1,700,000	12,489,656	Yes[2]
1984	15,382,727	110,290	0	15,493,017	1,700,000	13,793,017	Yes[2]
1985	11,701,944	109,354	0	11,811,298	1,700,000	10,111,298	Yes[2]
1986	10,673,635	120,442	0	10,794,077	1,700,000	9,094,077	Yes
1987	4,533,372	113,111	0	4,646,483	1,700,000	2,946,483	Yes
1988	2,222,526	108,185	0	2,330,711	1,700,000	630,711	Yes
1989	1,457,304	131,981	323	1,589,608	1,500,000	89,608	No
1990	1,409,367	132,621	0	1,541,988	1,500,000	41,988	No
1991	1,387,407	133,466	0	1,520,873	1,500,000	20,873	No
1992	1,455,306	125,183	243	1,580,732	1,500,000	80,732	No[2]
1993	5,079,330	113,442	0	5,192,772	1,500,000	3,692,772	No[2]
1994	1,400,267	125,253	0	1,525,520	1,500,000	25,520	No
1995	1,595,865	116,459	0	1,712,324	1,500,000	212,324	No[2]
1996	1,389,285	116,049	0	1,505,334	1,500,000	5,334	No
1997	2,760,048	112,409	0	2,872,457	1,700,000	1,172,457	Yes
1998	4,595,707	122,734	0	4,718,441	1,700,000	3,018,441	Yes
1999	2,767,188	126,917	0	2,894,105	1,700,000	1,194,105	Yes
2000	1,907,503	129,635	0	2,037,138	1,700,000	337,138	No
2001	1,583,227	117,350	0	1,700,577	1,500,000	200,577	No
2002	1,505,872	117,291	0	1,623,163	1,500,000	123,163	No
2003	1,428,122	133,042	691	1,561,855	1,500,000	61,855	No
2004	1,469,945	122,822	375	1,593,142	1,500,000	93,142	No
2005	1,495,783	120,383	176	1,616,342	1,500,000	116,342	No[2]
2006	1,414,798	121,395	39	1,536,232	1,500,000	36,232	No
2007	1,389,520	132,083	0	1,521,603	1,500,000	21,603	No
2008	1,455,516	130,381	5,482	1,591,379	1,500,000	91,379	No

[1] All values in acre-feet from Reclamation's Compilation of Records in Accordance with Article V of the Decree of the Supreme Court of the United States in *Arizona* v. *California*.

[2] Flooding occurred on the Gila River resulting in inflow to the Colorado River at the confluence.

Salinity

The salinity of Colorado River water delivered under the Mexican Water Treaty became a matter of discussion with Mexico in the 1960s. A history of the salinity issue is set forth in a Reclamation report to the Secretary of the Interior (Secretary) and the Congress, *Title I Program, Colorado River Basin Salinity Control Act*, dated June 1992.

The increased salinity was caused by: (1) the discharge to the Colorado River of saline irrigation drainage pumped from newly constructed wells in the Wellton-Mohawk Irrigation and Drainage District (WMIDD) in Arizona; (2) a reduction in excess Colorado River flows to Mexico, resulting from the construction and closure of Glen Canyon Dam; and (3) construction of Painted Rock Dam, which reduces the less saline Gila River floodflows to the Colorado River below Imperial Dam.

The salinity issue was addressed by the two nations through a series of IBWC Minutes, culminating in Minute 242 in 1973. Congress enacted the Salinity Control Act in 1974 as a means to approve, implement, and undertake salinity control measures consistent with Minute 242. Additional information regarding the salinity issue is set forth in *Updating the Hoover Dam Documents 1978*. Chapter XIII of that volume addresses the Mexican salinity issue and the IBWC Minutes pertaining to it; Chapter XIV of that volume provides the legislative history of the Salinity Control Act; and Appendix XIV-1403 of that volume sets forth the text of the original Salinity Control Act.

Minute 242 provides that the United States shall adopt measures to ensure that the water delivered to Mexico upstream of Morelos Dam (at the NIB) has:

> an annual average salinity of no more than 115 p.p.m. ± 30 p.p.m. U.S. count (121 p.p.m. ± 30 p.p.m. Mexican count) over the annual average salinity of Colorado River waters which arrive at Imperial Dam. . .

Minute 242 further states:

> The United States will continue to deliver to Mexico on the land boundary at San Luis and in the limitrophe section of the Colorado River downstream from Morelos Dam approximately 140,000 acre-feet (172,689,000 cubic meters) annually with a salinity substantially the same as that of the waters customarily delivered there.

During the period 1979 through 2008, primarily as a result of Reclamation actions under the Salinity Control Act described later in this chapter, the salinity differential has remained below the 145 parts per million (ppm) U.S. count threshold.[1] See Table 4-2.

In 1995, Mexico raised two issues with respect to delivery of water at the SIB in the Sanchez-Mejorada Canal at San Luis Río Colorado, Sonora: salinity peaks of 1,500 ppm to 1,700 ppm, and variable flow from the Boundary Pumping Plant. In the interest of comity, the United States participated in a binational task force to develop a solution that would be acceptable to both the United States and Mexico.

[1] Discrepancies were identified between the U.S. count and Mexican count thresholds. As of December 31, 2008, the IBWC was working to resolve these discrepancies.

Table 4-2. Flow-Weighted Average Annual Salinities[1,2] of Colorado River Water Delivered at Imperial Dam and at NIB, the Salinity Differential Between Imperial Dam and NIB, and the Annual Salinity at SIB in Parts Per Million

Year	Imperial Dam	NIB	Imperial Dam – NIB Salinity Differential	SIB
1979	809	739	-70	1,538
1980	755	740	-15	1,582
1981	806	924	118	1,572
1982	825	933	108	1,470
1983	733	742	9	1,434
1984	670	676	6	1,487
1985	607	639	32	1,513
1986	579	600	21	1,496
1987	610	656	46	1,431
1988	655	733	78	1,488
1989	682	800	118	1,300
1990	721	846	125	1,333
1991	751	858	107	1,223
1992	781	898	117	1,312
1993	767	613	-154	1,306
1994	797	875	78	1,299
1995	787	869	82	1,313
1996	782	859	77	1,358
1997	695	764	69	1,341
1998	655	698	43	1,214
1999	681	758	77	1,242
2000	659	778	119	1,173
2001	681	820	139	1,192
2002	691	832	141	1,166
2003	706	842	136	1,094
2004	735	858	123	1,155
2005	708	803	95	1,103
2006	713	844	131	995
2007	675	805	130	984
2008	728	868	140	1,019

[1] Source: "A Report On Colorado River Salinity Operations, Under International Boundary and Water Commission Minute No. 242 January 1 to December 31, 2007" (issued July 2009 by the IBWC United States Section).

[2] The flow-weighted average annual salinity concentration is calculated by dividing the total salt load (mass) passing the measuring station over the year by the total volume of water passing the same measuring station over the year. Salinity, in total dissolved solids, is the United States count expressed in parts per million based on residue on evaporation and corrected sum of constituents methods.

* Provisional data from Reclamation.

Following consultation with the Colorado River Basin States, a plan was developed for the diversion of up to 8,000 acre-feet annually of the high salinity

water from the Boundary Pumping Plant into the Bypass Drain, which extends from Morelos Dam to the Ciénega de Santa Clara (Ciénega) in Mexico. The Bypass Drain is depicted on Figure 4-1. The diverted water is replaced with deliveries to Mexico of lower salinity water from the 242 Well Field as discussed later in this chapter. The plan is designed to maintain a daily salinity level no greater than 1,200 ppm at the Sanchez-Mejorada Canal during Mexico's four critical agriculture months, October through January, or as identified by Mexico each year. The plan is memorialized in a Memorandum of Understanding between the International Boundary and Water Commission, United States and Mexico, United States Section and the Bureau of Reclamation, Lower Colorado Region, Yuma Area Office, MOU IBM 01-20, dated November 20, 2001.

The United States constructed a diversion channel from the afterbay of the Boundary Pumping Plant to the Bypass Drain. The United States also installed a variable speed motor on one of the pumps at the Boundary Pumping Plant to reduce variable flow to meet the target daily salinity level. Installation of these facilities was completed in 2004. Between 2004 and 2008, a total of 5,867 acre-feet of flows were diverted from the Boundary Pumping Plant to the Bypass Drain.

Salinity Control Act Actions

Section 101(a) of the Salinity Control Act authorized a program of works "for the enhancement and protection of the quality of water available in the Colorado River for use in the United States and the Republic of Mexico" and to enable the United States to comply with the obligations of IBWC Minute 242 in accordance with the provisions of the Salinity Control Act. The Salinity Control Act authorized the Secretary to undertake specific measures including:

- Extension of the Bypass Drain
- Reduction of WMIDD irrigable acreage
- Development of well fields to furnish water for use in the United States and for delivery to Mexico
- Lining or construction of a new Coachella Canal in California
- Construction and operation of a desalting plant and appurtenant works

Extension of the Bypass Drain

In 1978, an extension of the Bypass Drain was completed to La Ciénega de Santa Clara (formerly the Santa Clara Slough), as depicted on Figure 4-1. Thereafter, WMIDD pumped drainage return flows, which formerly discharged to the Colorado River, into the Bypass Drain. Flows in the Bypass Drain are referred to as bypass flows and do not count toward the Mexican Water Treaty

delivery allotment. Table 4-3 provides the annual volume and flow-weighted average annual salinity of the bypass flows for the period 1979 through 2008.

Table 4-3. Annual Flow and Estimated Flow-Weighted Average Salinity of the Bypass Flow at SIB

Year	Annual Flow Volume (acre-feet)[1]		Flow-Weighted Average Annual Salinity (ppm)[2]
1979	177,928		3,421
1980	154,630		3,053
1981	148,426		3,069
1982	149,698		3,053
1983	179,157	[3]	1,692
1984	125,615	[4]	2,403
1985	129,704		2,754
1986	110,052		2,975
1987	97,741		2,999
1988	128,176		3,079
1989	138,624		3,100
1990	133,690		3,035
1991	140,726		2,962
1992	101,109		2,888
1993	61,439	[5]	1,248
1994	124,435		2,401
1995	125,475		2,636
1996	112,390		2,754
1997	89,155		2,477
1998	113,769		2,243
1999	78,675		2,668
2000	107,443		2,524
2001	103,746		2,721
2002	121,749		2,450
2003	114,734		2,469
2004	98,812		2,448
2005	107,433		2,324
2006	107,514		2,445
2007	106,944		2,410
2008*	115,499		2,451

[1] Source: "A Report On Colorado River Salinity Operations, Under International Boundary and Water Commission Minute No. 242, January 1 to December 31, 2007" (issued July 2009 by the IBWC United States Section).

[2] The flow-weighted average annual salinity concentration is calculated by dividing the total salt load (mass) passing the measuring station over the year by the total volume of water passing the same measuring station over the year. Salinity, in total dissolved solids, is the United States count expressed in parts per million based on residue on evaporation and corrected sum of constituents methods. Source: Salinity and Flow Operational Reports from Reclamation.

[3] Includes undetermined amount of flood water for the Bypass Drain levee breaks in the United States.

[4] Includes water from Gila River.

[5] Damage on the Bypass Drain occurred due to Gila River flooding. Drainage water entered the Gila River on February 21, 1993, through January 18, 1994, and was diluted.

* Provisional data from Reclamation.

Acreage Reduction in Wellton-Mohawk Irrigation and Drainage District

The Salinity Control Act authorized funding for several projects to be carried out in WMIDD to reduce irrigable acreage and reduce the pumped drainage return flows. These projects included an acreage reduction program, a water conservation education program, and an on-farm irrigation management and system improvement program.

By the end of 1979, the acreage reduction program was essentially complete, with the total irrigable acreage in WMIDD reduced from the 75,000 acres authorized in the Act of July 30, 1947, Pub. L. No. 80-272, 61 Stat. 628 (1947) to 65,000 acres, in accordance with Section 101(f) of the Salinity Control Act. In 1990, WMIDD agreed to further reduce the amount of irrigable acreage within its boundaries by approximately 2,000 acres and to allow the water saved by the acreage reduction, 22,000 acre-feet, to be used for the Salt River Pima-Maricopa Indian Community Water Rights Settlement. See Chapter 10. As a result, WMIDD's Colorado River water entitlement was reduced to 278,000 acre-feet per year of consumptive use.

Reclamation measures the pumped drainage return flows from WMIDD at Station 0+00 of the Main Outlet Drain (MOD). The MOD is depicted on Figure 4-1.

Protective and Regulatory Pumping Unit (PRPU or 242 Well Field)

The Salinity Control Act authorized the Secretary to construct, operate, and maintain the Protective and Regulatory Pumping Unit (PRPU) (also known as the 242 Well Field) within the State of Arizona along the Mexican border. The Salinity Control Act provides that water pumped from the 242 Well Field is for use in the United States and for delivery to Mexico in satisfaction of the Mexican Water Treaty. By 1983, Reclamation had constructed and was operating 21 wells within the 242 Well Field. The original design called for a total of 35 wells with a pumping capacity of 160,000 acre-feet per year, the limit established in Minute 242 for pumping in the 5-mile zone above the Arizona-Mexico border. As of December 31, 2008, the additional capacity has not been developed due to the amount of drainage from the Yuma Valley that is delivered to Mexico at the Sanchez-Mejorada Canal as part of the 140,000 acre-feet delivery at SIB in accordance with Minute 242.

Coachella Canal Lining

The Salinity Control Act authorized the Secretary to line a portion of the Coachella Canal or to construct a new concrete-lined canal to reduce seepage. The Salinity Control Act provided that for an interim period the conserved water would be available to assist the Secretary in meeting the salinity control objectives of Minute 242. The amount of water to be conserved by the project was estimated to be 132,000 acre-feet per year in a Reclamation report dated June 1978 entitled *Colorado River Basin Salinity Control Projects Title I Division Coachella Canal Unit Definite Plan Report*. A 49-mile portion of the Coachella Canal was replaced with a newly constructed lined section parallel to

the old canal. The lining of that section of the Coachella Canal was completed in 1980. Further lining of the Coachella Canal is discussed in Chapter 5.

Construction and Operation of the Yuma Desalting Plant

The Salinity Control Act authorized the Secretary to construct and operate the Yuma Desalting Plant (YDP) to desalt the drainage flows from the Wellton-Mohawk Division of the Gila Project. Based on the acreage reduction programs in WMIDD discussed earlier in this chapter, the Secretary, acting through Reclamation, determined that the YDP could be reduced in capacity by 25 percent from the original design capacity of 96 million gallons per day to 72 million gallons per day, a reduction authorized by Section 104 of the Salinity Control Act. See *Title I Program Colorado River Basin Salinity Control Act, Report to the Secretary of the Interior and the Congress,* June 1992. Congress appropriated funds for the design and construction of major YDP features over a period of 17 years, from 1975 to 1992, and the YDP was constructed in phases. Reclamation began designing the YDP in 1975 and began construction in 1980. Construction was completed in 1992.

Reclamation began testing sections of the YDP in March 1992. The YDP operated at one-third capacity from May 1992 through January 1993, discharging the product water (desalinated water) to the Colorado River for delivery to Mexico under the Mexican Water Treaty.

In 1993, floodflows from the Gila River damaged the concrete lining of sections of the MOD which carry WMIDD drainage water to the YDP and infiltrated the drain, requiring the YDP to be shut down. Throughout the 1990s, Colorado River system supplies were sufficient to meet Mexican Water Treaty deliveries and salinity requirements of Minute 242 without operation of the YDP.

With the onset of drought conditions in the Colorado River Basin in the early 2000s, attention again focused on potential operation of the YDP. At that time, Reclamation assessed the YDP's readiness to operate. The October 2002 *Yuma Desalting Plant, Yuma Readiness Assessment* and the April 2004 *Yuma Desalting Plant Readiness Assessment Update* described the preparations, including correction of design deficiencies, and the estimated funding required for operation of the YDP at one-third, two-thirds, and full capacity.

As a result of discussions that began in 2003, a workgroup of Lower Basin stakeholders led by the Central Arizona Water Conservation District (CAWCD) produced a report dated April 22, 2005, entitled *Balancing Water Needs on the Lower Colorado River: Recommendations of the Yuma Desalting Plant/Cienega de Santa Clara Workgroup*. The goal of the workgroup was "to develop solutions that would both offset the impact of the continued bypass of return flows from the Wellton-Mohawk Irrigation and Drainage District and preserve the Cienega de Santa Clara." (*Id.*, Executive Summary, emphasis in original.)

In August 2005, Reclamation submitted the *Report to Congress, The Yuma Desalting Plant and Other Actions to Address Alternatives, Colorado River Basin Salinity Control Act, Title I*. This report identified plans to begin a public process to identify and evaluate options for replacement or recovery of the bypass flows to Mexico, to maintain the plant in a ready-reserve status and continue correcting design deficiencies, and to initiate a demonstration system conservation program to determine the viability of paying Colorado River water entitlement holders to temporarily forbear use of Colorado River water.

In late 2005, Reclamation initiated a public consultation process to identify and analyze alternatives to replace or recover the bypass flows. In May 2006, Reclamation adopted a Policy Establishing a Demonstration Program for System Conservation of Colorado River Water, later extended by an amendment dated September 2008. In accordance with this policy, Reclamation implemented a demonstration program to conserve water to replace the bypass flows to Mexico. Under this program, Reclamation provided funds to MWD and Yuma Mesa Irrigation and Drainage District to conserve a portion of their approved annual consumptive use of Colorado River water to make the conserved water available to Reclamation for bypass flow replacement. Under this program, from 2006 through 2008, a total of 13,500 acre-feet was conserved and retained in system storage.

From March 1 through May 31, 2007, Reclamation completed a demonstration run of the YDP at approximately 10-percent capacity to evaluate whether the plant could operate after a prolonged period of dormancy, validate cost and performance estimates, demonstrate the use of current technology, improve plant readiness, and measure potential changes in water chemistry as a result of plant operations. As a result of this demonstration run, 4,349 acre-feet of product water and untreated bypass flow water were released to the Colorado River for subsequent delivery to Mexico, partially replacing the bypass flow. Additionally, in 2007, Reclamation obtained a 10-year permit from the Arizona Department of Water Resources to increase ground water pumping on specified wells in the Yuma area in return for up to 25,000 acre-feet annually as a partial replacement of the bypass flows.

In 2008, MWD, the Southern Nevada Water Authority, and CAWCD approached Reclamation with a request to operate the YDP as a means to gather data to support long-term decisionmaking to evaluate the YDP as a possible ongoing and new water supply. As of December 31, 2008, planning and environmental compliance efforts to evaluate this proposed action were underway.

Yuma Desalting Plant Research

The Act of September 4, 1980, Pub. L. No. 96-336, 94 Stat. 1063 (1980) amended the Salinity Control Act and authorized a desalting research program which began in 1989. Throughout the 1990s and early 2000s, Reclamation conducted research projects and engineering studies to resolve YDP design deficiencies.

In 1997, Reclamation expanded the research functions at the YDP testing facility and renamed it the Water Quality Improvement Center (WQIC). The WQIC was designated a National Center for Water Treatment Technology under a cooperative program among the United States Army, the National Water Research Institute, and Reclamation. The program allows research to be conducted at the WQIC on a cost-reimbursable basis.

Research programs identified potential improvements to both the pretreatment and reverse osmosis processes. Information obtained through WQIC research has been applied in retrofits and subsequent testing of the YDP. Research projects conducted at the YDP have also generated applications that have been useful industry-wide.

Ongoing Cooperation with Mexico

Concerns regarding the riparian and estuarine ecology of the Colorado River in the limitrophe section (the approximately 24-mile portion of the Colorado River where the river forms the border between the United States and Mexico) and its associated delta were expressed prior to and during the development of the Colorado River Interim Surplus Guidelines in the late 1990s. See Chapter 2. In response to these concerns, discussions between the United States and Mexico resulted in a May 18, 2000, Joint Declaration Between the Department of the Interior (DOI) of the United States of America and the Secretariat of Environment, Natural Resources and Fisheries (SEMARNAP) of the United Mexican States to Enhance Cooperation in the Colorado River Delta. In addition, in December 2000, the United States Section and the Mexican Sections of the IBWC signed Minute 306 to the Mexican Water Treaty "in recognition of the respective governments' interest in the preservation of the riparian and estuarine ecology of the Colorado River in its limitrophe section and its associated delta." Pursuant to Minute 306, a binational workgroup was formed to define a process of cooperation between the United States and Mexico through the development of joint studies that included possible approaches to ensure use of water for ecological purposes in this reach of the river and formulation of recommendations for cooperative projects, based on the principle of an equitable distribution of resources identified in Minute 306.

Binational workgroup meetings were held, and a number of projects were identified that were supported by the workgroup. A joint United States - Mexico binational conference pursuant to Minute 306 was held in Mexicali, Baja California on September 11-12, 2001, and the proceedings of the conference were issued in a document in English and Spanish entitled *United States – Mexico Colorado River Delta Symposium*.

Following a period of tension and litigation involving the lining of the All-American Canal in southern California, on August 13, 2007, Secretary of the

Interior Dirk Kempthorne and Mexican Ambassador Arturo Sarukhan issued a joint public statement, "U.S. and Mexico Agree to Discuss Joint Cooperative Actions Related to the Colorado River," initiating a cooperative binational process. The joint statement recognized that authorities in the United States and Mexico had agreed that "cooperative, innovative and holistic" measures should be considered to ensure that the Colorado River is able to continue to meet environmental, agricultural, and urban demands of both nations.

The joint statement acknowledged the growing national and international focus on the Colorado River as a result of the ongoing historic drought in the basin and recognized the IBWC as the appropriate organization to expedite discussions to further Colorado River cooperation. Among the issues identified in the joint public statement as expected to be addressed in the binational process were:

- Continued needs of both nations for water for urban, agricultural, and environmental purposes; the study of the hydrological system; and potential impacts of climate change, including the effects of the ongoing historic Colorado River drought

- Environmental priorities, including Colorado River Delta habitat protection and enhancement

- Opportunities for water conservation, storage, and supply augmentation, such as seawater desalination and reuse; strategies aimed to ease variations in the Colorado River system

- Potential opportunities for more efficient Colorado River water deliveries to Mexico

The binational discussions between the United States and Mexico continued through 2008 and were ongoing as of December 31 of that year.

Chapter 4: List of References

Treaties, Interstate Compacts, and Federal Statutes

Treaty between the United States of America and Mexico, Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, 59 Stat. 1219 (1944). Appendix 6.

Act of July 30, 1947, Pub. L. No. 80-272, 61 Stat. 628 (1947). On DVD in *Updating the Hoover Dam Documents 1978* at II-41.

Colorado River Basin Salinity Control Act, Pub. L. No. 93-320, 88 Stat. 266 (1974) (on DVD in *Updating the Hoover Dam Documents 1978* at XIV-14), later amended and supplemented by:

Act of September 4, 1980, Pub. L. No. 96-336, 94 Stat.1063 (1980).

Act of October 30, 1984, Pub. L. No. 98-569, 98 Stat. 2933 (1984).

Act of July 28, 1995, Pub. L. No. 104-20, 109 Stat. 255 (1995).

Federal Agriculture Improvement and Reform Act of 1996, Pub. L. No. 104-127, Title III-Subtitle D, 110 Stat. 1006 (1996).

Act of November 7, 2000, Pub. L. No. 106-459, 114 Stat. 1987 (2000).

Food, Conservation, and Energy Act of 2008, Pub. L. No. 110-246, Title II-Subtitle I, Section 2806, 122 Stat. 1651.

Federal Court Decisions

Arizona v. *California*, 547 U.S. 150 (2006) (Consolidated Decree). Appendix 5 and DVD Supplement 12.

Contracts and Agreements

Contracts for Temporary Emergency Deliveries to Tijuana, Baja California, Mexico.

Memorandum of Understanding, between International Boundary and Water Commission, United States and Mexico, United States Section, and Bureau of Reclamation, Lower Colorado Region, Yuma Area Office, MOU IBM 01-20, November 20, 2001. Appendix 10.

Reports

Bureau of Reclamation, *Colorado River Basin Salinity Control Projects Title I Division, Coachella Canal Unit Definite Plan Report*, June 1978. DVD Supplement 58.

Bureau of Reclamation, *Title I Program Colorado River Basin Salinity Control Act, Report to the Secretary and the Congress*, June 1992. DVD Supplement 13.

Colorado River Delta Binational Symposium, *United States – Mexico Colorado River Delta Symposium*, Mexicali, Baja California, September 2001. DVD Supplement 14.

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Yuma Desalting Plant/Cienega de Santa Clara Workgroup, *Balancing Water Needs on the Lower Colorado River: Recommendations of the Yuma Desalting Plant/Cienega de Santa Clara Workgroup*, April 22, 2005. DVD Supplement 17.

Bureau of Reclamation, *Report to the Congress, The Yuma Desalting Plant and Other Actions to Address Alternatives, Colorado River Basin Salinity Control Act, Title I*, August 2005. DVD Supplement 18.

International Boundary and Water Commission United States Section, *A Report On Colorado River Salinity Operations, Under International Boundary and Water Commission Minute No. 242, January 1 to December 31, 2007*, July 2009. DVD Supplement 19.

Other

The Hoover Dam Documents 1948, Chapter XIV. On DVD.

Updating the Hoover Dam Documents 1978, Chapters I(O), XIII, and XIV and Appendix XIV-1403. On DVD.

Joint Declaration Between the Department of the Interior (DOI) of the United States of America and the Secretariat of Environment, Natural Resources and Fisheries (SEMARNAP) of the United Mexican States to Enhance Cooperation in the Colorado River Delta, May 18, 2000. Appendix 8.

Policy Establishing a Demonstration Program for System Conservation of Colorado River Water, May 2006 (Appendix 30), later extended by:

> Extension of Policy Establishing a Demonstration Program for System Conservation of Colorado River Water, September 2008.

Joint U.S.-Mexico Statement, Secretary Dirk Kempthorne and Ambassador Arturo Sarukhan of Mexico: U.S. and Mexico Agree to Discuss Joint Cooperative Actions Related to the Colorado River, August 13, 2007. Appendix 11.

International Boundary and Water Commission Minutes:

No. 242. Appendix 7.

No. 260.

No. 263.

No. 266.

No. 267.

No. 284.

No. 287.

No. 289.

No. 291.

No. 301.

No. 306. Appendix 9.

No. 310.

No. 314.

CHAPTER 5: LOWER BASIN WATER DEVELOPMENT

Introduction

This chapter discusses the construction, operation, and administration of water projects in the Lower Basin of the Colorado River during the period from 1979 through 2008. This chapter also identifies projects for which operation, maintenance, and replacement (OM&R) responsibilities were transferred from the Bureau of Reclamation (Reclamation) to the project beneficiary and identifies projects for which title has been transferred from the United States to the project beneficiary. See Figure 5-1 for the location of projects discussed in this chapter.

Central Arizona Project

The Colorado River Basin Project Act, Public Law (Pub. L.) No. 90-537, 82 Stat. 885 (1968) (CRBPA or Basin Project Act) was approved on September 30, 1968, and authorized the Central Arizona Project (CAP). The legislative history of the Basin Project Act is discussed in *Updating the Hoover Dam Documents 1978*, Chapter XII. CAP transmission facilities and power contracts are discussed in Chapter 13 of this volume.

The CAP works consist of these primary elements:

- The main system composed of: a system of conduits, canals, and pumping plants for diverting and transporting water from Lake Havasu on the Colorado River to metropolitan Phoenix and Tucson and to various agricultural entities in central Arizona; and the Federal interest in the Navajo Generating Station and transmission facilities which provide for the delivery of power to points within the CAP service area for project needs

- Storage facilities, including New Waddell Dam and Modified Roosevelt Dam

- Distribution works for non-Indian agricultural lands, to distribute CAP water to lands with a history of irrigation within the CAP service area after the water is transported or delivered through the main system

- Distribution works for Indian lands to distribute CAP water to Indian reservations after the water is transported or delivered through the main system

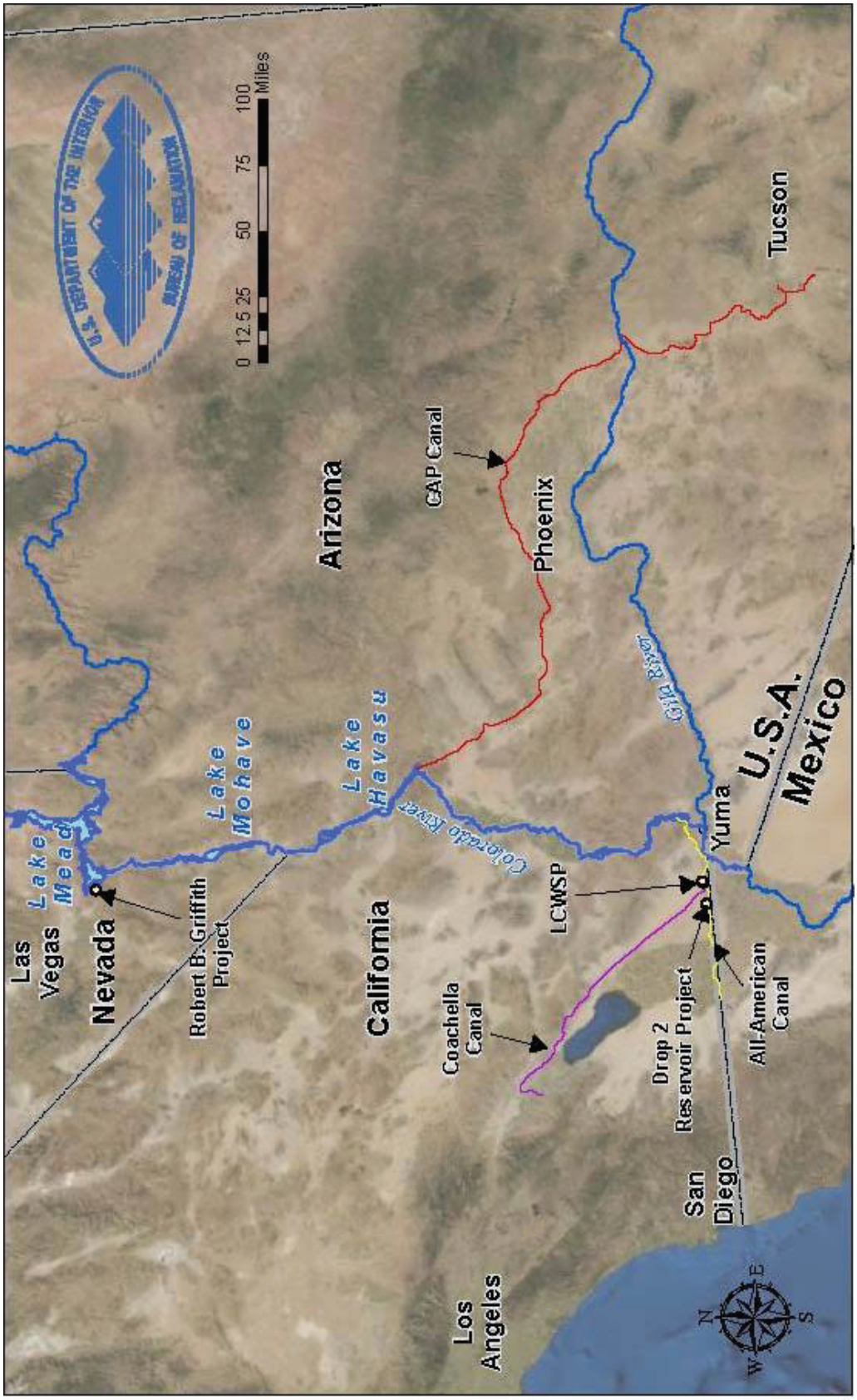

Figure 5-1. Map of Lower Colorado Region project locations.

Central Arizona Project Construction Stages

Repayment of the project was based on construction stages, with each stage having a separate 50-year repayment schedule. There are six construction stages, including those that have been deferred or have yet to be completed as of December 31, 2008:

Stage I:	The water supply system, including Navajo Generating Station
Stage II:	The regulatory storage division, including New Waddell and Modified Roosevelt Dams[1]
Stage III:	Replacement features or programs for Cliff Dam[2]
Stage IV:	Tucson Terminal Storage
Stage V:	Hooker Dam or suitable alternative[3]
Stage VI:	Buttes Dam[4]

Water Developed by the Central Arizona Project

Three distinct water sources are developed by Stages I and II of the CAP. The primary source is from the State of Arizona's apportionment of Colorado River

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[1] One of the principal works authorized for the CAP is described in Section 301(a) of the Basin Project Act as "Orme Dam and Reservoir and power-pumping plant or suitable alternative." A decision was made not to construct Orme Dam and instead to select alternative regulatory storage. On April 3, 1984, the Secretary of the Interior selected Plan 6 for the Regulatory Storage Division of the CAP as a suitable replacement for Orme Dam. Plan 6 included construction of New Waddell Dam and modifications to Roosevelt Dam.

[2] Cliff Dam was not constructed primarily due to environmental concerns. On July 1, 1987, the United States acting through the Secretary of the Interior, the State of Arizona, the Central Arizona Water Conservation District, and local cities and water entities entered into a supplemental agreement deleting Cliff Dam from the Plan Six funding agreement dated April 15, 1986. The Act of December 22, 1987, Pub. L. No. 100-202, Title II, 101 Stat. 1329-113 (1987) prohibited Federal funding for study or construction of Cliff Dam. In 1992, the Cities of Chandler, Mesa, Phoenix, and Scottsdale acquired the Hohokam Irrigation and Drainage District water service subcontract entitlement, including the CAP distribution system repayment obligation for that district, with the acquired water being a replacement for the water supply that would have been developed by Cliff Dam.

[3] Hooker Dam, which was to be located on the upper Gila River system to deliver water to counties in western New Mexico, is in a deferred status as of December 31, 2008. This feature of the CAP was addressed in the Arizona Water Settlements Act, Pub. L. No. 108-451, 118 Stat. 3478 (2004), and was described in that statute as the "New Mexico Unit" (discussed later in this chapter).

[4] Buttes Dam, which was to be located on the Gila River downstream of its confluence with the San Pedro River, was not found to be economically justified and is in a deferred status as of December 31, 2008.

water, a portion of which is imported into central Arizona through the CAP main system and regulated as needed in the reservoir behind New Waddell Dam.

The second source of water developed by the CAP results from the construction of New Waddell Dam to capture and conserve Agua Fria River floodflows which historically spilled from the smaller, original Waddell Dam. Water conserved by New Waddell Dam is commingled with Colorado River water and delivered to CAP water users served by the main system in accordance with CAP water service contracts. See "Central Arizona Project Water Allocations" later in this chapter.

The third source of water developed by the CAP results from the modifications to Roosevelt Dam which created storage space for new water conservation. The modifications to Roosevelt Dam allow the capture and control of Salt River floodflows that historically spilled from the Salt River Project (SRP) dams. The increased yield from modified Roosevelt Dam is not delivered under CAP water service contracts. Instead, this water is made available through contracts to certain Phoenix-area cities (Chandler, Glendale, Mesa, Phoenix, Scottsdale, and Tempe) in exchange for their upfront funding contribution of a portion of the construction costs of modifying Roosevelt Dam. Each of these cities is a CAP municipal and industrial (M&I) water service subcontractor, and each receives water deliveries from SRP as well. The additional water supply resulting from the modifications to Roosevelt Dam is delivered to the cities through SRP delivery facilities.

Completion of Construction and Initiation of Repayment

Construction of Stage I of the CAP began with the Navajo Generating Station in 1970. The Navajo Generating Station began operating on May 31, 1974. Construction of the CAP aqueduct and pumping plant facilities continued through the early 1990s. During construction status (that is, prior to issuance of a notice of completion) the water supply system was only capable of making partial water deliveries. Water deliveries began in 1985 to the Phoenix metropolitan area; in 1986 to Pinal County; in 1987 to the Ak-Chin Indian Community; in 1989 to northern Pima County; and in 1992 to the Tucson area. Stage I, the water supply system including the Navajo Generating Station, was declared substantially complete as of October 1, 1993, by a Notice of Completion letter from the United States to the Central Arizona Water Conservation District (CAWCD) dated September 30, 1993. Construction of Stage II, the regulatory storage division, began in 1985. Stage II was declared substantially complete as of September 30, 1996, by a Notice of Completion letter from the United States to CAWCD dated September 30, 1996.

Repayment of the Central Arizona Project

The repayment responsibility differs among the main system, the non-Indian distribution works, and the Indian distribution works. The main system, including New Waddell Dam, is repaid primarily by CAWCD. CAWCD's annual

repayment obligation for Stages I and II is addressed in the Contract Between the United States and the Central Arizona Water Conservation District for Delivery of Water and Payment of Costs of the Central Arizona Project, Contract No. 14-06-W-245, dated December 15, 1972 (Master Repayment Contract). This Master Repayment Contract was superseded and replaced by Amendment No. 1 on December 1, 1988, to increase the ceiling for CAWCD's repayment obligation.[5] The original Master Repayment Contract is discussed in *Updating the Hoover Dam Documents 1978*, Chapter II.

The three primary sources of revenue available to CAWCD to meet its annual repayment obligation to the United States are: (1) revenues from the sale of Navajo surplus by the United States under the Hoover Power Plant Act of 1984, Pub. L. No. 98-381, 98 Stat. 1333 (1984); (2) revenues from ad valorem taxes levied by CAWCD; and (3) revenues from capital charges assessed by CAWCD on irrigation and M&I subcontractors. Repayment revenues are deposited to the Lower Colorado River Basin Development Fund (Development Fund) established under Section 403 of the Basin Project Act.

Due to the lengthy CAP construction period, and the realization of significant benefits from CAP features placed into service before completion of the entire project, the Master Repayment Contract as amended in 1988 provided for staged repayment by CAWCD. Upon substantial completion of each construction stage, the United States placed the stage into repayment status and notified CAWCD of its estimated repayment obligation for the stage. Each stage has its own 50-year repayment period. The repayment obligation is divided into interest-bearing and interest-free components in accordance with the authorizing legislation and repayment contract provisions.

Repayment of construction costs for CAP distribution works for non-Indian agricultural lands is governed by contracts entered into under Section 9(d) of the Reclamation Project Act of 1939, Pub. L. No. 76-260, 53 Stat. 1187 (1939) and Section 309(b) of the Basin Project Act. Reclamation entered into these repayment contracts, often referred to as "9(d) contracts" with the non-Indian irrigation districts which had entered into subcontracts with the United States and CAWCD for non-Indian agricultural priority CAP water. In accordance with Section 309(b) of the Basin Project Act, the irrigation districts contributed upfront funding of 20 percent of the construction costs, with the remainder funded by Federal appropriations and subject to repayment.

Repayment of construction costs for Indian distribution works for delivery of CAP irrigation water is governed by section 402 of the Basin Project Act and by

[5] On August 14, 2007, the United States and CAWCD executed Supplement No. 1 to Contract No. 14-06-W-245, Amendment No. 1, to allow CAWCD to fulfill its Central Arizona Groundwater Replenishment function under Arizona State law. Amendment No. 2 was executed November 30, 2007, to conform the Master Repayment Contract to the Arizona Water Settlements Act, Pub. L. No. 108-451, 118 Stat. 3478 (2004), which is discussed later in this chapter.

certain Native American water rights settlement statutes. Section 402 provides that costs allocated to irrigation of Indian lands that are within the repayment ability of such lands are subject to the Act of July 1, 1932, Pub. L. No. 72-240, 47 Stat. 564 (1932) (Leavitt Act), which defers repayment as long as the land remains in Indian ownership. Section 402 also provides that costs allocated to irrigation of Indian lands that are beyond the repayment ability of such lands are nonreimbursable.

Financial Difficulties and Repayment Dispute

In the 1980s, the Arizona agricultural economy experienced unprecedented growth, and farm commodity prices were relatively high. Execution of the non-Indian CAP distribution systems 9(d) repayment contracts and construction of the CAP non-Indian distribution systems coincided with a peak in the Arizona agricultural economy. Approximately $240 million of Federal funds were expended to construct CAP non-Indian distribution systems. In the 1990s, when repayment under the 9(d) contracts commenced, as discussed later in this chapter, the Arizona agricultural economy was in a downturn and several of the non-Indian irrigation districts experienced difficulties making their required payments.

The Basin Project Act authorizes the Secretary of the Interior (Secretary) to allocate CAP costs to the various project purposes. The cost allocated to each purpose is either reimbursable or nonreimbursable. Many of the factors used in the cost allocation, such as projected long-term usage of non-Indian irrigation water, M&I water, and Indian water, can have a significant effect upon the allocation of costs, and were under constant change. Beginning in the early 1990s, discussions began between the United States and CAWCD relating to repayment, cost allocation, and the financial difficulties that the non-Indian irrigation districts were experiencing. The United States and CAWCD attempted to develop an agreement in principle relating to several repayment and operational issues including the extent of the CAWCD repayment obligation under the 1988 Master Repayment Contract (discussed earlier in this chapter). Agreement was not reached.

Central Arizona Project Repayment Litigation

As a result of the lack of agreement regarding CAWCD's repayment obligation and other financial and operational issues, CAWCD filed a Complaint for Declaratory and Injunctive Relief, dated July 10, 1995, in the United States Bankruptcy Court in Tucson, Arizona, initiating an adversary proceeding (Adversary Proceeding No. A95-0091) in an ongoing bankruptcy case (Case No. 94-02043-TUC-JMM) involving the Central Arizona Irrigation and Drainage District, an irrigation district holding a subcontract for CAP non-Indian agricultural water. The United States filed a counter suit on August 24, 1995, in United States District Court in Arizona.

On September 20, 1995, the complaints were consolidated as a single action in the United States District Court with the CAWCD suit designated as the complaint

and the United States suit designated as a counter claim in a case styled *Central Arizona Water Conservation District* v. *United States*, No. CIV 95-625-TUC-WDB (EHC) and No. CIV 95-1720-PHX-EHC (Consolidated Action). The basis of the numerous claims and counter claims presented in this consolidated action can generally be categorized as: (1) issues relating to CAWCD's repayment obligation; (2) issues relating to CAWCD's water delivery program, such as the marketing of excess water and the costs to be charged for that water; and (3) other financial and operational disputes.

The trial was organized into phases. Phase 1 of the trial, conducted in August 1998, addressed two key issues: determination of the repayment ceiling applicable to CAWCD under the CAP Master Repayment Contract, and determination of the Secretary's ability to limit use of CAP facilities if CAWCD failed to fully repay to the United States the repayment obligation determined by the Secretary. Phase 2 of the trial addressed the issue of CAWCD's repayment obligation for reimbursable costs under the 1988 Master Repayment Contract.

On November 3, 1998, in a decision reported at *Central Arizona Water Conservation District* v. *United States*, 32 F. Supp. 2d 1117 (D. Ariz. 1998), the district court made numerous rulings with respect to Phase 1 of the litigation, among them finding that the repayment ceiling provision of the Master Repayment Contract as amended by Amendment No. 1 in 1988, which the court called the "1988 Agreement," was ambiguous as a matter of law. Specifically, the court ruled:

> 2. The repayment ceiling provision of the 1988 Agreement is ambiguous as a matter of law insofar as it could reasonably be interpreted as establishing either a fixed or variable repayment ceiling for Stages One and Two. Article 9.3(e) shows the repayment ceiling as being fixed at $2.0 billion. Exhibit B, however, includes a repayment ceiling which makes adjustments depending on whether the GRIC executes a water delivery contract with the Secretary of Interior. The conflict between Article 9.3(e) and Exhibit B creates an ambiguity in the 1988 Agreement.

Id. at 1143. The court held that the ambiguity would be construed against the United States as the drafter of the conflicting provisions and further held that:

> 5. The repayment ceiling in the 1988 Agreement was $1.781 billion after the GRIC [Gila River Indian Community] executed a water delivery contract on October 22, 1992. The adjustment in the repayment ceiling from $2.0 billion to $1.781 billion reflects the fact that 173,100 acre-feet of water allocated to GRIC was no longer within the repayment obligation of CAWCD.
>
> 6. The 1988 Agreement required the United States to cease construction if it determined that reimbursable construction costs would exceed the repayment ceiling. The United States breached the 1988 Agreement

> when it continued to incur construction costs in excess of the $1.781 billion repayment ceiling in the absence of an amendatory contract.
>
> * * *
>
> 11. Article 6.7 of the 1988 Agreement is unambiguous. However, it has no application to the present case, because there has been no claim asserted herein that the appropriations ceiling has been exceeded. The remedy set forth in Article 6.7 applies only to the appropriations ceiling, and is not relevant to a situation, such as the one in this case, where only the repayment ceiling has been exceeded. Accordingly, the United States is not entitled to bar CAWCD from using project facilities in the absence of an amendatory contract.

Id. at 1143-1144. The court then granted the following declaratory and injunctive relief against the United States:

> 1. The Court declares that Article 9.3(e) and Exhibit B to the 1988 Agreement limits CAWCD's repayment obligation for Stages One and Two to $1.781 billion unless an amendatory contract is executed providing otherwise.
>
> 2. The Court declares that Defendants may not invoke Article 6.7 of the 1988 Agreement to prevent CAWCD from utilizing CAP facilities. Defendants are hereby enjoined from barring CAWCD from utilizing CAP facilities.

Id. at 1144. A Notice of Appeal for Phase 1 was filed with the United States Court of Appeals for the Ninth Circuit, Appeal No. 77-8-569, on December 31, 1998. The United States filed a motion for voluntary dismissal of appeal on May 17, 2000, based on a stipulated settlement for a stay of litigation reached by the parties, discussed in detail later in this chapter. The appeal rights were reserved until a final order by the district court was issued on November 21, 2007.

As noted above, Phase 2 of the trial, conducted in 1998, addressed the appropriate allocation of the construction costs for Stages I and II of the CAP. The district court did not issue a ruling on Phase 2 issues because negotiations were underway to reach a settlement agreement. All remaining phases of the litigation were stayed pending a settlement.

Central Arizona Project Stipulated Settlement

Negotiations for a stipulated settlement agreement were concluded in 2000, and a Stipulation Regarding a Stay of Litigation, Resolution of Issues During Stay and for Ultimate Judgment Upon the Satisfaction of Conditions (Stipulation) was filed with the district court on May 9, 2000. The court stayed the litigation for 3 years to allow time for implementation of the conditions identified in the Stipulation. During the stay, the United States and CAWCD operated in accordance with the terms of the Stipulation.

A key provision of the Stipulation permitted CAWCD to market "excess water" to help meet Arizona's long-term water planning needs. As provided in the Stipulation and as limited to this context, excess water is "all Project Water that is in excess of the amounts used, resold, or exchanged pursuant to long-term contracts and subcontracts . . . ." Excess water includes that water under contract to, but not ordered in a given year by, Native American tribes and communities.

Native American tribes and communities raised concerns that allowing a marketing program for excess water would motivate recipients of that water to oppose efforts to secure Federal appropriations for the construction of Indian water distribution systems for the CAP. Such opposition might prevent the construction of the facilities needed to allow the Native American tribes and communities to put the water to use on their reservation lands with the result that the water would remain available to the excess water marketing program. To address these concerns, the Stipulation was expressly conditioned upon Congress authorizing a firm funding stream (that is, a dedicated funding mechanism not subject to the annual appropriations process) to supplement annual appropriations for Indian distribution system construction and costs associated with Native American water rights settlements. The Stipulation provided that this firm funding stream was not to exceed the amount of Development Fund revenues credited each year against CAWCD's repayment obligation. See discussion of the Development Fund later in this chapter.

Final effectiveness of the Stipulation was further conditioned upon passage of Federal legislation and upon certain other events, which were to occur within three years of the entry of the Stipulation (that is, by May 2003), including:

- A significant additional allocation of CAP water for Federal purposes to be used for settlement of Native American water rights claims (bringing Native American allocation of the CAP water supply to nearly half of the project supply)

- Final and fully enforceable settlement of the Gila River Indian Community's water rights claims

- An amendment to the Southern Arizona Water Rights Settlement Act of 1982, Pub. L. No. 97-293, Title III, 96 Stat. 1274 (1982), fully enforceable (to resolve settlement implementation issues relating to the Tohono O'odham Nation)

- Final San Carlos Apache Tribe water rights settlement fully enforceable in accordance with the San Carlos Apache Tribe Water Rights Settlement Act of 1992, Pub. L. No. 102-575, Title XXXVII, 106 Stat. 4740 (1992), as amended in 1994, 1996, and 1997

- Amendment of the Navajo Power Marketing Plan[6] of December 1, 1987, to provide for the establishment and collection of rates for the sale or exchange of "Navajo Surplus Power" after September 30, 2011, which optimize the availability and use of revenue for specified purposes of the Stipulation

- Identification of a firm funding stream by Congress to meet purposes identified and prioritized in the Stipulation

Despite efforts to meet the requirements of the Stipulation, in 2002 the parties realized that the conditions of the Stipulation could not be met by the May 2003 deadline and successfully negotiated a Revised Stipulation Regarding a Stay of Litigation, Resolution of Issues During Stay and for Ultimate Judgment Upon the Satisfaction of Conditions (Revised Stipulation) that extended the date for meeting the conditions by nine years to 2012. The Revised Stipulation was filed with the district court on April 11, 2003. By Order dated April 28, 2003, the district court replaced the Stipulation with the Revised Stipulation and stayed the case until May 9, 2012.

Intensive negotiations continued in 2003 and 2004, culminating in passage of the Arizona Water Settlements Act, Pub. L. No. 108-451, 118 Stat. 3478 (2004) (AWSA), which provided the Federal legislation necessary to meet the key conditions established by the Stipulation and contained in the Revised Stipulation. The United States Department of the Interior, the United States Department of Justice, affected Native American tribes and communities, CAWCD, and State and local stakeholders were actively involved in the negotiations that led to passage of the AWSA.

After passage of the AWSA and after the Commissioner of Reclamation adopted the Amended Navajo Power Marketing Plan[7] on September 18, 2007, the parties submitted to the district court a Stipulation for Judgment which updated and modified the Revised Stipulation. The court then entered a Stipulated Judgment, approving the Stipulation for Judgment on November 21, 2007.

Under the Stipulation for Judgment, CAWCD's repayment obligation for the water supply system and regulatory storage stages (that is, Stages One and Two) of the CAP was set at $1,646,462,500 to be repaid to the United States in annual payments through 2046. This amount assumed a total allocation of 667,724 acre-feet per year of CAP water for Federal purposes. Because the amount of water devoted to Federal purposes may change within the overall limitations established under the AWSA, the Stipulation for Judgment also includes a formula to allow each acre-foot of water involved to be valued for the purposes of the CAWCD

[6] Published in the *Federal Register* at 52 Fed. Reg. 48328 (December 21, 1987). See Chapter 13.

[7] Published in the *Federal Register* at 72 Fed. Reg. 54286 (September 24, 2007). See Chapter 13.

repayment obligation at $1,415 per acre-foot. This allows the automatic modification of the CAWCD repayment obligation, up or down, depending on the precise quantity of water ultimately allocated for Federal purposes.

Central Arizona Project Water Allocations[8]

Following authorization of the CAP in 1968, Secretary of the Interior Stewart Udall requested assistance from the State of Arizona in planning for the distribution of the CAP water among the various purposes and potential recipients of such water allocations. The Arizona Department of Water Resources (ADWR) and its predecessor agency provided recommendations to the Secretary for allocation of CAP water to non-Indian water users in Arizona for M&I and non-Indian agricultural purposes.

Determination of the appropriate allocation of CAP water for Native American tribes and communities was undertaken by the Secretary. Initial allocations of CAP water for Indian use were made by Secretary of the Interior Thomas S. Kleppe in 1976 and published in the *Federal Register* at 41 Fed. Reg. 45883 (October 18, 1976). Five Native American tribes and communities were allocated a total of 257,000 acre-feet annually of CAP water, out of a total CAP water supply of approximately 1,500,000 acre-feet annually, in the 1976 decision.

Secretary Kleppe's 1976 allocation was followed by recommendations from the State of Arizona for M&I allocations in June 1977 and for non-Indian agricultural allocations in August 1979. Environmental compliance was initiated to analyze the impacts associated with implementation of the contracting actions needed to effectuate the State's recommended non-Indian allocations.

Before any water delivery contracts were entered into, Secretary of the Interior Cecil D. Andrus proposed to modify and increase the CAP Indian allocations. In December 1980, Secretary Andrus allocated additional CAP water for use by other specified Native American tribes and communities in a decision published in the *Federal Register* at 45 Fed. Reg. 81265 (December 10, 1980). The 1980 decision did not change the quantities allocated to the five tribes and communities in the 1976 decision, but it did revise the priority system applicable to those earlier allocations, and allocated additional tribal water supplies. The 1980 decision allocated a total of 309,828 acre-feet annually, which included the water allocated in 1976, to Native American tribes and communities. The CAP water allocated in 1976 and 1980 for Native American use was allocated either for irrigation use or for maintaining tribal homelands. Ten separate CAP water service contracts for this CAP project water supply were thereafter executed as two-party agreements between the United States and the relevant

[8] United States Department of the Interior notices concerning CAP water allocations published in the *Federal Register* are listed in *Central Arizona Project (CAP), Arizona; Water Allocations*, 71 Fed. Reg. 50449, dated August 25, 2006. *Federal Register* notices regarding CAP water allocations are included in the list of references at the end of this chapter.

Native American tribe or community, with 9 such contracts executed in December 1980 and the remaining contract in October 1992.

In early 1982, the State recommended a revised allocation for M&I and non-Indian agricultural purposes. After completion of a final environmental impact statement, Secretary of the Interior James Watt signed a Record of Decision on February 10, 1983, published in the *Federal Register* at 48 Fed. Reg. 12446 (March 24, 1983) (1983 ROD). In the 1983 ROD, Secretary Watt identified the total amounts of CAP water to be allocated to each of the three major sectors (Indian, M&I, non-Indian agriculture), quantifying the total amounts allocated for Indian use and for M&I use and allocating the remaining supply for non-Indian agricultural use. The 1983 ROD also identified the specific amounts or percentages to be allocated to each individual entity within those sectors, and the method by which priorities would be applied for delivery of CAP water during years of water supply shortages.

The 1983 ROD identified fixed volume allocations totaling 309,828 acre-feet annually for Native American tribes and communities, preserving the 1976 and 1980 allocations for such use. The 1983 ROD also identified fixed volume allocations totaling 638,823 acre-feet annually for 85 non-Indian M&I entities. The CAP water supply remaining after Native American allocations and M&I entities' allocations were made was divided among 23 non-Indian agricultural entities. The non-Indian agricultural allocations were expressed as percentages that would be applied to the supply remaining after the other two sectors had ordered CAP water in any given year. The percentages were based upon each district's CAP-eligible acres after adjustment to reflect any available surface water supplies.

CAP water service contracts were then entered into as subcontracts to the Master Repayment Contract. These CAP water service subcontracts were executed as three-party agreements among the United States, CAWCD, and either the M&I or agricultural entity receiving the particular allocation.

Not all entities that were offered M&I or non-Indian agricultural allocations chose to enter into subcontracts for the delivery of CAP water. At the conclusion of this subcontracting process, subcontracts had not been entered into for 29.3 percent of the non-Indian agricultural supply and 65,647 acre-feet per year or 10.3 percent of M&I water.

In 1988, Congress enacted the Salt River Pima-Maricopa Indian Community Water Rights Settlement Act of 1988, Pub. L. No. 100-512, 102 Stat. 2549 (1988). In accordance with that Act, the Secretary requested recommendations from ADWR with respect to the reallocation of the non-Indian agricultural water previously allocated but not placed under contract. By letter dated January 7, 1991, ADWR recommended to the Secretary an allocation of the remaining 29.3 percent of the non-Indian agricultural supply. After receiving and

considering public comment, Secretary of the Interior Manuel Lujan, Jr. published an allocation decision in the *Federal Register* at 57 Fed. Reg. 4470 (February 5, 1992). That decision contemplated that new or amendatory CAP water service subcontracts would be offered soon thereafter.

The non-Indian agricultural priority subcontracts entered into after 1983 included a "take-or-pay" provision requiring the subcontractors to pay for their annual share of CAP water whether or not it was put to use. The take-or-pay provision became effective when Reclamation declared Stage I of the CAP substantially complete as of October 1, 1993. At that time, the amount of CAP water used by Native American tribes and communities and M&I subcontractors was a small percentage of the total CAP water supply available, thus resulting in a very large water supply for which the non-Indian agricultural subcontractors were financially responsible. In addition, the non-Indian agricultural subcontractors were responsible for the repayment of debt for construction of their irrigation distribution systems. Two of the non-Indian agricultural subcontractors (Central Arizona Irrigation and Drainage District and New Magma Irrigation & Drainage District) entered into bankruptcy proceedings.

CAWCD entered into two-party letter agreements with the non-Indian agricultural subcontractors in late 1993, shortly after Reclamation declared Stage I of the CAP substantially complete. In the letter agreements, the subcontractors purported to waive rights under their subcontracts to all or a portion of their percentage entitlement to CAP agricultural water and to waive certain rights to convert a portion of this water to M&I use. In return, CAWCD purported to waive rights under the subcontract to receive payment of fixed OM&R charges relating to this water; in effect, purporting to waive the take-or-pay provision in the three-party non-Indian agricultural CAP subcontracts entered into with the United States. CAWCD and the non-Indian agricultural subcontractors then entered into two-party excess water agreements. The 1992 non-Indian agricultural water reallocation process adopted by Secretary Lujan was put on hold.

The United States challenged the validity of the two-party letter agreements and the excess water agreements in the *Central Arizona Water Conservation District* v. *United States* litigation described earlier in this chapter. Ultimately, issues relating to the take-or-pay provisions of the non-Indian agricultural subcontracts and to excess water were resolved by relinquishment agreements and new excess water contracts entered into with the non-Indian agricultural subcontractors, in accordance with provisions of the stipulated settlement in the CAP litigation and its implementing legislation, the AWSA, enacted in 2004 and made enforceable in December 2007.

Congress provided for the final allocation of CAP water in the AWSA. In accordance with the AWSA, Secretary of the Interior Dirk Kempthorne rescinded the 1992 reallocation and, in a decision published in the *Federal Register* at 71 Fed. Reg. 50449 (August 25, 2006), reallocated CAP water as follows:

- An additional 197,500 acre-feet per year of CAP non-Indian agricultural priority water was made available for use by Native American tribes and communities in Arizona, of which:

    - 102,000 acre-feet per year was reallocated to the Gila River Indian Community (GRIC) to resolve water claims

    - 28,200 acre-feet per year was reallocated to the Tohono O'odham Nation to resolve water claims

    - 67,300 acre-feet per year was retained for reallocation to Native American tribes and communities in Arizona, subject to conditions specified in the notice relating to future allocations of the water to resolve Native American water claims; of this, 6,411 acre-feet per year was retained by the Secretary until December 31, 2030, for potential use in the settlement of the Navajo Nation's claims to water in the State of Arizona

- 96,295 acre-feet per year of non-Indian agricultural priority water was made available to ADWR to hold under contract in trust for future allocation with the condition that the water keep its non-Indian agricultural priority

- 65,647 acre-feet per year of uncontracted non-Indian M&I priority water was reallocated to certain M&I entities in accordance with recommendations from ADWR

Arizona Water Settlements Act (AWSA)

The Arizona Water Settlements Act, Pub. L. No. 108-451, 118 Stat. 3478 (2004), was enacted on December 10, 2004. The AWSA is a complex statute establishing a framework to resolve many key water rights issues within the State of Arizona related to the CAP, and to resolve certain Native American water claims within the State of Arizona. Title I of the AWSA addresses key CAP water allocation and financial issues and is discussed below. Titles II through IV of the AWSA address Native American water rights settlements and are discussed in Chapter 10. Title II of the AWSA also addresses and modifies provisions of the 1968 Basin Project Act providing for the consumptive use of waters from the Gila River system in New Mexico and for the construction of facilities for such water, described in the AWSA as the New Mexico Unit of the CAP.

AWSA Title I Provisions Relating to Reallocation

Title I of the AWSA is the implementing legislation for the 2003 Revised Stipulation entered in the CAP repayment litigation described earlier in this chapter. The short title for Title I is "Central Arizona Project Settlement Act of 2004." Title I permits the relinquishment of certain CAP non-Indian agricultural priority water held by CAP subcontractors within the State of

Arizona. Title I provides that relinquished water be reallocated by the Secretary to resolve water rights claims of the GRIC and the Tohono O'odham Nation, with a portion of the water to be reserved for use by the Secretary in future Indian water rights settlements.

The AWSA authorized, ratified, and confirmed the Arizona Water Settlement Agreement among ADWR, CAWCD, and the United States. The Arizona Water Settlement Agreement is referred to in the AWSA as the Master Agreement. The Arizona Water Settlement Agreement, effective as of September 20, 2006, provides for the relinquishment of up to 293,795 acre-feet per year of CAP non-Indian agricultural priority water and provides for this water to be reallocated for State and Federal purposes. The Arizona Water Settlement Agreement also serves as the trust agreement, referred to in section 104 of the AWSA, under which ADWR will hold CAP non-Indian agricultural priority water not reallocated for Federal purposes. This water is to be reallocated to M&I users at a later date, subject to conditions specified in the AWSA.

The Arizona Water Settlement Agreement provided the framework for the relinquishment of non-Indian agricultural priority water, so that the water might be used to meet the AWSA's requirement to reallocate 197,500 acre-feet of CAP water for Federal purposes to resolve Native American water claims. See discussion earlier in this chapter relating to CAP allocations.

In accordance with the terms of the AWSA, the irrigation districts relinquishing CAP non-Indian agricultural priority water were relieved of debt incurred under contracts for the repayment of construction costs for CAP distribution systems pursuant to section 9(d) of the Reclamation Project Act of 1939. The districts also benefit from the provisions of the AWSA stating that the Reclamation Reform Act of 1982, Pub. L. No. 97-293, Title II, 96 Stat. 1263 (1982), and any other acreage limitation or full cost pricing provisions of Federal law shall not apply to "land within the exterior boundaries of the Central Arizona Water Conservation District or served by Central Arizona Project water [or to other specified lands]."

In addition, under the terms of the Arizona Water Settlement Agreement, the districts obtained access to excess CAP water through the execution of an excess water agreement, attached as Exhibit 8.2 to the Arizona Water Settlement Agreement. The excess water agreements provide that the water service charge shall be equal to the cost of energy for pumping established for that year for delivery of water to long-term contractors and subcontractors. The excess water agreements are subject to automatic renewal with successive 1-year terms until December 31, 2030, subject to certain conditions. The reallocation of water to the Federal sector as a result of the relinquishment of non-Indian agricultural priority water also resulted in the reduction of CAWCD's repayment obligation.

The AWSA required that the Secretary offer to amend the long-term CAP contracts and subcontracts as a condition of enforceability:

- To provide for permanent service with an initial delivery term of 100 years or greater as authorized by Congress
- To conform to the shortage sharing criteria as described in the Tohono O'odham settlement agreement
- To not require that any CAP water received in exchange for effluent be deducted from the contractual entitlement of the CAP subcontractor

Contract offers and amendments were completed after passage of the AWSA. Amendment No. 2 to the CAP Master Repayment Contract No. 14-06-W-245, dated November 30, 2007, was executed to conform that contract to the AWSA.

The relinquished CAP non-Indian agricultural priority water that was reallocated for Federal purposes for use in Native American water rights settlements has the lowest priority during times of shortages. The provision that allowed Arizona to retain the uncontracted CAP non-Indian M&I priority water was coupled with a provision ensuring that the priority of a portion of the reallocated water available for Federal purposes would be "firmed up" to be equivalent to CAP non-Indian M&I priority for a period of 100 years. For that portion of the relinquished non-Indian agricultural priority CAP water subject to the firming requirement, the State and the Federal government are to secure substitute water supplies to be available for delivery in times of shortage when the relinquished CAP non-Indian agricultural priority water is not available.

On November 15, 2007, the United States and the State of Arizona entered into the Agreement between the Secretary of the Interior and the State of Arizona for the Firming of Central Arizona Project Indian Water, Agreement No. 07-XX-30-W0515 (Firming Agreement), which identifies the terms and conditions under which the State will firm certain CAP Indian water. This Firming Agreement was a condition of enforceability under the AWSA.

The firming program outlined in the AWSA ensures that 60,648 acre-feet of the non-Indian agricultural priority water will be delivered during water shortages in the same manner as CAP M&I priority water. Under the AWSA, the Secretary is to firm 28,200 acre-feet of non-Indian agricultural priority water reallocated to the Tohono O'odham Nation and 8,724 acre-feet of water to be reallocated to Arizona Native American tribes and communities in the future. In accordance with the AWSA and the Firming Agreement, the State is to firm 15,000 acre-feet of non-Indian agricultural priority water reallocated to the GRIC and 8,724 acre-feet of water to be reallocated to Native American tribes and communities in Arizona in the future. In addition, the State of Arizona is also to provide $3 million of

assistance to the Secretary, through cash or in kind services, to carry out the firming obligations related to the Tohono O'odham Nation.

AWSA Title I Provisions Relating to the Development Fund

A key element of Title I of the AWSA is the amendment of the Basin Project Act to authorize additional uses of revenues deposited to the Development Fund (discussed earlier in this chapter). The sources of these revenues, and the uses to which these revenues may be applied, fall under two different sets of rules or tiers. Each tier consists of cascading priorities. Under the terms of the AWSA, the revenues become available for use for AWSA-specified purposes without further congressional action.

The first tier of cascading priorities established under the AWSA fulfilled the requirement of the 2003 Revised Stipulation in the CAWCD repayment litigation that a firm funding stream be provided for construction of CAP Indian distribution systems. The first tier funding stream is firm because, in the event revenues deposited to the Development Fund are insufficient to meet the CAWCD annual repayment obligation, CAWCD is required to make up the difference. Thus, during the period of CAWCD's CAP repayment obligation, a revenue stream equal to CAWCD's annual repayment obligation will be available each year for tier one. Tier one funds are made available for the following purposes in the following order of cascading priorities as provided for in Section 107(a) of the AWSA, which strikes and replaces language in Section 403(f) of the Basin Project Act:

Priority 1. To pay annual fixed OM&R charges associated with the delivery of CAP water under long-term contracts for use by Native American tribes and communities in Arizona. Charges associated with deliveries to the Ak-Chin Indian Reservation are excepted from this provision by Section 107(a)(5) of the AWSA.

Priority 2. To make deposits totaling $53 million in the Gila River Indian Community Water OM&R Trust Fund.

Priority 3. To pay $147 million (amount to be indexed from January 2000 forward) for the rehabilitation of the GRIC portion of the San Carlos Irrigation Project, of which not more than $25 million is to be available annually consistent with an agreement among the GRIC, the United States of America, and the San Carlos Irrigation and Drainage District dated May 13, 2006.

Priority 4. To pay for activities designated as (a.) through (h.) below. The AWSA provides that (a.) has first priority, and that (b.) through (h.) may be funded "under any particular priority and without regard to priority":

a. To make deposits totaling $66 million into the New Mexico Unit Fund as provided in Section 212(i) of the AWSA (amount to be indexed from January 2004 forward) in 10 equal annual payments beginning in 2012;

b. Upon satisfaction of the conditions set forth in Section 212(j) and 212(k) of the AWSA, to pay certain costs associated with construction of the New Mexico Unit, in addition to any amounts that may be expended from the New Mexico Unit Fund, a minimum of $34 million and a maximum of $62 million as provided in Section 212 of the AWSA (amount to be indexed from January 2004 forward);

c. To pay the costs associated with the construction of distribution systems required (i) to implement the Master Contract Between the United States and the Gila River Indian Community for Repayment of Construction Costs and Operation, Maintenance, and Replacement of a Water Distribution System, Contract No. 6-07-30-W0345, for the Community's Pima-Maricopa Irrigation Project; (ii) to implement Section 3707(a)(1) of the San Carlos Apache Tribe Water Rights Settlement Act of 1992; and (iii) to implement Section 304 of the Southern Arizona Water Rights Settlement Amendments Act of 2004;

d. To pay $52,396,000 for the rehabilitation of the San Carlos Irrigation and Drainage District's portion of the San Carlos Irrigation Project of which not more than $9 million is to be available annually (total amount to be indexed from January 2000 forward);

e. To pay other costs specifically identified under Sections 213(g)(1) and 214 of the AWSA and under the Southern Arizona Water Rights Settlement Amendments Act of 2004;

f. To pay a total of not more than $250 million to the future Indian Water Settlement Subaccount of the Development Fund to be used for future Native American water rights settlements in Arizona approved by the United States Congress, under conditions set forth in the AWSA;

g. To pay costs associated with installation of gages on the Gila River and its tributaries to measure water for purposes of the New Mexico Consumptive Use and Forbearance Agreement, not to exceed $500,000; and

h. To pay the Secretary's cost of implementing Title I of the AWSA.

Priority 5. In addition to amounts appropriated for these purposes, to pay the costs associated with on-reservation CAP distribution systems for the Yavapai Apache (Camp Verde), Tohono O'odham Nation (Sif Oidak District), Pasqua Yaqui, and Tonto Apache Tribes, and to make payments to those tribes as provided for in the Revised Stipulation, subject to the conditions of the AWSA.

Priority 6. Carry-over funds to following year.

The second tier provided for in Section 107(a) of the AWSA, which as noted above strikes and replaces statutory language in Section 403(f) of the Basin Project Act, is comprised of revenues deposited to the Development Fund in a given year that are in excess of the amount to be credited against the CAWCD annual repayment obligation. This, for example, might occur through sales of Navajo surplus above cost during times of high power demand. Tier two funds are made available for the following purposes in the following order of cascading priorities:

Priority 1. To pay annual fixed OM&R charges associated with the delivery of CAP water under long-term contracts held by Native American tribes and communities in Arizona. Charges associated with deliveries to the Ak-Chin Indian Reservation are excepted from this provision by Section 107(a)(5) of the AWSA.

Priority 2. To make the final outstanding annual payment for the costs of each unit of the projects authorized under Title III of the Basin Project Act that are to be repaid by CAWCD.

Priority 3. To reimburse the general fund of the United States Treasury (Treasury) for CAP fixed OM&R charges previously paid under Priority 1 of the first tier, described above.

Priority 4. To reimburse the general fund of the Treasury for costs previously paid under Priorities 2 through 5 of the first tier, described above.

Priority 5. To pay the annual installment to the general fund of the Treasury for non-Indian irrigation system debt under repayment contracts entered into pursuant to section 9(d) of the Reclamation Project Act of 1939 and made nonreimbursable under the AWSA.

Priority 6. To pay to the general fund of the Treasury the difference between (i) the costs of each unit of the projects authorized under Title III

of the Basin Project Act that are repayable by CAWCD, and (ii) any costs allocated to reimbursable functions under any CAP cost allocation undertaken by the United States.

Priority 7. For deposit in the general fund of the United States Treasury.

The AWSA's amendments to the Basin Project Act provide authority to the Secretary of the Treasury to invest the Development Fund revenues if, in the judgment of the Secretary of the Interior, the funds are not needed to meet current year payments due. Section 107 of the AWSA limits the types of investments which may be made. Disbursements from the Development Fund may begin after January 1, 2010, to fund the two tiers of cascading priorities.

Title I of the AWSA also provides authorization of appropriations as necessary to comply with the following biological opinions, including any funding transfers required by the opinions, and requires these costs to be treated as CAP construction costs:

- Biological opinion, numbered 2-21-90-F-119, entitled *Transportation and Delivery of Central Arizona Project Water to the Gila River Basin (Hassayampa, Agua Fria, Salt, Verde, San Pedro, Middle and Upper Gila Rivers and Associated Tributaries), in Arizona and New Mexico,* dated April 15, 1994

- Biological opinion, numbered 2-21-95-F-462, entitled *Biological Opinion on Operation of Modified Roosevelt Dam in Gila and Maricopa Counties, Arizona*, dated July 23, 1996, relating to the impacts of modifying Roosevelt Dam on the southwestern willow flycatcher

- Any final biological opinion resulting from the draft biological opinion, numbered 2-21-91-F-706, entitled *Biological Opinion on Impacts of the Central Arizona Project (CAP) to Gila Topminnow in the Santa Cruz River Basin Through Introduction and Spread of Nonnative Aquatic Species*, dated May 1999

Robert B. Griffith Water Project, Nevada

Updating the Hoover Dam Documents 1978, Chapter II, discusses the authorization, water allocation, and repayment of Stages I and II of the project originally named the Southern Nevada Water Project (SNWP) and renamed in 1982 the Robert B. Griffith Water Project (Griffith Project) and discusses construction of Stage I.

Construction of Stage II of the SNWP was initiated in 1977 and completed in 1983 after it was renamed the Griffith Project. The second stage provided an additional annual delivery capability of 166,800 acre-feet of Colorado River water (the first stage provided a delivery capability of 132,200 acre-feet) and expanded some of the existing Stage I facilities. Stage II facilities included five pumping plants, the second barrel to the main aqueduct, and about 30 miles of pipeline and laterals with surge tanks, regulating tanks, and other delivery facilities. In conjunction with this stage, the State of Nevada enlarged and modified the Alfred Merritt Smith water treatment facilities to accommodate both stages. The Stage II aqueduct system has a peaking capability of 53.4 million cubic feet of water per day.

In the early 1990s, the project was incorporated into the Southern Nevada Water System, which is managed by the Southern Nevada Water Authority (SNWA), a political subdivision of the State of Nevada. Also included in the Southern Nevada Water System is the Treatment and Transmission Facility, which was constructed solely by SNWA. The Colorado River Commission of Nevada approved development of this independent water treatment and delivery system in 1994. The SNWA Treatment and Transmission Facility, which interfaces with the Griffith Project and supplements the capabilities of the Griffith Project, provides Nevada full access to its annual 300,000 acre-feet apportionment of Colorado River water.

On July 3, 2001, the United States transferred title of the Griffith Project to SNWA pursuant to the Griffith Project Prepayment and Conveyance Act, Pub. L. No. 106-249, 114 Stat. 619 (2000). Through its Capital Improvement Program before and after title transfer of the Griffith Project, SNWA has made significant improvements to the Griffith Project's intake, treatment, and delivery system to meet increased demand in the Las Vegas Valley.

Lower Colorado Water Supply Project, California

The Lower Colorado Water Supply Act, Pub. L. No. 99-655, 100 Stat. 3665 (1986) authorized the Secretary to construct, operate, and maintain the Lower Colorado Water Supply Project (LCWSP) in California. The project consists of wells that pump ground water to be exchanged for Colorado River water. The LCWSP provides service for nonagricultural water supply demands, in particular for "domestic, municipal, industrial, and recreational purposes."

Funds of approximately $1,800,000 were appropriated for the construction of the LCWSP. Stage I of the LCWSP was completed in 1996 and consists of two wells located in the sand dunes area east of Drop 1 along the All-American Canal (AAC) in Imperial County, California. Reclamation transferred responsibilities for OM&R for the LCWSP to the Imperial Irrigation District (IID) in 1997.

Ground water wells in addition to those constructed under Stage I may be constructed under Stage II when the demand for water from the LCWSP exceeds the existing pumping capacity.

To recover construction costs, the Lower Colorado Water Supply Act authorized the Secretary to enter into repayment contracts with individuals or Federal or non-Federal governmental entities whose lands or interests in lands are located adjacent to the Colorado River in the State of California who do not hold rights to Colorado River water or whose rights are insufficient to meet their present or anticipated future needs, as determined by the Secretary.

The Lower Colorado Water Supply Act also authorized the Secretary to enter into water exchange agreements such that persons or non-Federal entities agree to exchange a portion of Colorado River water to which they hold an entitlement for an equivalent quantity and quality of ground water to be withdrawn from the LCWSP wells. Water from the LCWSP wells is pumped into the AAC and is exchanged for Colorado River water used by LCWSP contractors and subcontractors. The LCWSP is authorized to provide up to 10,000 acre-feet per year at salinity levels equal to, or less than, the annual average salinity of flows arriving at Imperial Dam. Although Stage I of the LCWSP was constructed with a design capacity of 5,000 acre-feet, as of December 31, 2008, the wells constructed under Stage I of LCWSP were capable of producing more than 5,000 acre-feet of water per year.

The Lower Colorado Water Supply Act was amended by Section 203 of the Act of November 19, 2005, Pub. L. No. 109-103, 119 Stat. 2267 (2005). The 2005 amendment authorizes the Secretary to enter into LCWSP contracts with persons or entities holding water delivery contracts under Section 5 of the Boulder Canyon Project Act (see Chapter 6) for M&I uses of Colorado River water within the State of California, subject to the demand of M&I users along or adjacent to the Colorado River. The 2005 amendment further authorizes the Secretary to enter into agreements with IID or the City of Needles for the design and construction of the remaining stages of the project.

Major Contracts

The Contract Among the United States, Imperial Irrigation District, and the Coachella Valley Water District for Exchange of Water from the Lower Colorado Water Supply Project Well Field for Colorado River Water, Contract No. 2-07-30-W0277, was executed May 22, 1992. IID and Coachella Valley Water District (CVWD) agreed to reduce their diversions from the Colorado River in an amount equal to the volume of ground water pumped from LCWSP wells and discharged into the AAC up to a maximum of 10,000 acre-feet per year. The groundwater is then available to IID and CVWD. An amount of Colorado River water equal to the amount of water that would have otherwise been diverted by IID and CVWD is made available for beneficial consumptive use by LCWSP beneficiaries.

The Contract Between the United States and City of Needles, California for the Lower Colorado Water Supply Project Repayment of Costs and Delivery of Water, Contract No. 2-07-30-W0280, dated September 10, 1992, provides for the construction of Stage I of the LCWSP and repayment of Federal costs associated with Stage I. Contract No. 2-07-30-W0280 also provides for Needles to contract for 3,500 acre-feet of Stage I LCWSP well field capacity. In accordance with the Lower Colorado Water Supply Act, Needles advanced to the United States 20 percent of Needles' share of the estimated LCWSP construction costs and assumed the administrative responsibilities associated with the LCWSP for non-Federal entities located in specified areas of San Bernardino County. The repayment period for Needles' repayment obligation was 15 years, but Needles repaid the balance of its obligation with a lump sum payment in 1995. Contract No. 2-07-30-W0280 was amended on July 3, 2002, and Needles assumed the administrative responsibilities for the non-Federal LCWSP beneficiaries in specified areas of Riverside and Imperial Counties, as well as San Bernardino County.

The Contract Between the United States and Imperial Irrigation District for Administration and Operation, Maintenance, and Replacement of the Lower Colorado Water Supply Project, Contract No. 5-07-30-W0323, dated October 13, 1995, provides for OM&R of the LCWSP. Costs for OM&R performed by IID for the LCWSP are paid by LCWSP water users.

Agreement No. 8-07-30-W0375, dated September 30, 1998, allocated 1,150 acre-feet of Stage I capacity to the Bureau of Land Management (BLM) for consumptive use on BLM-administered lands located adjacent to the Colorado River in California. The agreement also provides for BLM's repayment of its portion of LCWSP capital costs over a 15-year period. BLM is also responsible for paying the annual costs of OM&R for LCWSP facilities that are allocable to BLM.

On December 29, 2004, a Reclamation determination reserved an additional 350 acre-feet of Stage I capacity in the LCWSP for use by Reclamation in California at Federal facilities on Federal land adjacent to the Colorado River. With this determination, the estimated 5,000 acre-feet per year of Stage I capacity was completely allocated.

The Contract Among the United States, the City of Needles, and The Metropolitan Water District of Southern California for Delivery of Lower Colorado Water Supply Project Water, Contract No. 06-XX-30-W0452, dated March 26, 2007, provides for The Metropolitan Water District of Southern California (MWD) to be supplied with unused LCWSP water, as determined on an annual basis by Needles in consultation with Reclamation and BLM. The contract's term extends until December 31, 2045, unless it is renewed by the parties. MWD paid a capital charge and will pay LCWSP OM&R charges

assessed by Needles, together with an administrative fee for each acre-foot of unused LCWSP water delivered to MWD.

Contract No. 06-XX-30-W0452 also authorizes Needles to establish a trust fund account with funds provided by MWD. The purposes of the trust fund are: (1) to advance monies or reimburse costs for the construction of Stage II of the LCWSP, if Stage II is to be constructed; (2) to reimburse Needles for certain remaining Stage I capital costs that Needles has paid; (3) to conduct studies regarding desalting of LCWSP water; (4) to reduce, as necessary, the total dissolved solids concentration of LCWSP ground water to permit such water to continue to be discharged into the AAC; and (5) to obtain an alternative water supply, if necessary.

All-American Canal and Coachella Canal Lining Projects, California

Congress authorized construction of the All-American Canal in 1928, as part of the Boulder Canyon Project Act, Pub. L. No. 70-642, 45 Stat. 1057 (1928) (BCPA). In the BCPA, Congress approved a new diversion dam and "a main canal and appurtenant structures located entirely within the United States connecting the Laguna Dam, or other suitable diversion dam, with the Imperial and Coachella Valleys in California . . . ." The main canal became known as the "All-American" Canal because its route lies wholly within the United States. The AAC replaced the Alamo Canal, a privately financed canal that diverted irrigation water from the Colorado River to California's Imperial Valley, but ran for 50 miles within the United Mexican States (Mexico). Prior to the construction of the AAC, there was a series of disputes regarding the operation of the portion of the Alamo Canal in Mexico.

The AAC is approximately 80 miles long, runs roughly parallel to the United States - Mexico border, and carries more than 3 million acre-feet each year of Colorado River water for use in the Imperial and Coachella Valleys of Southern California. The AAC was constructed as an earthen canal. The United States retains title to the canal, which is operated and maintained by IID under contract with the Secretary.

The Coachella Branch of the AAC is also known as the Coachella Canal and serves the Coachella Valley, which lies to the north of the Imperial Valley. The Coachella Canal is approximately 120 miles long and carries approximately 300,000 acre-feet each year of Colorado River water for use in the Coachella Valley. The Coachella Canal was constructed as an earthen canal in some segments and a concrete canal in other segments. The United States retains title to the canal, which is operated and maintained by CVWD under contract with the Secretary.

Because the earthen segments of the canals were constructed through sandy desert soils, seepage occurs. Seepage losses are charged against California's 4,400,000-acre-feet per year apportionment of Colorado River water. Federal actions were undertaken, beginning in the 1970s, to reduce seepage from these canals.

In Section 102(a) of the Colorado River Basin Salinity Control Act, Pub. L. No. 93-320, 88 Stat. 266 (1974), Congress authorized the concrete lining of approximately the first 49 miles of the Coachella Canal. The purpose of the lining was to reduce seepage and, for an interim period, to assist the Secretary by providing a source of replacement water for Wellton-Mohawk Irrigation and Drainage District (WMIDD) irrigation drainage flows. See Chapter 4 for a discussion of the bypass flows. A Reclamation report entitled *Colorado River Basin Salinity Control Projects Title I Division, Coachella Canal Unit Definite Plan Report* dated June 1978, estimated that the 49-mile lined section of the Coachella Canal conserves approximately 132,000 acre-feet of water per year.

In 1988, Congress enacted legislation to authorize the Secretary to undertake canal lining projects to line portions of the Coachella Canal and the AAC. The lining projects were to conserve seepage in order to provide additional water supplies for California water agencies. Title I of this legislation authorized the Secretary to use up to 16,000 acre-feet of the conserved water to facilitate a Native American water settlement, and an amendment to Title I later directed the Secretary to do so. See the Act of November 17, 1988, Pub. L. No. 100–675, 102 Stat. 4000 (1988) (1988 Act), as amended and supplemented by Section 211 of Title II of the Act of October 27, 2000, Pub. L. No. 106-377, Appendix B, Title II, 114 Stat. 1441A-70 (2000) (Packard Amendment). Title I of the 1988 Act is the San Luis Rey Indian Water Rights Settlement Act further discussed in Chapter 10.

Title II of the 1988 Act authorized the Secretary to construct a new lined canal or line the previously unlined portions of the Coachella Canal. Title II further authorized Reclamation to recover the seepage loss from a portion of the AAC, from the vicinity of Pilot Knob to Drop 4, utilizing one of three options: (1) construct a new lined canal; (2) line the previously unlined portions of the AAC; or (3) construct seepage recovery facilities.

In the 1988 Act, Congress prohibited the use of Federal funds for the canal lining projects but authorized the Secretary to accept funds from major California water agencies for this purpose. Ultimately, funding for the canal lining project was provided by the State of California and through agreements entered into among California water agencies, as discussed later in this chapter.

Consultations with Mexico

A portion of the seepage from the AAC is believed to move in a generally southerly direction underground into Mexico. After passage of the 1988 Act, the

United States Section of the International Boundary and Water Commission (IBWC) initiated formal consultations with the Mexican Section of the IBWC, pursuant to Resolution 6 of Minute 242, regarding the proposed project to line the AAC. The consultations included technical exchanges regarding the potential effects of canal lining on ground and surface water in the Mexicali Valley. In the course of those consultations, Mexico expressed concerns over potential adverse impacts to Mexican ground water wells in areas south of the AAC.

During the consultations, the United States advised Mexico that Colorado River water seeping from the AAC is water reserved to the United States under the Treaty between the United States of America and Mexico, Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, signed on February 3, 1944, 59 Stat. 1219 (Mexican Water Treaty), and that the United States has the right to recover such water. See the Record of Decision dated May 1994, discussed later in this chapter. As a matter of comity, in its May 1994 Record of Decision (which, as discussed below, selected an alternative to construct a new parallel concrete-lined canal for approximately a 23-mile portion of the AAC), the United States identified a number of actions that could assist Mexico in its efforts to adjust for the loss of the seepage.

Although formal consultations with Mexico under Minute 242 concluded in the 1990s, the United States Section of the IBWC continued to address cross-border water and salinity issues with its counterpart, the Mexican Section of the IBWC. See Chapter 4. Additional discussions of AAC lining issues continued intermittently throughout the 1990s through the initiation of AAC Lining Project construction activities in 2007.

Records of Decision

Following passage of the 1988 Act, Reclamation initiated a process under the National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (1970) (NEPA), to examine the various methods to conserve a portion of the seepage of water from the AAC. Notice of availability of the Final Environmental Impact Statement/Final Environmental Impact Report (FEIS/FEIR) dated March 1994, was published in the *Federal Register* at 59 Fed. Reg. 18573 (April 19, 1994). Ultimately, in the July 29, 1994, *Record of Decision, Final Environmental Impact Statement, All-American Canal Lining Project Imperial County, California* (1994 ROD), for which a notice of availability was published in the *Federal Register* at 59 Fed. Reg. 40601 (August 9, 1994), Reclamation selected the AAC alternative that called for construction of a new parallel lined canal from 1 mile west of Pilot Knob to Drop 3 (a length of approximately 23 miles). The construction of this 23-mile parallel canal is known as the AAC Lining Project and was projected in the FEIS/FEIR to conserve approximately 67,700 acre-feet of water per year.

Following completion of a series of agreements with the State of California and various California agencies in 2003, efforts to undertake construction of the

AAC Lining Project were renewed. These efforts are discussed later in this chapter and in Chapter 6. On January 13, 2006, Reclamation issued a memorandum regarding its reevaluation of the 1994 FEIS/EIR and the 1999 Reexamination and Reanalysis Document for the AAC Lining Project. Attached was the *Supplemental Information Report, All-American Canal Lining Project*, dated January 12, 2006, which concluded that no significant new circumstances or information relevant to environmental concerns and bearing on the project or its impacts have occurred since completion of the FEIS/EIR.

Reclamation also initiated a process under NEPA to examine the various methods to conserve a portion of the seepage of water from the Coachella Canal. In the *Record of Decision of the Lower Colorado Region for the Coachella Canal Lining Project, Riverside and Imperial Counties, California* (2002 ROD), signed March 27, 2002, based on a 2001 FEIS/FEIR for which the notice of availability was published in the *Federal Register* at 66 Fed. Reg. 21179 (April 27, 2001), Reclamation approved the Conventional Lining Alternative as the agency Preferred Alternative for implementing the Coachella Canal Lining Project (CCLP). The 2001 FEIS/FEIR also analyzed a Parallel Canal Alternative.

Subsequent to completion of the 2002 ROD, a number of issues were identified which caused Reclamation to reconsider the original Preferred Alternative for the CCLP. These included a determination that the condition of the original siphons and related control structures had deteriorated and needed replacement, the inability to make full water deliveries to CVWD during construction, an unacceptable risk for water delivery outage and damage to project facilities and to third parties, and a requirement for a large area of ground disturbance within and outside of the right-of-way. On April 9, 2004, Amendment Number 1 to the 2002 ROD was executed, identifying a change in the Preferred Alternative from the Conventional Lining Alternative (using the existing canal alignment) to a refined Parallel Canal Alternative. Under Amendment Number 1, the length of the refined Parallel Canal Alternative would be approximately 35.1 miles including 25 new siphons and 6 new replacement check/control structures.

During these years, the major California water agencies continued to attempt to reach agreement with respect to funding for the canal lining projects and with respect to the distribution of the water which would be conserved. In 2003, these issues were ultimately resolved in a set of agreements involving numerous parties.

The Allocation Agreement Among the United States of America, The Metropolitan Water District of Southern California, Coachella Valley Water District, Imperial Irrigation District, San Diego County Water Authority, the La Jolla, Pala, Pauma, Rincon and San Pasqual Bands of Mission Indians, the San Luis Rey River Indian Water Authority, the City of Escondido and Vista Irrigation District (Allocation Agreement), dated October 10, 2003, and discussed in Chapter 6, provides for the distribution of water conserved by the CCLP and the AAC Lining Project.

The Allocation Agreement is integrally related to the Colorado River Water Delivery Agreement: Federal Quantification Settlement Agreement (CRWDA), dated October 10, 2003, which is designed to reduce use of Colorado River water in California through quantification and capping of certain priorities within California and commitments to conserve and transfer water for a period of years. The CRWDA included a major portion of the CCLP's projected water conservation savings (26,000 acre-feet per year) and all of the AAC Lining Project's projected water conservation savings (67,700 acre-feet per year) in the agreed schedule of water transfers. The CRWDA is discussed in detail in Chapter 6.

Non-Federal funding for the CCLP and the AAC Lining Project was secured through the set of agreements entered into in 2003, and the California Legislature committed substantial State financial resources to this effort as part of State legislation implementing the CRWDA and related agreements.

Following execution of the CRWDA, with funding secured and disposition of the conserved water within California addressed, Reclamation and the participating California entities proceeded with the necessary work to implement the CCLP and the AAC Lining Project.

Coachella Canal Lining Project Construction and Determinations

Construction of the CCLP began in 2004. The CCLP consists of 25 new siphons, a redesigned parallel lined canal to replace 34.5 miles of existing earthen reaches of canal between siphons 7 and 14 and between siphons 15 and 32, and 1 lined reach of canal between siphons 14 and 15. Construction of the lining project began in November 2004. The principal lining portion of the project was complete by December 2006, and water started flowing in the newly lined canal at that time. The new canal was constructed on the west side of the existing canal and within the existing canal right-of-way. The new canal has a flow capacity of 1,300 cubic feet per second (cfs), while the original canal had the following capacities: 1,600 cfs between siphons 7 and 24; 1,350 cfs between siphons 24 and 31; and 1,300 cfs between siphons 31 and 32.

The amount of conserved water available for allocation from the CCLP is determined by the Secretary as provided for in the 1988 Act and the Allocation Agreement. Of the total amount conserved, 4,850 acre-feet per year is available to implement mitigation measures to satisfy the requirements of Section 203(a)(2) of the 1988 Act.

As of January 2008, although water was being conveyed through the parallel canal, the CCLP had not been transferred into an O&M status. In accordance with Section 204 of the 1988 Act and Section 5.3 of the Allocation Agreement, the Secretary, through an Interim Determination dated January 31, 2008, determined the quantity of water conserved by the CCLP and the amount of water available for allocation from the CCLP as follows:

- The quantity of water conserved by the CCLP through the term of the Allocation Agreement is 30,850 acre-feet per year, except that for calendar years 2007 and 2008, the quantity of water conserved by the CCLP is 27,850 acre-feet per year.

- The amount of water available for allocation from the CCLP each year is the quantity of water conserved by the CCLP minus the amount of water taken from the Coachella Canal that is used for CCLP mitigation in that year.

- The amount of water allocated to the San Diego County Water Authority (SDCWA) each year is the amount of water available for allocation from the CCLP minus the amount delivered for the benefit of the San Luis Rey Settlement parties and for IID under Articles 7 and 9, respectively, of the Allocation Agreement.

- Notwithstanding the above, of the quantity of water conserved by the CCLP each year, the Secretary shall allocate each year at least 4,500 acre-feet for the benefit of the San Luis Rey Settlement parties and, of the remainder, at least 21,500 acre-feet to the San Diego County Water Authority, minus the amount, if any, delivered in excess of 4,500 acre-feet for the benefit of the San Luis Rey Settlement parties and minus the amount, if any, delivered to IID under Articles 7 and 9, respectively, of the Allocation Agreement.

The Interim Determination is subject to review by the Secretary at reasonable intervals and, at a minimum, at the completion of construction of the CCLP.

All-American Canal Litigation, Legislation, and Construction

Following execution of a number of agreements with California entities in October 2003 (described in this chapter and Chapter 6), in July 2005, as efforts to begin the construction of the AAC Lining Project were nearing completion, a number of groups from both the United States and Mexico brought suit against the United States in Federal district court in Nevada to enjoin the AAC Lining Project. The suit alleged that the project would affect water users in Mexico that rely on Colorado River water that seeps from the AAC into Mexico. The suit further alleged that the project was approved in violation of various Federal environmental statutes, primarily NEPA and the Endangered Species Act of 1973, Pub. L. No. 93-205, 87 Stat. 884 (1973).

The plaintiffs included a civic and business organization from the Mexicali Valley in Mexico; the City of Calexico, California; and two nonprofit environmental organizations from California. Intervenor-defendants included IID, SDCWA, SNWA, the State of Nevada, and several other major water users from the lower Colorado River Basin.

The district court ruled in favor of the United States on all counts. The district court found that the Mexican Water Treaty governed allocation of the Colorado River between the two nations and that the Treaty limited the applicability of United States environmental laws beyond the borders of the United States. See *Consejo de Desarrollo Economico de Mexicali AC* v. *United States*, 417 F. Supp. 2d 1176 (D. Nev. 2006); *Consejo de Desarrollo Economico de Mexicali AC* v. *United States*, 438 F. Supp. 2d 1194 (D. Nev. 2006); and *Consejo de Desarrollo Economico de Mexicali AC* v. *United States*, 438 F. Supp. 2d 1207 (D. Nev. 2006). These decisions are discussed further in Chapter 12.

Following the decisions issued by the District Court, the plaintiffs appealed to the United States Court of Appeals for the Ninth Circuit. With construction efforts poised to proceed, the Ninth Circuit temporarily enjoined the construction during the pendency of the appeal. *Amicus curiae* briefs were filed with the Ninth Circuit, including a brief jointly filed by the seven Colorado River Basin States in support of the United States and a brief filed by Mexico's Ministry of Foreign Affairs on behalf of Mexico.

While the appeal before the Ninth Circuit was pending, but prior to any substantive rulings by the Circuit Court, Congress enacted the Tax Relief and Health Care Act of 2006, Pub. L. No. 109-432, 120 Stat. 3046 (2006), in which Subtitle J – All American Canal Projects, directed the Secretary to carry out the lining project "without delay" and "notwithstanding any other provision of law." After consideration of the new legislation, the Ninth Circuit dismissed the case against the AAC Lining Project as moot. See *Consejo de Desarrollo Economico de Mexicali A.C.* v. *United States*, 482 F.3d 1157 (9th Cir. 2007), discussed further in Chapter 12.

Construction of the AAC Lining Project began in June 2007 and, as of December 31, 2008, was expected to be completed in 2010.

Lower Colorado River Drop 2 Storage Reservoir Project

Congress, in Section 396 of the Tax Relief and Health Care Act of 2006 (discussed immediately prior with respect to the AAC Lining Project), directed the Secretary to design and provide for the construction, operation, and maintenance of a regulated water storage facility near the AAC. This facility is known as the Drop 2 Storage Reservoir. The purpose of the Drop 2 Storage Reservoir project is to provide additional storage capacity to reduce nonstorable flows on the Colorado River below Parker Dam.

As of December 31, 2008, the Drop 2 Storage Reservoir was being constructed within Imperial County, California, just north of the Drop 2 Power Plant, which is located on the AAC approximately 25 miles west of Yuma, Arizona. The Drop 2 Storage Reservoir Project consists of:

- A reservoir facility of approximately 615 acres, comprised of two 4,000-acre-foot capacity cells having a total storage capacity of 8,000 acre-feet

- An inlet canal of approximately 6.5 miles in length connecting the AAC to the reservoir facility

- A piping system and outlet canal connecting the reservoir facility back to the AAC

Based on historical data, the Drop 2 Storage Reservoir is estimated to conserve, on average, approximately 70,000 acre-feet of water annually that would otherwise be nonstorable and would flow to Mexico in excess of treaty obligations. The life of the Drop 2 Storage Reservoir is estimated to be 50 years. Over the life of the Drop 2 Storage Reservoir, the estimated amount of water projected to be conserved is 3,500,000 acre-feet. Construction began in 2008 and is expected to be completed in 2010.

The Agreement Among the United States of America, through the Department of the Interior, Bureau of Reclamation; the Colorado River Commission of Nevada; and the Southern Nevada Water Authority for the Funding and Construction of the Lower Colorado River Drop 2 Storage Reservoir Project, Contract No. 07-XX-30-W0516, dated December 13, 2007 (Drop 2 Funding Agreement), provides that SNWA will pay construction, construction management, and mitigation costs estimated at $172 million, and will pay approximately 15 years of operation, maintenance, repair, and replacement costs estimated at $7.4 million. In return, 600,000 acre-feet of Intentionally Created Surplus (ICS) is made available to SNWA to be used within 25 years but no more than 40,000 acre-feet per year.

CAWCD exercised its right to enter into the Drop 2 Funding Agreement and contribute funds to the project in exchange for a portion of the ICS credits by executing the Notice of Election to Participate on January 3, 2008. MWD exercised its right to enter into the Drop 2 Funding Agreement and contribute funds to the project in exchange for a portion of the ICS credits by executing the Notice of Election to Participate on April 22, 2008. MWD and CAWCD each contributed one-sixth of the project funding in exchange for each receiving 100,000 acre-feet of SNWA's ICS credits. SNWA's ICS credits were reduced to 400,000 acre-feet. ICS is further discussed in Chapter 2.

Transfers of Responsibility for Operation, Maintenance, and Replacement of Water Facilities

Reclamation has the authority under Federal reclamation law to enter into a contract with project beneficiaries to transfer responsibility for OM&R of project

facilities to the project beneficiaries. Listed below are the major facilities that have been transferred to project beneficiaries for OM&R during the period from 1979 through 2008:

- Transfer of OM&R of Bard Unit, Yuma Project, to the Bard Water District was accomplished through Contract No. 1-07-30-W0018, dated March 10, 1981.

- Transfer of OM&R of the Gila Gravity Main Canal, Gila Project, to the North Gila Valley Irrigation District, the Yuma Irrigation District, the Yuma Mesa Irrigation and Drainage District, and the Unit B Irrigation and Drainage District was accomplished through Contract No. 2-07-30-W0026, dated June 16, 1982.

- Transfer of OM&R of Imperial and Laguna Dams and Senator Wash Pump-Generating Facility and Reservoir Structures to IID was accomplished through Contract No. 3-07-30-W0030, dated December 7, 1982.

- Transfer of OM&R of Indian Unit, Yuma Project, to Bard Water District was accomplished through Contract No. 3-07-30-W0031, dated January 19, 1983.

- Transfer of OM&R of certain CAP facilities to CAWCD was accomplished through Contract No. 7-07-30-W0167, dated August 5, 1987.

- Transfer of the OM&R of certain works of the Valley Division, Yuma Project, relating to salinity and flow variability to the Yuma County Water Users' Association was accomplished through the Second Supplementary Contract to Contract No. I76r-671, dated June 3, 2005.

Title Transfers

The United States typically holds title to facilities that have been constructed under Federal reclamation law. Consistent with the Reclamation Act of 1902, Pub. L. No. 57-161, 32 Stat. 388 (1902), unless the authorizing legislation for the project provides for transfer of title, special legislation is required to transfer title of project facilities to project beneficiaries. Listed below are the facilities for which title has been transferred during the period from 1979 through 2008:

- Transfer of title of the Boulder City Water Supply System to the City of Boulder City, Nevada, occurred in 1996 under the authority of Section 11 of the National Forest and Public Lands of Nevada Enhancement Act of 1988, Pub. L. No. 100-550, 102 Stat. 2749 (1988).

- Transfer of title of the San Diego Aqueduct to SDCWA occurred in 1997 under the authority of the Act of October 11, 1951, Pub. L. No. 82-171, 65 Stat. 404 (1951).

- Transfer of title of the Griffith Project to SNWA occurred in 2001 under the authority of the Griffith Project Prepayment and Conveyance Act, Pub. L. No. 106-249, 114 Stat. 619 (2000).

- Transfer of title of the Harquahala Valley Irrigation District (HVID) CAP distribution system to HVID occurred in 2004 under the authority of the Fort McDowell Indian Community Water Rights Settlement Act of 1990, Pub. L. No. 101-628, Title IV, 104 Stat. 4480 (1990).

- Transfer of title of the WMIDD Gila Project water distribution system and lands to WMIDD occurred in 2007 and 2008 under the authority of the Wellton-Mohawk Transfer Act, Pub. L. No. 106-221, 114 Stat. 351 (2000).

- Transfer of title of the Palo Verde Diversion Dam to the Palo Verde Irrigation District occurred in 2008 under the authority of the Act of August 31, 1954, Pub. L. No. 83-752, 68 Stat. 1045 (1954).

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CHAPTER 6: LOWER BASIN WATER ENTITLEMENTS

Introduction

The apportionment of Colorado River water for use in the Lower Basin in the Lower Division States of Arizona, California, and Nevada is governed by the Boulder Canyon Project Act, Public Law (Pub. L.) No. 70-642, 45 Stat. 1057 (1928) (BCPA) and by the framework established under the United States Supreme Court's 1963 Opinion and 1964 Decree in *Arizona* v. *California*. The 1964 Decree was incorporated in 2006 into a final consolidated decree in *Arizona* v. *California*, 547 U.S. 150 (2006) (Consolidated Decree).

Colorado River water is apportioned for use within the Lower Division States by the Secretary of the Interior (Secretary), in accordance with the BCPA and the Consolidated Decree. The legal framework governing apportionments for the Lower Division States is discussed in detail in *Updating the Hoover Dam Documents 1978*, Chapter I.

The State of Arizona's apportionment is further governed by the Contract for Delivery of Water between the United States and the State of Arizona, acting through its Colorado River Commission, dated February 9, 1944.

The State of California's apportionment is further governed by *General Regulations for Contracts for the Storage of Water in Boulder Canyon Reservoir, Boulder Canyon Project, and the Delivery Thereof*, adopted by the Secretary on September 28, 1931, which incorporate a priority system agreed to by seven California water agencies in an August 18, 1931, agreement (Seven-Party Agreement) discussed later in this chapter. These priorities are further incorporated into the water delivery contracts entered into between the Secretary and California water agencies pursuant to the BCPA.

The State of Nevada's apportionment was first governed by the Contract for Delivery of Water between the United States and the State of Nevada and its Colorado River Commission, dated March 30, 1942, and the Supplemental Contract for Delivery of Water between the United States and the State of Nevada and its Colorado River Commission, dated January 3, 1944. These contracts were later amended, supplemented, and superseded as discussed in this chapter.

Water within each State's apportionment is allocated for beneficial use to water users within the respective State. An allocation of Colorado River water is commonly referred to as a water entitlement, with the authority for the entitlement found in either the Consolidated Decree, a water delivery contract with the Secretary under Section 5 of the BCPA, or a reservation of water by the Secretary.

Early rights, known as present perfected rights or perfected rights, to the use of Colorado River water in the Lower Division States are recognized in the Consolidated Decree. Entitlements created prior to 1979 are addressed in *The Hoover Dam Documents 1948*, Chapters X and XI, and in *Updating the Hoover Dam Documents 1978*, Chapter II, with Chapter X of the latter volume addressing the determination of present perfected rights in proceedings before the United States Supreme Court in *Arizona* v. *California*.

This chapter discusses entitlements created, transferred, or assigned in the Lower Division States during the period from 1979 through 2008. Major entitlement actions are discussed first, followed by a discussion of factors affecting the administration of water entitlements. The chapter concludes with a comprehensive listing of contract actions for this period, which includes a discussion of the priority system used for the delivery of Colorado River water within each Lower Division State.

Native American entitlements recognized in the Consolidated Decree in *Arizona* v. *California* are discussed in Chapter 11. Contract actions relating to Native American water rights settlements are discussed in Chapter 10. Other types of contracts entered into under Federal reclamation law, such as those providing for repayment of project costs, for transfer of operation, maintenance, and replacement of facilities, or for transfer of title, are discussed in Chapter 5.

Entitlement Actions in the State of Arizona

Yuma County Water Users' Association Water Conversion Contract

Colorado River entitlements in the Valley Division of the Yuma Project were initially obtained for irrigation uses under water right applications submitted by landowners to the Secretary in accordance with early Federal reclamation law and then executed and recorded by the Secretary. Colorado River water is delivered to Valley Division entitlement holders through project facilities owned by the United States and operated by the Yuma County Water Users' Association (YCWUA). Over time, an increasing number of Valley Division entitlement holders within the YCWUA service area have desired to convert irrigation use entitlements to domestic use.

On August 24, 1996, the Supplementary Contract To Provide for the Delivery of Converted Water To the Lands In the Valley Division of the Yuma Project, designated as Supplementary Contract to Contract No. I76r-671 and Contract No. 14-06-300-621, was entered into between the United States and YCWUA. This contract allows for the voluntary irrevocable conversion of individual water entitlements within the YCWUA service area in the Valley Division from irrigation use to domestic use, with the consent of YCWUA and the entitlement holder.

As a condition of the election to convert a water entitlement to domestic use, an entitlement holder must irrevocably appoint the YCWUA as delivery agent for the converted water. The YCWUA may either deliver the water or appoint an agent to deliver the water. The City of Yuma serves as YCWUA's delivery agent in the northern portion of the Valley Division and pays the annual fees assessed by YCWUA for those landowners who elect to convert their water entitlement.

Final Administrative Determination of Appropriate and Equitable Shares of the Colorado River Water Entitlement for the Yuma Mesa Division of the Gila Project

The Gila Project, authorized for construction under a finding of feasibility approved by the President on June 21, 1937, was established to reclaim and irrigate lands near Yuma, Arizona. See *The Hoover Dam Documents 1948*, Appendix 1211. The Act of July 30, 1947, Pub. L. No. 80-272, 61 Stat. 628 (1947) (Gila Project Reauthorization Act), changed the project boundaries, fixed the maximum acreage, and created the Yuma Mesa Division (Division) and the Wellton-Mohawk Division. The Division consists of three units: the North Gila Valley Unit, the South Gila Valley Unit, and the Mesa Unit. Each unit is represented by a water contracting entity, specifically, the North Gila Valley Irrigation District (NGVID) for the North Gila Valley Unit, the Yuma Irrigation District (YID) for the South Gila Valley Unit, and the Yuma Mesa Irrigation and Drainage District (YMIDD) for the Mesa Unit.

The Gila Project Reauthorization Act limited the Division's irrigated acreage to approximately 40,000 acres (25,000 in the Mesa Unit and a combined 15,000 in the North and South Gila Valley Units) or such number of acres as can be adequately irrigated by the beneficial consumptive use of no more than 300,000 acre-feet of Colorado River water annually. This allowed for the irrigation of up to 25,000 acres within YMIDD and up to a combined total of 15,000 acres within NGVID and YID.

Congress further reduced the Division's consumptive use and acreage limitations in the Act of October 19, 1984, Pub. L. No. 98-530, 98 Stat. 2698 (1984) (Ak Chin Settlement Act). The Ak-Chin Settlement Act reduced the Division's annual consumptive-use water entitlement from up to 300,000 acre-feet to no more than 250,000 acre-feet and provided that the water shall not be used to irrigate more than 37,187 acres of land in the Division, specifically 6,587 acres in NGVID, 10,600 acres in YID, and 20,000 acres in YMIDD. The Ak-Chin Settlement Act also included a provision that additional land within YMIDD may be irrigated if there is a corresponding reduction in the irrigated acreage in NGVID and YID so that at no time are more than 37,187 acres being irrigated in the Division.

To implement the provisions of the Ak-Chin Settlement Act, a Colorado River water delivery contract was entered into with each district within the Division

in 1985, supplementing and amending earlier contracts. Each water delivery contract contains the following language:

> Provided, however, That the quantities of water which the District shall be entitled to receive under this contract shall not, in any event, exceed an appropriate and equitable share of the quantities of water available for the Division, all as determined by the Secretary.

The contracts also provide for the United States to determine return flow credits for the Division.

Following passage of the Ak-Chin Settlement Act and execution of the implementing water delivery contracts, difficulties were encountered regarding administration of the jointly held Division water entitlement with respect to the amount of water each district might put to beneficial use. On May 22, 1997, the NGVID and YID requested a separation of the jointly held water entitlement, with YID renewing the request by letter dated December 3, 1997.

The Bureau of Reclamation (Reclamation) engaged in extensive consultation with NGVID, YID, YMIDD, and the Arizona Department of Water Resources. On December 27, 2001, the Regional Director for the Lower Colorado Region issued a Final Administrative Determination of Appropriate and Equitable Shares of the Yuma Mesa Division's Colorado River Water Entitlement for the North Gila Valley Unit, the South Gila Valley Unit, and the Mesa Unit of the Gila Project in Arizona (Administrative Determination).

The Administrative Determination, in accordance with the proviso in the water delivery contracts, established the appropriate and equitable share for each district of the quantity of water available to the Division under the Division's 250,000 acre-foot annual Colorado River consumptive use entitlement. Each district's share of the Division's entitlement was determined to consist of: (1) a domestic use apportionment; (2) an irrigation use apportionment based on crop consumptive-use requirements; and (3) a conditional supplemental use water apportionment reflecting the high permeability of the irrigated acreage soil and determined based on the amount of return flow to the river. Each district's share of the Division's water entitlement is shown in Table 6-1.

Table 6-1. Summary of Each District's Share of the Yuma Mesa Division Water Entitlement[1]

Entity	Domestic	Irrigation	Supplemental	Total
NGVID	2,500	29,650	9,053	41,203
YID	5,000	47,700	14,578	67,278
YMIDD	10,000	104,000	27,519	141,519
Total	**17,500**	**181,350**	**51,150**	**250,000**

[1]All measures in acre-feet.

The Administrative Determination also included criteria for: (1) approving increases in domestic use water apportionments; (2) allowing other districts within the Division to utilize a district's unused apportionment for any given year; (3) dealing with use of water by any district in excess of its apportionment; (4) approving water recovery plans to develop return flow credit; and (5) accounting for water use within the Division, including return flow accounting.

Entitlement Actions in the State of California

Entitlement actions relating to the Lower Colorado Water Supply Project are discussed in Chapter 5.

Development of Agreements Relating to Quantification of Shared Priorities

The State of California is entitled to the consumptive use of up to 4,400,000 acre-feet per year of Colorado River water within the Lower Basin apportionment of 7,500,000 acre-feet per year when the Secretary determines through the Annual Operating Plan (AOP) that a Normal Condition of water availability exists. See Chapter 1. California is further entitled to additional water during years in which the Secretary determines the existence of a Surplus Condition or makes available to California water apportioned to, but not used by, the States of Arizona and Nevada.

As mentioned earlier, California's apportionment is governed by the Consolidated Decree in *Arizona* v. *California*, which sets forth present perfected rights, and by the *General Regulations for Contracts for the Storage of Water in Boulder Canyon Reservoir, Boulder Canyon Project, and the Delivery Thereof*, adopted by the Secretary on September 28, 1931, which incorporate a priority system agreed to by seven California water agencies in an August 18, 1931, agreement (Seven-Party Agreement). The Seven-Party Agreement is discussed in *The Hoover Dam Power and Water Contracts and Related Data* (1933), Part I(8), *The Hoover Dam Documents 1948*, Chapter X, and *Updating the Hoover Dam Documents 1978*, Chapters I and II. The priorities of the Seven-Party Agreement are incorporated into contracts entered into between the Secretary and California water agencies pursuant to the authority of the BCPA.

The parties to the Seven-Party Agreement are the Palo Verde Irrigation District (PVID), Imperial Irrigation District (IID), Coachella Valley County Water District (now Coachella Valley Water District or CVWD), The Metropolitan Water District of Southern California (MWD), City of Los Angeles, City of San Diego, and County of San Diego. When PVID executed the agreement, PVID reserved the right to contract with the Secretary either in accordance with the allocation in the agreement or, in the event that such allocation were superseded by a final judicial determination, then according to that determination,

with the proviso that priorities four and five not be disturbed. See *The Hoover Dam Power and Water Contracts and Related Data 1933*, Part I(8). The PVID reservation was also incorporated into the 1931 regulations and into the contracts between the Secretary and the California water agencies.

The priorities established by the Seven-Party Agreement and adopted by the Secretary in the 1931 regulations are illustrated in Table 6-2, originally published in *Updating the Hoover Dam Documents 1978,* Chapter I.

Table 6-2. California Priority System

Priority	Description	Acre-feet Annually
1	Palo Verde Irrigation District - gross area of 104,500 acres	
2	Yuma Project (Reservation Division) - not exceeding a gross area of 25,000 acres	3,850,000
3(a)	Imperial Irrigation District and lands in Imperial and Coachella Valleys to be served by AAC	
3(b)	Palo Verde Irrigation District - 16,000 acres of mesa lands	
4	Metropolitan Water District and/or City of Los Angeles and/or others on coastal plain	550,000
5(a)	Metropolitan Water District and/or City of Los Angeles and/or others on coastal plain	550,000
5(b)	City and/or County of San Diego	112,000
6(a)	Imperial Irrigation District and lands in Imperial and Coachella Valley	300,000
6(b)	Palo Verde Irrigation District - 16,000 acres of mesa lands	
	Total	5,362,000

The first three priorities in the Seven-Party Agreement are for agricultural uses, in an amount collectively not to exceed 3,850,000 acre-feet of water per year of consumptive use. The first three priorities are not, however, individually quantified in terms of allowable consumptive use. The unquantified third priority is also a shared priority (among IID, CVWD, and PVID – for mesa lands), as is the sixth priority.

The priority system adopted by the Secretary from the Seven-Party Agreement contains a seventh priority for all remaining Colorado River water available for

use in California. This priority is for agricultural use in the Colorado River Basin as designated on Reclamation Map No. 23000.

As the result of an agreement reached in connection with the construction of the Coachella Canal as a branch of the All-American Canal, CVWD's entitlements to water in the third and sixth priorities for lands in the Coachella Valley were subordinated to those of IID. The resulting mix of unquantified, shared, and subordinated agricultural entitlements complicated efforts in ensuing decades to conserve agricultural uses of water for transfer to southern California's coastal areas to meet growing demand. See *The Hoover Dam Documents 1948*, Chapter XI.

From the early 1950s, California diverted more Colorado River water than its Normal Year[1] apportionment of up to 4,400,000 acre-feet. For much of that period, California had access to unused Arizona and Nevada apportionment made available to California by the Secretary under Article II(B)(6) of the 1964 Decree in *Arizona* v. *California*. California also utilized surplus water made available by Secretarial determination under Article II(B)(2) of the 1964 Decree.

Population increases in coastal California in the last quarter of the 20th century led to a dependence on surplus Colorado River water and unused apportionment from Arizona and Nevada. Population increases in Nevada and Arizona, as well as the completion of the Robert B. Griffith Water Project in the 1980s and the Central Arizona Project (CAP) in the 1990s, led to an increased utilization of Colorado River water in these States and reduced the amount of unused apportionment that the Secretary might otherwise have made available to California. Periods of drought in the late 20th and early 21st centuries reduced the likelihood of further surplus determinations. These factors combined to put pressure on California water agencies to develop a plan to reduce California's overdependence on Colorado River water supplies. The implementation of conservation measures by agricultural users, with the transfer of the conserved water to urban users, became one means to reduce this overdependence.

On December 22, 1988, IID and MWD entered into the Agreement for the Implementation of a Water Conservation Program and Use of Conserved Water (Water Conservation Agreement). IID agreed to adopt measures to conserve a portion of the Colorado River water to which IID was entitled under its water delivery contract with the Secretary, with the conserved water to be made available to MWD during the term of the agreement. MWD agreed to pay the costs of the conservation measures. The Water Conservation Agreement provided that in any year in which less than 3.85 million acre-feet were made available to the first three priorities in California, IID might elect to not make the conserved water available to MWD, with MWD relieved of the cost obligation for that year. Both parties desired Reclamation's approval of the agreement.

[1] See Chapter 1 for discussion of the Secretary's determination of a Shortage, Normal, or Surplus Condition under the Consolidated Decree in *Arizona* v. *California*.

By letter dated January 17, 1989, Reclamation addressed the need to fit the delivery requirements of the Water Conservation Agreement within the existing contractual and legal framework:

> [Reclamation is] prepared to operate the river in a manner that will permit us to deliver the water to MWD at its Lake Havasu diversion point in an amount equivalent to the water conserved under the Agreement, as long as it can be accomplished within the contractual framework under the Seven Party Agreement and California law. We emphasize, however, that, to the extent the agreement has detrimental impacts on the existing rights of Coachella and Palo Verde, such activity would only be carried out with their concurrence. We encourage you to continue your efforts to obtain their concurrence.

IID and MWD did not initially obtain the concurrence of CVWD and PVID.

CVWD brought suit in the United States District Court for the Southern District of California in a case styled *Coachella Valley Water District* v. *Imperial Irrigation District, et al.*, Case No. 890165B(IEG), alleging that the Water Conservation Agreement was unlawful and void. IID, MWD, PVID, and CVWD later entered into the Approval Agreement, dated December 19, 1989, in which IID agreed to augment the conservation program, and in which MWD agreed to pay for, but not take, a portion of the conserved water under specified circumstances in years in which a reduction in agricultural diversions is required by the Secretary. The Approval Agreement provided formulae to determine in such circumstance the amount of IID's conserved water that MWD would not divert and the amount of water that CVWD and PVID (for its third priority mesa lands) would not divert, that collectively would equate to the required reduction in agricultural diversions. The Approval Agreement provided for MWD's use of the conserved water to be charged to MWD under its existing water delivery contracts with the United States. Both the Conservation Agreement and the Approval Agreement contained provisions addressing the parties' desire to preserve their respective legal positions. In addition, MWD and CVWD entered into the Agreement to Supplement Approval Agreement, also dated December 19, 1989, in which CVWD made certain additional commitments relating to its use of Colorado River water and its rights under the Approval Agreement.

Reclamation requested that the Colorado River Board of California lead discussions among the California water agencies to address issues relating to the Colorado River priority system set forth in the Seven-Party Agreement. In particular, Reclamation sought agreement on a method for assigning responsibility for excess use in order to determine responsibility for payback of overruns. The California agencies did not reach agreement.

In an effort to provide clarity with respect to the administration of California entitlements and to assign responsibility for excess use, Reclamation, by letter dated December 10, 1992, proposed a method to administer the entitlements by

assigning specific amounts of water to the entitlement holders in the first three priorities. The methodology was proposed in order to:

> facilitate voluntary water transfers, water banking programs, improvements in reasonable beneficial use, apportionment use compliance, maximization of California's beneficial use of its Colorado River water apportionment, and drought mitigation management.

The Reclamation proposal was not implemented. For more than a decade following this letter, Reclamation would actively participate with the California water agencies in discussions relating to (and litigation over) an appropriate quantification of the shared priorities. Representatives of the other six Colorado River Basin States were also active participants in many of these discussions.

On April 29, 1998, IID and the San Diego County Water Authority (SDCWA) entered into an Agreement for Transfer of Conserved Water for the purpose of creating and transferring conserved water from IID to SDCWA. IID agreed to adopt measures to conserve a portion of the Colorado River water to which IID was entitled under its water delivery contract with the Secretary, and to transfer this water for a specified period of years to SDCWA.

The IID/SDCWA transfer agreement was met with opposition from CVWD and MWD. The transfer agreement raised issues both in connection with the existing water delivery agreements, which incorporated the priorities of the Seven-Party Agreement, and in connection with the IID water delivery agreement with the Secretary, which provided for use of IID's entitlement "within the boundaries of the District."

Negotiations ensued among representatives of the State of California, IID, CVWD, and MWD, with the direct participation of the United States Department of the Interior. The negotiating teams for the State of California, IID, CVWD, and MWD adopted the Key Terms for Quantification Settlement Among the State of California, IID, CVWD and MWD (Key Terms Agreement), dated October 15, 1999. This agreement became the conceptual framework for the later Federal quantification settlement agreement that allowed the IID/SDCWA transfer to proceed. Although the Key Terms Agreement provided a framework for further negotiation, the parties were not yet able to fully and finally resolve their differences.

On May 11, 2000, the Colorado River Board of California issued California's draft Colorado River Water Use Plan, commonly known as the California 4.4 Plan, proposing a suite of actions that would reduce California's dependency on Colorado River water through water conservation and transfers. The implementation of water conservation measures within farming communities, such as those in the Imperial Valley, and the voluntary transfer of that conserved

water to the coastal areas of southern California were key elements of the plan, as was the lining of certain unlined portions of the All-American and Coachella Canals.

Secretary of the Interior Bruce Babbitt took action to encourage the California water agencies to reach agreement, adopting the Interim Surplus Guidelines (2001 ISG) on January 16, 2001, to be in place for an interim period through 2016. See Chapter 2. The guidelines were designed to provide California with a "soft landing" in the State's efforts to reduce reliance on Colorado River water by increasing the likelihood that surplus water would be made available, contingent on California making sufficient progress to reduce its use of Colorado River water. Under these guidelines, the Secretary would determine that surplus water is available for domestic use (known as a partial or full domestic surplus) if the water surface of Lake Mead were above specific elevations, thus providing additional water to California above the Normal Condition apportionment of 4,400,000 acre-feet, subject to certain conditions.

The specific conditions included a provision in the 2001 ISG that linked any Secretarial determination of a partial or full domestic surplus to the adoption of a Quantification Settlement Agreement (QSA) among IID, CVWD, MWD, and SDCWA by December 31, 2002, and thereafter on a gradual reduction in agricultural use of Colorado River water in California. If the conditions of the 2001 ISG were not met, even if the elevation of Lake Mead would otherwise justify the determination of a partial or full domestic surplus under the 2001 ISG, the Secretary would suspend such determinations, thereby reducing the amount of water otherwise available to California.

The United States Department of the Interior continued to play an active role, working with California water agencies to develop a QSA to quantify shared priorities to allow the implementation of the IID/SDCWA transfer agreement and to secure the benefits of the 2001 ISG for California. Although consensus was reached on many issues and the draft agreements continued to evolve, a QSA was not adopted by the California parties by the ISG deadline of December 31, 2002.

In the absence of a QSA, Secretary of the Interior Gale A. Norton suspended application of the domestic surplus provisions of the 2001 ISG, determining California's 2003 Colorado River water allocation to be limited to a Normal Condition apportionment, up to 4,400,000 acre-feet. For context, in 2002 California used 5,275,607 acre-feet. The limitation to no more than 4,400,000 acre-feet for 2003 represented a reduction of 875,607 acre-feet.

With California limited to no more than the consumptive use of 4,400,000 acre-feet of Colorado River water in 2003, Reclamation focused attention on the requirement of Federal law and contracts that Colorado River water be put to reasonable and beneficial use. Heightened scrutiny under 43 CFR Part 417 was brought to bear on water use practices to ensure that appropriate standards of

reasonable and beneficial use were met. IID filed suit against the Secretary in *Imperial Irrigation District* v. *United States*, No. 03-CV-0069W (JFS) (S.D. Cal. filed Jan. 10, 2003), relating to determinations in connection with IID. By order dated April 16, 2003, and filed April 17, 2003, the United States District Court remanded the case to the United States Department of the Interior for a *de novo* Part 417 review of IID's Colorado River water use.

Ultimately, in October 2003, the goals of the California 4.4 Plan were achieved and a framework was created to satisfy the conditions of the 2001 ISG through a balancing of agricultural, urban, environmental, tribal, State, and Federal interests, accomplished through the execution of numerous contracts, including the Colorado River Water Delivery Agreement: Federal Quantification Settlement Agreement (CRWDA or Federal QSA), a stipulated dismissal of the IID lawsuit, and the adoption of a Federal accounting policy relating to overruns. In addition to agreements executed by the Federal government, there were numerous contracts and agreements reached among the participating State entities.

Specifically, Secretary Norton signed the *Record of Decision, Colorado River Water Delivery Agreement, Implementation Agreement, Inadvertent Overrun and Payback Policy, and Related Federal Actions, Final Environmental Impact Statement* (2003 ROD), dated October 10, 2003, published in the *Federal Register* at 69 Fed. Reg. 12202 (March 15, 2004), which included the Inadvertent Overrun and Payback Policy (IOPP) and the CRWDA (which encompassed a Federal quantification settlement agreement). The IOPP, discussed later in this chapter, provides flexibility in Colorado River management. The Secretary's adoption of the IOPP was, in part, to address concerns of agricultural districts, in particular the concerns of IID, that the water transfers might limit flexibility to meet often unpredictable agricultural water demand by reducing available water supplies.

After signing the 2003 ROD, the Secretary executed the following contracts:

- The Colorado River Water Delivery Agreement: Federal Quantification Settlement Agreement (CRWDA or Federal QSA), dated October 10, 2003, described in detail below, which satisfied one of the conditions of the 2001 ISG and helped to implement the IID transfer to SDCWA

- The Allocation Agreement Among the United States of America, The Metropolitan Water District of Southern California, Coachella Valley Water District, Imperial Irrigation District, San Diego County Water Authority, and the La Jolla, Pala, Pauma, Rincon, and San Pasqual Bands of Mission Indians, the San Luis Rey River Indian Water Authority, the City of Escondido, and Vista Irrigation District, dated October 10, 2003, which allocated water conserved from the lining of the All-American and Coachella Canals

- The Agreement Relating to Supplemental Water Among The Metropolitan Water District of Southern California, the San Luis Rey Settlement Parties, and the United States, dated October 10, 2003, which addressed the delivery or exchange of water made available for the San Luis Rey Indian Water Settlement under the CRWDA and the Allocation Agreement

- The Agreement for the Conveyance of Water Among the San Diego County Water Authority, the San Luis Rey Settlement Parties, and the United States, dated October 10, 2003, which addressed the conveyance of water made available for the San Luis Rey Indian Water Settlement under the CRWDA and the Allocation Agreement

Also on October 10, 2003, Reclamation executed the Conservation Agreement among the Bureau of Reclamation, Imperial Irrigation District, Coachella Valley Water District, and the San Diego County Water Authority and executed the Amendment to Amendatory Contract Between the United States of America and Coachella Valley Water District for Replacing a Portion of the Coachella Canal, Amendatory Contract No. 8-07-30-W0007, Amendment No. 2 to conform an amendatory canal replacement contract to Section 210 of the Act of November 17, 1988, Pub. L. No. 100-675, 102 Stat. 4000 (1988).

As of December 31, 2008, State water agencies were pursuing validation of many of the QSA agreements under California State law in multiple contested proceedings consolidated in the Superior Court of the State of California, County of Sacramento, as “In Re: QSA Cases.”

The CRWDA, the Allocation Agreement, and the IOPP are each further discussed later in this chapter.

Colorado River Water Delivery Agreement: Federal Quantification Settlement Agreement

The CRWDA, dated October 10, 2003, was entered into among the Secretary, IID, CVWD, MWD, and the SDCWA and is the Federal QSA, which was required as a condition of the ISG (discussed earlier in this chapter). The history of the development of the CRWDA is discussed immediately above in this chapter. The California water agencies also entered into a State QSA, encompassing numerous contracts and agreements to which the Secretary is not a party.

The CRWDA assists California in meeting the goals of the California 4.4 Plan by quantifying for a specific term of years the deliveries under certain Colorado River entitlements within shared priorities, so that transfers may occur. In particular, for the term of the CRWDA, quantification of Priority 3(a) was effected through caps on water deliveries to IID (consumptive use of 3.1 million acre-feet per year) and CVWD (consumptive use of 330,000 acre-feet

per year). Quantification of Priority 6(a) was effected through quantifying consumptive use amounts to be made available in order of priority to MWD (38,000 acre-feet per year), IID (63,000 acre-feet per year), and CVWD (119,000 acre-feet per year) with the provision that any additional water available to Priority 6(a) be delivered under IID's and CVWD's existing water delivery contracts with the Secretary. The CRWDA provides that the underlying water delivery contracts with the Secretary remain in full force and effect.

The CRWDA helps to accomplish a series of voluntary Colorado River water transfers by committing the Secretary to deliver a portion of IID's and CVWD's entitlements, as quantified by the CRWDA, to transfer recipients which variously include CVWD, IID[2], MWD, and SDCWA. These transfers assist California in reducing its dependence on Colorado River water through, for example, the implementation of conservation measures within IID which allows for the transfer of the conserved water from IID to other entities in accordance with the terms of the CRWDA. Exhibits A and B to the CRWDA detail the manner in which IID and CVWD entitlements will be delivered by the Secretary during the term of the CRWDA.

The CRWDA also provides a source of water to effect a San Luis Rey Indian water rights settlement. The CRWDA, in particular Exhibits A and B to the CRWDA, recognizes that certain water otherwise available to IID and CVWD under their respective entitlements will be delivered for the benefit of the San Luis Rey Indian water rights settlement parties. The CRWDA also recognizes reductions to IID and CVWD for the benefit of Indian and miscellaneous Present Perfected Right (PPR) holders.

The CRWDA does not limit the Secretary's authority under Article II(B)(3) of the Consolidated Decree in *Arizona* v. *California* to allocate water in times of shortage. If, however, less than 3,850,000 acre-feet of Colorado River water is made available to entities in California under Priorities 1 through 3 during the year, the Secretary agrees in the CRWDA to deliver any water made available to IID and CVWD in the manner provided for in any shortage sharing provisions agreed upon by IID, CVWD, MWD, and SDCWA prior to or concurrent with the execution of the CRWDA.

The CRWDA satisfied the requirement of the 2001 ISG that a QSA be adopted as a prerequisite to the interim surplus determinations by the Secretary in the ISG. The CRWDA further provided an enforcement mechanism to achieve the benchmarks set forth in the 2001 ISG (which were later subsumed into the 2007 Interim Guidelines, as discussed in Chapter 2) for the reduction of California's agricultural use of Colorado River water. The CRWDA provides for

[2] IID's exercise of call rights on canal lining conserved water is in the nature of a transfer in that the exercise of these rights allows IID to use canal lining conserved water, but requires IID to pay a pro rata share of the costs of the canal lining conservation project.

consequences in the event the transfers set forth in the exhibits to the CRWDA do not take place and the benchmarks are not met:

- For a district that does not implement transfers on the transfer schedule for that district set forth in Exhibit B to the CRWDA, the IOPP adopted by the Secretary in 2003 will be suspended for that district and not reinstated until the district is again in compliance.

- Certain overruns must be repaid in a set period.

- MWD will not be permitted to order certain water that may otherwise be available to MWD under the 2001 ISG.

The CRWDA further provides that if the transfers set forth in the exhibits to the CRWDA do not take place and the benchmarks are not met, the Secretary anticipates that a further review of IID, CVWD, and MWD's reasonable and beneficial use of Colorado River water will be required under 43 CFR Part 417.

The CRWDA has a limited scope. The CRWDA provides that Priorities 1, 2, 3(b), 6(b), and 7 of current Section 5 contracts for the delivery of Colorado River water in the State of California and Indian and miscellaneous PPRs within the State of California and other existing surplus water contracts are not affected by the CRWDA.

The CRWDA has a limited term. The agreement terminates on December 31, 2037, if the IID/SDCWA transfer program terminates in that year, or, if not, terminates on December 31, 2047, unless extended by agreement of all parties to a termination date of December 31, 2077. Although the CRWDA may terminate, the CRWDA expressly recognizes that under Federal law, including the Packard Amendment (discussed in Chapter 5 and later in this chapter), the Secretary's commitment in the CRWDA to deliver water for the benefit of the San Luis Rey Indian water rights settlement parties does not.

Allocation Agreement

Colorado River water is delivered to IID through the All-American Canal and to CVWD through the Coachella Canal. The All-American Canal Lining Project and the Coachella Canal Lining Project, authorized by Title II of the Act of November 17, 1988, Pub. L. No. 100-675, 102 Stat. 4000 (1988) (1988 Act), yield conserved water, which is the subject of both the Allocation Agreement and the CRWDA. The canal lining projects are discussed in Chapter 5.

The Allocation Agreement, dated October 10, 2003, provides for the allocation of water determined by the Secretary to be available for allocation from these lining projects and specifies the conditions under which the conserved water will be

delivered. The CRWDA incorporates transfers of the water conserved from the lining of the All-American Canal and the Coachella Canal and reflects these transfers in its Exhibit B.

The Allocation Agreement provides a source of water for a water settlement among the San Luis Rey Indian water rights settlement parties and the United States. The Allocation Agreement fulfills the congressional directive in Section 211 of the Act of October 27, 2000, Pub. L. No. 106-377, Appendix B, Title II, 114 Stat. 1141A-70 (2000) (Packard Amendment), which amends Title I of the 1988 Act and requires that the Secretary permanently furnish annually 16,000 acre-feet of the water conserved by the canal lining projects for the benefit of the San Luis Rey Indian water rights settlement parties. (Title I is the San Luis Rey Indian Water Rights Settlement Act. The Packard Amendment is discussed in Chapters 5 and 13.) The 1988 Act conditions the effectiveness of the statutory provision relating to the obligation to deliver this water, in part, on the execution of a water settlement agreement among the San Luis Rey Indian water rights settlement parties which, as of December 31, 2008, had not occurred. Until such time as this and other conditions are met, the water which would otherwise be available for the benefit of the San Luis Rey Indian water rights settlement parties is delivered to MWD, subject to IID call rights as specified in the Allocation Agreement. See Chapter 10 for a discussion of the San Luis Rey Indian water rights settlement negotiations.

The Allocation Agreement further provides that all water available for allocation from the canal lining projects and not allocated for the benefit of the San Luis Rey Indian water rights settlement parties is to be delivered to SDCWA, subject to provisions in the Allocation Agreement relating to shortages and IID call rights. This includes water from the Coachella Canal Lining Project dedicated to, but not needed for, mitigation purposes in any given year.

The Allocation Agreement has a 55-year term with an automatic renewal for an additional 55 years, which will be further extended as necessary to ensure SDCWA receives its full benefits under the Allocation Agreement. Although the Allocation Agreement may terminate, the provisions relating to the Secretary's commitment to deliver water for the benefit of the San Luis Rey Indian water rights settlement parties do not.

Temporary Re-regulation of Excess Flows

In the latter part of 2004 and the early part of 2005, in response to heavy precipitation occurring in the Lower Basin, Reclamation released water from Lake Havasu greater than what was necessary to meet downstream demands. Also, as a result of this precipitation, water ordered by entitlement holders and released from Hoover Dam was not diverted. In an effort to prevent these releases from being lost to beneficial use within the United States as excess flows to the Northerly International Boundary with the United Mexican States (Mexico)

(see Chapter 4), Reclamation requested that IID and MWD capture a portion of this water to allow for the temporary re-regulation of these flows.

Reclamation entered into a Letter Agreement for Temporary Re-regulation of Excess Colorado River Flows with IID, dated June 13, 2006. The letter documented the agreement that IID capture and convey certain quantities of Colorado River water to the Salton Sea in 2004 (15,880 acre-feet, stated as a consumptive use amount), 2005 (21,476 acre-feet, stated as a consumptive use amount), and 2006 (depending on hydrology, in amounts as requested by Reclamation and agreed to by IID). Reclamation did not request the temporary re-regulation of water in 2006. The agreement provided that during the year of capture, the water would not be accounted for as a consumptive use. The agreement provided an accounting mechanism to permit the water subject to temporary re-regulation to be restored to Lake Mead in future years.

Reclamation entered into a Letter Agreement for Temporary Re-regulation of Excess Colorado River Flows with MWD, dated June 14, 2006. The letter documented the agreement for MWD to capture and convey certain quantities of Colorado River water to MWD storage facilities in 2005 (21,649 acre-feet, stated as a consumptive use amount) and 2006 (depending on hydrology, in amounts as requested by Reclamation and agreed to by MWD). Reclamation did not request the temporary re-regulation of water in 2006. The agreement provided that during the year of capture, the water would not be accounted for as a consumptive use. The agreement provided an accounting mechanism to permit the water subject to temporary re-regulation to be restored to Lake Mead in future years.

Implementation of the provisions contained in the letter agreements for the temporary re-regulation of excess Colorado River flows did not increase or decrease IID or MWD's entitlements.

Yuma Island

The "Yuma Island" is an area in southern California and in southern Arizona adjacent to the Colorado River near the Mexican border. The Yuma Island is bounded on the south and east by the present channel of the Colorado River and on the north and west by an abandoned levee, commonly known as the Reservation Levee, constructed on the west and north banks of the old Colorado River channel prior to the avulsion in 1920. In 1966, an interstate boundary compact divided the Yuma Island lands between the State of California and the State of Arizona with a "stairstep" boundary. Certain lands which had previously been in Arizona were thereafter recognized as part of California.

As of December 31, 2008, there was a dispute as to whether Colorado River water use on a portion of the Yuma Island lands in California should be accounted for as part of the Yuma Project's entitlement under Priority 2 of the Seven-Party Agreement priorities incorporated into the Colorado River water delivery contracts for California.

The Secretary is required by the Settlement Agreement in *Arizona* v. *California* by and among the Quechan Indian Tribe of the Fort Yuma Indian Reservation, the United States of America, The Metropolitan Water District of Southern California, Coachella Valley Water District, and the State of California, dated February 14, 2005, to make a determination with respect to whether consumptive use of Colorado River water on the Yuma Island should be charged to Priority 2.

Entitlement Actions in the State of Nevada

State of Nevada and Colorado River Commission of Nevada

From 1942 until the mid-1990s, the Colorado River Commission of Nevada (CRCN), acting on behalf of the State of Nevada, was a party to contracts entered into by the Secretary for the delivery of Colorado River water for use within the State of Nevada.

The Contract for Delivery of Water, Contract No. Ilr-1399, dated March 30, 1942, between the United States of America and the State of Nevada, acting through CRCN, as amended by the Supplemental Contract for Delivery of Water, dated January 3, 1944, provided that:

> [T]he United States shall, from storage in Lake Mead, deliver to the State each year at a point or points to be selected by the State and approved by the Secretary, so much water, including all other waters diverted for use within the State of Nevada from the Colorado River system, as may be necessary to supply the State a total quantity not to exceed Three Hundred Thousand (300,000) acre-feet each calendar year.

During the period from 1979 through 2008, the United States entered into several contracts with the State of Nevada, acting through CRCN, amending, supplementing, and superseding the 1942 water delivery contract, as amended in 1944.

On November 12, 1981, the United States and the State of Nevada, acting through CRCN, entered into the Amendatory Contract with the State of Nevada for Delivery of Colorado River Water, Contract No. 1-07-30-W0022. The 1981 amendment substituted "the Colorado River mainstream" in place of "the Colorado River system" in the above-quoted language. The 1981 amendment also provided that the State may enter into subcontracts with other entities for small amounts of Colorado River water (not to exceed 300 acre-feet per year) provided that these subcontracts were for domestic purposes and did not in total exceed 4,000 acre-feet per year.

In addition to other modifications to the earlier contract, the 1981 amendment further provided for the delivery to the State of Nevada of "4 percent of any excess or surplus waters available to the States of Arizona, California, and Nevada, to the extent that such excess or surplus waters are available for use, as

determined by the Secretary." The Secretary makes such a determination under Article II(B)(2) of the 1964 Decree in *Arizona* v. *California* which provides that:

> (2) If sufficient mainstream water is available for release, as determined by the Secretary of the Interior, to satisfy annual consumptive use in the aforesaid States in excess of 7,500,000 acre-feet, such excess consumptive use is surplus, and 50% thereof shall be apportioned for use in Arizona and 50% for use in California; provided, however, that if the United States so contracts with Nevada, then 46% of such surplus shall be apportioned for use in Arizona and 4% for use in Nevada.

The Amendatory and Supplementary Contract With the State of Nevada For Delivery of Colorado River Water, Contract No. 4-07-30-W0041, was entered into on November 8, 1983, between the United States and the State of Nevada acting through CRCN. This contract superseded and replaced the January 3, 1944, and the November 12, 1981, amendments, and amended the March 30, 1942, contract, in part, to provide for the delivery of up to 300,000 acre-feet per year of water from the Colorado River mainstream for use in Nevada, to provide for the delivery of 4 percent of any excess or surplus waters as determined by the Secretary, and to provide that the State of Nevada may subcontract with other entities for the delivery of up to 10,000 acre-feet of water per year.

The Amendatory, Supplementary, and Restating Contract With the State of Nevada for the Delivery of Colorado River Water, Contract No. 4-07-30-W0041, Amendment No. 1, was entered into on March 2, 1992, between the United States and the State of Nevada acting through CRCN. This contract superseded and replaced in its entirety the 1942 contract, as amended by the 1983 amendment, and deleted provisions allowing the State of Nevada to subcontract for the delivery of Colorado River water.

The United States and the State of Nevada acting through CRCN, also on March 2, 1992, entered into the Amendatory, Supplementary, and Restating Contract Between the United States and the State of Nevada For the Delivery of Water and Repayment of Project Works, Contract No. 7-07-30-W0004, Amendment No. 1, relating to the Robert B. Griffith Water Project. This contract superseded and replaced in its entirety Contract No. 7-07-30-W0004, dated August 4, 1977. Contract No. 7-07-30-W0004, Amendment No. 1, is a water delivery and repayment contract which provides for an annual diversion not to exceed 299,000 acre-feet of Colorado River water through the Robert B. Griffith Water Project plus system losses not to exceed 9,000 acre-feet per year. Any water delivered under this contract reduces the delivery obligation of the United States under Contract No. 4-07-30-W0041, Amendment No.1 discussed above. The 1977 contract is discussed in *Updating the Hoover Dam Documents 1978*, Chapter II.

On December 29, 1995, Contract No. 7-07-30-W0004, Amendment No. 1 was assigned by Assignment No. 1 from the State of Nevada acting through CRCN to the Southern Nevada Water Authority (SNWA). This assignment was with the written approval of the United States.

Southern Nevada Water Authority

During the 1990s, SNWA became the major Colorado River water delivery agency in Nevada as a result of water delivery contracts entered into with the United States and as a result of the assignment of a water delivery contract from the CRCN.

The Contract With the Southern Nevada Water Authority, Nevada, for the Delivery of Colorado River Water, Contract No. 2-07-30-W0266, dated March 2, 1992, was entered into by the United States, the State of Nevada acting through the Colorado River Commission of Nevada, and SNWA. Under this contract, SNWA received an entitlement to the delivery of Colorado River water that, subject to certain exceptions, includes:

- The uncommitted remainder of the State of Nevada's 300,000-acre-foot apportionment
- Any Colorado River water becoming available by reason of the reduction, expiration, or termination of an entitlement for use within Nevada
- Any surplus water apportioned to Nevada
- Any unused Nevada apportionment
- Any unused Arizona or California apportionment made available to Nevada by the Secretary

The 1992 contract was amended and restated by Contract No. 2-07-30-W0266, Amendment No. 1 on November 17, 1994. This amended and restated contract recognized the assignment of up to 14,550 acre-feet per year of water to SNWA from a 1969 Colorado River water delivery agreement between the United States and Basic Management, Inc., and preserved the priority date of the assigned entitlement. The assignment from Basic Management, Inc. to SNWA was by separate agreement also dated November 17, 1994.

As discussed earlier in this chapter, on December 29, 1995, the March 2, 1992, water delivery and repayment contract for the Robert B. Griffith Water Project was assigned to SNWA. The assigned contract provides for an annual diversion not to exceed 299,000 acre-feet of Colorado River water through the Robert B. Griffith Water Project plus system losses not to exceed 9,000 acre-feet per year.

Factors Affecting Current and Future Contract Administration

43 CFR Part 414: Offstream Storage of Colorado River Water and Development and Release of Intentionally Created Unused Apportionment in the Lower Division States

On November 1, 1999, the Secretary adopted Federal regulations, codified at 43 CFR Part 414, Offstream Storage of Colorado River Water and Development and Release of Intentionally Created Unused Apportionment in the Lower Division States, to create a procedural framework for Colorado River entitlement holders to enter into interstate transactions within the legal framework established by the 1964 Decree in *Arizona* v. *California*, now incorporated into the 2006 Consolidated Decree. The primary mechanism for these transactions is a Storage and Interstate Release Agreement (SIRA) which the Secretary enters into under the authority of Article II(B)(6) of the Consolidated Decree. Under Article II(B)(6), Colorado River water apportioned for use in a Lower Division State (Arizona, California, or Nevada), but not put to use, may be released by the Secretary for use in another Lower Division State during that same year.

A SIRA permits Colorado River water to be stored in a Lower Division State and, in the future, to be used in that State in place of Colorado River water that would otherwise be diverted under an entitlement and put to use. The Secretary, under the authority of II(B)(6), then makes the unused Colorado River water available for use in another Lower Division State in accordance with the terms of the SIRA. 43 CFR Part 414 allows only voluntary interstate transactions – no entitlement holder can be required under these regulations to participate in a SIRA.

There are, at a minimum, three parties to a SIRA: the Secretary, a storing entity, and a consuming entity. Under 43 CFR Part 414, a storing entity must be expressly authorized under State law to enter into a SIRA. In a SIRA, the storing entity agrees to store Colorado River water and, in a future year, upon request of the consuming entity, to ensure a reduction in the storing State's consumptive use of Colorado River water. This can be done by the storing entity making the stored water available to a Colorado River entitlement holder in the storing State, in exchange for the entitlement holder's agreement to forego the use of an equivalent amount of its Colorado River entitlement. Under the provisions of 43 CFR Part 414, this unused Colorado River water becomes Intentionally Created Unused Apportionment (ICUA), which the Secretary can then release under Article II(B)(6) and the terms of the SIRA to the consuming entity for use in a different Lower Division State.

43 CFR Part 414 provides that the SIRA must identify the quantity of water to be stored and the facilities in which it will be stored. The SIRA must also specify whether the water to be stored is water apportioned by the Secretary to the storing State or to the consuming State. If the water to be stored has been apportioned to the storing State, then it must first be offered to all other Colorado River

entitlement holders in that State before it can be stored. If the water to be stored was apportioned to the consuming State, then it must be transferred by the Secretary under Article II(B)(6) of the Consolidated Decree to the storing State for storage to occur.

43 CFR Part 414 requires that the SIRA specify the process for verifying that Colorado River water has been stored under the terms of the SIRA. The SIRA must also require the storing entity to certify to the Secretary that ICUA has been or will be developed. The Secretary will only release ICUA to a consuming entity in the year and to the extent ICUA is developed or will be developed by the storing entity through reduction of Colorado River water use in the storing State. A release of ICUA which has not yet been developed is known as an anticipatory release under 43 CFR 414. The Secretary will only make an anticipatory release after verifying that the ICUA will, in fact, be developed later in that same year.

43 CFR Part 414 also requires that the storing entity file an annual report with the Secretary identifying the quantity of Colorado River water stored the previous year under a SIRA and the total quantity of stored water available to support the development of ICUA under each SIRA to which the storing entity is a party. The regulations further provide that the Secretary, in the annual decree accounting report filed with the Supreme Court under Article V of the Consolidated Decree, will report Colorado River water diverted and stored under a SIRA as a consumptive use in the storing State in the year of storage, and will report ICUA released in a future year as a consumptive use in the consuming State in the year of release.

The financial details of the transaction, for example, payment of the costs to store the water, are not required to be addressed in the SIRA but may be the subject of separate agreements to which the Secretary is not a party.

As of 2008, two SIRAs have been entered into under 43 CFR Part 414.

The first SIRA, Contract No. 02-XX-30-W0406, was entered into on December 18, 2002, among the United States, the Arizona Water Banking Authority (AWBA), SNWA, and the CRCN. The agreement's term is until June 1, 2050, or until termination of the Agreement for Interstate Water Banking (discussed later in this chapter), whichever occurs first. This agreement provides that:

- AWBA will store water for the benefit of SNWA

- The water stored will be from either the State of Arizona's basic or surplus apportionment or the State of Nevada's unused basic or surplus apportionment released to the State of Arizona by the Secretary under Article II(B)(6)

- The water will be stored in Arizona in storage facilities for which the AWBA has storage agreements

- The long-term storage credits developed by AWBA under State law on behalf of SNWA will not exceed 200,000 acre-feet per year or 1,200,000 acre-feet over the term of the SIRA

- SNWA will receive 50,000 acre-feet of storage credits developed under a Central Arizona Water Conservation District (CAWCD) demonstration project in the early 1990s and transferred by CAWCD to AWBA for credit to SNWA's account (not counted toward the above caps)

- Storage credits held by others with AWBA may be assigned to SNWA and will count toward the above caps

- ICUA will be developed by AWBA at the request of SNWA by making the stored water available to CAWCD, which will then reduce its diversions of Colorado River water

- The Secretary will deliver the ICUA to SNWA, in amounts not to exceed 100,000 acre-feet in any year or in excess of 1,250,000 acre-feet over the term of the SIRA; the 1,250,000-acre-foot cap includes the 50,000 acre-feet related to the CAWCD demonstration underground storage project

The SIRA further provides that in years in which the Secretary declares a shortage under Article II(B)(3) of the Decree (now of the Consolidated Decree), AWBA's obligation to develop ICUA will be limited as provided for in the Agreement for Interstate Water Banking.

The second SIRA, Contract No. 04-XX-30-W0430, was entered into on October 27, 2004, among the United States, MWD, SNWA, and CRCN. The agreement is in effect until terminated by 90 days' written notice from SNWA or MWD. This agreement provides that:

- MWD will store water for the benefit of SNWA

- The water stored will be from the State of Nevada's unused basic or surplus apportionment, released to the State of California by the Secretary under Article II(B)(6)

- The water will be stored in storage facilities in California under MWD's control

- SNWA will not request the storage of water under this SIRA, except to the extent that, in any year, water stored for SNWA by AWBA under the Agreement for Interstate Water Banking among AWBA, SNWA, and

CRCN is less than 200,000 acre-feet, unless the Secretary has first taken such actions as may be necessary for environmental compliance for storage in excess of 200,000 acre-feet

- At the request of SNWA, ICUA will be developed by MWD by delivering the stored water to its member agencies in lieu of diverting Colorado River water to which MWD is otherwise entitled, with the amount of ICUA to be developed in any year not to exceed the lesser of 30,000 acre-feet (unless MWD agrees to a larger amount) or the previous end-of-year balance in the SNWA storage account established by MWD

- SNWA will not request the development in any year of more than an aggregate of 100,000 acre-feet of ICUA under this SIRA and under the December 18, 2002, SIRA among the United States, AWBA, SNWA, and CRCN, unless the Secretary has first taken such actions as may be necessary for environmental compliance for the development of ICUA in excess of the aggregate of 100,000 acre-feet in any year

Inadvertent Overrun and Payback Policy (IOPP)

The Secretary adopted the IOPP contemporaneously with the execution of the CRWDA. Both are set forth in the *Record of Decision, Colorado River Water Delivery Agreement, Implementation Agreement, Inadvertent Overrun and Payback Policy, and Related Federal Actions, Final Environmental Impact Statement* (2003 ROD), dated October 10, 2003, and published in the *Federal Register* at 69 Fed. Reg. 12202 (March 15, 2004). In the CRWDA, the Secretary agrees "not to materially modify the Inadvertent Overrun and Payback Policy for a 30-year period, absent extraordinary circumstances such as significant Colorado River infrastructure failures," subject to the shortage provisions in Section 5 of the CRWDA. The CRWDA also describes particular circumstances under which the IOPP may be suspended for certain districts that are party to the CRWDA in the event that transfer schedules or benchmarks are not met (see discussion earlier in this chapter of the CRWDA).

The IOPP provides additional flexibility to Colorado River management and applies to entitlement holders within the Lower Division States. The IOPP defines inadvertent overruns as Colorado River water diverted, pumped, or received by an entitlement holder of the Lower Division States that is in excess of the water user's entitlement for that year. Colorado River entitlements are for permanent service and are stated in terms of an annual diversion or consumptive use, in such amounts as can reasonably be put to beneficial use subject to the limitation of the entitlement. The Secretary determines the amount of water reasonably required for beneficial use on an annual basis by evaluating an entitlement holder's estimated water requirements in accordance with 43 CFR Part 417 to ensure that deliveries of Colorado River water to the entitlement holder will not exceed those reasonably required for beneficial use

under the respective BCPA contract or other authorization for use of Colorado River water. In the event of an overrun, the IOPP provides a structure to govern the payback of the overrun.

In accordance with the IOPP, inadvertent overruns are reported in the annual decree accounting report filed with the Supreme Court under Article V of the Consolidated Decree in *Arizona* v. *California*. The report identifies overrun accounts for individual entitlement holders. The establishment of an individual overrun account in the annual report does not expand the underlying entitlement to include the overrun but, rather, identifies the amount of an entitlement holder's consumptive use that is subject to the payback provisions of the IOPP. The IOPP provides that an individual inadvertent overrun account may not, at any given time, exceed "10 percent of an entitlement holder's normal year consumptive use entitlement."

The IOPP requires payback to begin in the calendar year following the publication of the annual decree accounting report identifying an overrun, except in a Shortage Condition. Payback is accomplished through an entitlement holder's implementation of extraordinary conservation measures, which are identified in the IOPP as "measures that are above and beyond the normal reasonable and beneficial consumptive use of water." Payback may also include supplementing Colorado River system water supplies with nonsystem water supplies through exchange or forbearance. After an overrun is identified in an annual Consolidated Decree accounting report, the extent to which payback is required in any given year is governed by the circumstances set forth in the IOPP. Examples of differing circumstances affecting a given year's payback obligation include whether the Secretary has made a flood control release or a determination of a Shortage Condition. Under the terms of the IOPP, Lake Mead elevations may also govern the period in which payback occurs.

The IOPP provides that procedures will be established for accounting for inadvertent overruns on an annual basis and for supplementing the final decree accounting reports. As of December 31, 2008, these procedures were under development.

Use of Colorado River Water Without an Entitlement

In 2008, Reclamation published a proposed rule in the *Federal Register* entitled "Regulating the Use of Lower Colorado River Water Without an Entitlement," proposed as a new 43 CFR Part 415. See 73 Fed. Reg. 40916 (July 16, 2008). The proposed rule provides a framework for identifying and curtailing the use of mainstream Colorado River water in the Lower Basin without an entitlement under the BCPA, the Consolidated Decree, or Secretarial Reservation. Most of the Colorado River water used without an entitlement is water drawn from the Colorado River mainstream by underground pumping. As of December 31, 2008, the use of Colorado River water in the Lower Basin without an entitlement was estimated at 10,000 to 15,000 acre-feet annually. The rule, as proposed, would:

- Establish the methodology that Reclamation will use to determine if a well pumps water that is replaced with water drawn from the lower Colorado River

- Establish a process for a water user to appeal a determination that a specific well pumps water that would be replaced by water drawn from the lower Colorado River

- Inform persons taking Colorado River water without an entitlement about the existence of potential options to bring their use of Colorado River water in the Lower Basin into compliance with Federal law

The rulemaking process was ongoing as of December 31, 2008.

State of Arizona Post-1978 Annual Water Entitlements

Each Colorado River water entitlement bears a priority. Until 1992, the priorities used for the delivery of Colorado River water within the State of Arizona were characterized in three time bands: (1) entitlements existing before June 25, 1929; (2) entitlements existing between June 25, 1929, and September 30, 1968 (the date of the authorization of the CAP); and (3) entitlements existing after September 30, 1968.

Beginning in September 1992, the priorities used for the delivery of Colorado River water within Arizona were characterized as illustrated in Table 6-3.

Table 6-3. Arizona Priority System

Priority	Rights to be Satisfied
First	Present Perfected Rights (PPRs) established prior to June 25, 1929, as recognized in *Arizona* v. *California* Consolidated Decree
Second[1]	Secretarial Reservations and Perfected Rights established or effective prior to September 30, 1968
Third[1]	Entitlements pursuant to contracts executed on or before September 30, 1968
Fourth	Entitlements (i) pursuant to contracts, Secretarial Reservations, Perfected Rights, and other arrangements between the United States and water users in the State of Arizona entered into or established subsequent to September 30, 1968, for use on Federal, State, or privately owned lands in the State of Arizona (for a total quantity of not to exceed 164,652 acre-feet of diversions annually); and (ii) Contract No. 14-06-W-245, dated December 15, 1972, as amended, between the United States and the Central Arizona Water Conservation District for the delivery of Mainstream Water for the Central Arizona Project, including use of Mainstream Water on Indian lands. Entitlements in (i) and (ii) are coequal.
Fifth	Entitlements to unused Arizona entitlement or unused apportionment water
Sixth	Entitlements to surplus water

[1]The Arizona 2nd and 3rd priority entitlements are co-equal in their priority.

Beginning in the early 2000s, and as of December 31, 2008, in large part due to the increase of water banking programs within the State of Arizona by which existing entitlement holders developed credits from the storage of Colorado River water, Reclamation was no longer entering into new contracts for 5th and 6th priority water.

Colorado River Water Delivery Contract Actions in Arizona

During the period from 1979 through 2008, the United States entered into several contracts with entities within the State of Arizona with regard to Colorado River water deliveries, including:

- April 13, 1979, Reclamation letter reducing Mohave Valley Irrigation and Drainage District (MVIDD) entitlement under Contract No. 14-06-W-204, dated November 14, 1968, by 10,000 acre-feet of Arizona fourth-priority water, in accordance with the provisions of the contract because certain lands were not included within the district. The MVIDD entitlement, as modified, is then for 41,000 acre-feet of Arizona fourth-priority water.

- June 7, 1979, Contract No. 9-07-30-W0012, Mohave Water Conservation District, for the diversion of up to 1,800 acre-feet per year of Arizona fourth-priority water previously allocated to MVIDD under Contract No. 14-06-W-204, dated November 14, 1968, and made available for reallocation by the April 13, 1979, reduction in the MVIDD entitlement.

- July 17, 1981, Contract No. 1-07-30-W0021, Wellton-Mohawk Irrigation and Drainage District (WMIDD), among other things, to consolidate several contracts into one document. The WMIDD entitlement in the consolidated contract is for 300,000 acre-feet per year of consumptive use, of which up to 5,000 acre-feet per year may be for domestic use.

- June 4, 1982, Contract No 2-07-30-W0025, Town of Parker, for PPR No. 20 for not to exceed (1) a diversion of up to 630 acre-feet per year, or (2) the quantity of mainstream water necessary to supply the consumptive use of 400 acre-feet per year, whichever is less.

- July 7, 1982, Contract No. 2-07-30-W0027, Mohave County, for the diversion of up to 10,000 acre-feet per year of Arizona fourth-priority water previously allocated to MVIDD under Contract No. 14-06-W-204, dated November 14, 1968, and made available for reallocation by the April 13, 1979, reduction in the MVIDD entitlement. Of the 10,000 acre-feet reallocated to Mohave County, up to 1,800 acre-feet per year was conditioned upon the execution of a subcontract with Mohave Water Conservation District, which was not executed, and the Mohave County entitlement was reduced by 1,800 acre-feet. The Mohave County entitlement, as modified, is then for the diversion of up to 8,200 acre-feet per year of Arizona fourth-priority water. Mohave Water Conservation

District continues to have a contract dated June 7, 1979, for 1,800 acre-feet per year of Arizona fourth-priority water.

- January 31, 1983, Contract No. 2-07-30-W0028, Cibola Valley Irrigation and Drainage District (CVIDD), for the diversion of up to 22,560 acre-feet per year of Arizona fourth-priority water.

- August 25, 1983, Contract No. 3-07-30-W0038, Gold Standard Mines Corp., for the diversion of up to 75 acre-feet per year of Arizona fourth-priority water.

- August 29, 1983, Contract No. 3-07-30-W0037, Armon Curtis (Curry Family Ltd.), for the diversion of up to 300 acre-feet per year of Arizona fourth-priority water.

- September 29, 1983, Contract No. 3-07-30-W0039, Lake Havasu Irrigation and Drainage District, to amend Contract No. 14-06-W-203, dated November 14, 1968, to increase by 301 acre-feet per year the previous entitlement for the diversion of up to 14,500 acre-feet per year of Arizona fourth-priority water, and to increase the size of the service area. The district entitlement under Contract No. 14-06-W-203, as modified by Contract No. 3-07-30-W0039, is then for 14,801 acre-feet per year of Arizona fourth-priority water.

- October 19, 1983, Contract No. 4-07-30-W0042-PPR, Arthur E. Graham assignment to Consolidated Water Utilities, Ltd. of PPR No. 9 for up to 360 acre-feet per year.

- November 9, 1983, Amendatory and Consolidated Contract No. 4-07-30-W0042, Consolidated Water Utilities, Ltd., for the diversion of up to 320 acre-feet per year of Arizona fourth-priority water, of which 120 acre-feet per year was acquired from the Lakeside Utilities, Inc. Contract No. 7-07-30-W0001, dated April 1, 1977 (assigned to Graham Water Utilities, Inc.) and 200 acre-feet per year was acquired from the Holiday Harbor Utilities Company Contract No. 7-07-30-W0003, dated June 16, 1977, and for PPR No. 9 for up to 360 acre-feet per year assigned from Arthur E. Graham. This contract supersedes Contract No. 7-07-30-W0001 and Contract No. 7-07-30-W0003.

- March 20, 1984, Contract No. 4-07-30-W0052, J.L. and Flora Hurschler, for PPR No. 11 for up to 1,050 acre-feet per year.

- October 24, 1984, Contract No. 5-07-30-W0057, Dulin Farms, for the diversion of up to 2,016 acre-feet per year of Arizona fourth-priority water.

- October 29, 1984, Contract No. 5-07-30-W0064, Raynor Ranches, for the diversion of up to 4,500 acre-feet per year of Arizona fourth-priority water.

- December 1, 1984, Contract No. 5-07-30-W0076, Auza Farms, Inc., for the diversion of up to 961.8 acre-feet per year of Arizona fourth-priority water.

- December 3, 1984, Contract No. 5-07-30-W0066, Jamar Produce Corporation, for the diversion of up to 480 acre-feet per year of Arizona fourth-priority water.

- March 8, 1985, Contract No. 5-07-30-W0078, Hillcrest Water Company, for the diversion of up to 84 acre-feet per year of Arizona fourth-priority water.

- June 27, 1985, Contract No. 5-07-30-W0093, Yuma Irrigation District, to supplement and amend YID's water delivery and repayment contract to reduce the shared entitlement of YMIDD, NGVID, and YID by 50,000 acre-feet. The shared entitlement, as modified, is for the beneficial consumptive use of up to 250,000 acre-feet of water per year. The reduction of 50,000 acre-feet per year is to facilitate implementation of the obligation of the United States to provide water to the Ak-Chin Indian Community. See Chapter 10.

- June 27, 1985, Contract No. 5-07-30-W0094, North Gila Valley Irrigation District, to supplement and amend NGVID's water delivery and repayment contract to reduce the shared entitlement of YMIDD, NGVID, and YID by 50,000 acre-feet. The shared entitlement, as modified, is for the beneficial consumptive use of up to 250,000 acre-feet of water per year. The reduction of 50,000 acre-feet per year is to facilitate implementation of the obligation of the United States to provide water to the Ak-Chin Indian Community. See Chapter 10.

- June 27, 1985, Contract No. 5-07-30-W0095, Yuma Mesa Irrigation and Drainage District, to supplement and amend YMIDD's water delivery and repayment contract to reduce the shared entitlement of YMIDD, NGVID, and YID by 50,000 acre-feet. The shared entitlement, as modified, is for the beneficial consumptive use of up to 250,000 acre-feet of water per year. The reduction of 50,000 acre-feet per year is to facilitate implementation of the obligation of the United States to provide water to the Ak-Chin Indian Community. See Chapter 10.

- December 2, 1985, unnumbered assignment agreement, Mohave County assignment to Bullhead City of Contract, No. 2-07-30-W0027, dated

July 7, 1982, for the diversion of up to 8,200 acre-feet per year of Arizona fourth-priority water (previously reduced from 10,000 acre-feet per year in accordance with Article 4(a)).

- February 11, 1986, Contract No. 5-07-30-W0065, Ansel Gary Hall, Lula DeAnn Westover, Cheree Dawn Emery, Max Arave Hall, Bennie Reed Hall, and Vicky Jeanne Shoopman, for the diversion of up to 510 acre-feet per year of Arizona fourth-priority water.

- February 24, 1986, Contract No. 6-07-30-W0124, Estates of Edward P. and Anna Roy, for the diversion of up to 1 acre-foot per year of Arizona fourth-priority water.

- October 21, 1987, Amendment No. 1 to Contract No. 3-07-30-W0039, Lake Havasu Irrigation and Drainage District, to increase its entitlement under the September 29, 1983, contract by 30 acre-feet of Arizona fourth-priority water. The district's entitlement, as modified, is then for the diversion of up to 14,831 acre-feet per year of Arizona fourth-priority water.

- March 16, 1988, Contract No. 8-07-30-W0184, Havasu Water Company, for the diversion of up to 993 acre-feet per year of Arizona fourth-priority water.

- December 1, 1988, Amendment No. 1 to Contract No. 14-06-W-245, CAWCD, to increase the ceiling for CAWCD's repayment obligation. See Chapter 5.

- June 1, 1989, Contract No. 9-07-30-W0203, Golden Shores Water Conservation District, for the diversion of up to 2,000 acre-feet per year of Arizona fourth-priority water with specified amounts allocated for use on lands within district boundaries, for use on private lands outside district boundaries, and for use on adjacent State lands.

- February 9, 1990, Amendment No. 1 to Contract No. 1-07-30-W0021, WMIDD, to reduce the WMIDD entitlement under the July 17, 1981 contract by 22,000 acre-feet of water to facilitate Section 7 of the Salt River Pima-Maricopa Indian Community Water Rights Settlement Act of 1988. See Chapter 10. The WMIDD entitlement, as modified, is then for the consumptive use of no more than 278,000 acre-feet of water per year, of which up to 5,000 acre-feet per year may be for domestic use.

- June 6, 1990, Contract No. 0-07-30-W0250, Gold Dome Mining Corporation, for the diversion of up to 7 acre-feet per year of Arizona fourth-priority water.

- May 26, 1992, Assignment No. 1 to Contract No. 5-07-30-W0076, Auza Farms, Inc., assignment to The Curtis Family Trust, of the December 1, 1984, contract for the diversion of up to 961.8 acre-feet per year of Arizona fourth-priority water.

- September 2, 1992, Amendment No. 1 to Contract No. 2-07-30-W0028, CVIDD, to increase the previous entitlement by up to 1,560 acre-feet per year of Arizona fourth-priority water, up to 3,000 acre-feet per year of unused Arizona entitlement and up to 4,000 acre-feet per year of surplus water; and to supersede the January 31, 1983, contract. The CVIDD entitlement, as modified, is then for the diversion of up to 24,120 acre-feet per year of Arizona fourth-priority water, up to 3,000 acre-feet per year of unused Arizona entitlement, and up to 4,000 acre-feet per year of surplus water.

- March 15, 1994, Assignment No. 1 of Contract No. 4-07-30-W0052, J.L. and Flora Hurschler assignment to Holpal, a California limited partnership, of the March 20, 1984, PPR contract for PPR No. 11 for up to 1,050 acre-feet per year.

- November 9, 1994, Contract No. 2-07-30-W0273, Bullhead City, contract for the diversion of up to 15,210 acre-feet per year of Arizona fourth-priority water (8,200 acre-feet of water assigned from Mohave County on December 2, 1985, and an additional 7,010 acre-feet of water); and to supersede and replace Contract No. 2-07-30-W0027.

- October 4, 1995, Assignment of Contract No. 14-06-W-203 and Contract No. 3-07-30-W0039 and its Amendment No. 1, Lake Havasu Irrigation and Drainage District assignment to Lake Havasu City of the September 29, 1983, contract, as amended October 21, 1987, for the diversion of up to 14,831 acre-feet per year of Arizona fourth-priority water.

- October 4, 1995, Amendment No. 2 to Contract No. 3-07-30-W0039, Lake Havasu City, to increase Lake Havasu City's entitlement by 4,349 acre-feet of Arizona fourth-priority water; and to supersede and replace Contract No. 14-06-W-203, dated November 14, 1968, and Contract No. 3-07-30-W0039, dated September 29, 1983, and its Amendment No. 1, dated October 21, 1987. The Lake Havasu City entitlement, as modified, is then for the diversion of up to 19,180 acre-feet per year of Arizona fourth-priority water plus unused Arizona entitlement and/or surplus water in amounts not specified.

- December 12, 1995, Contract No. 5-07-30-W0320, Mohave County Water Authority (MCWA), for the diversion of up to 15,000 acre-feet per year of Arizona fourth-priority water and up to 3,500 acre-feet per year of unused

Arizona entitlement, and for the diversion of additional unused Arizona entitlement and surplus water in amounts to be determined upon request.

- May 1, 1996, Contract No. 5-07-30-W0322, Marble Canyon Company, Inc., for the diversion of up to 70 acre-feet per year of Arizona fourth-priority water and unused Arizona entitlement and/or surplus water in amounts not specified.

- August 24, 1996, Supplementary Contract to Contract No. I76r-671 and Contract No. 14-06-300-621, YCWUA, to provide for the voluntary irrevocable conversion from irrigation use to domestic use of individual entitlements and for the delivery of the water. Discussed earlier in this chapter.

- June 13, 1997, Acknowledgment No. 1 of Contract No. 4-07-30-W0042, to acknowledge the Consolidated Water Utilities assignment to Brooke Water L.L.C. of the November 9, 1983, contract for the diversion of up to 320 acre-feet per year of Arizona fourth-priority water and for PPR No. 9 of up to 360 acre-feet per year.

- July 28, 1997, Contract No. 6-07-30-W0337, Sturges Farms, Inc. (Gila Monster Ranch), for the diversion of up to 6,285 acre-feet of Arizona third-priority water, up to 1,435 acre-feet per year of Arizona fourth-priority water, up to 656 acre-feet per year of unused Arizona entitlement, and for PPR No. 16 for up to 780 acre-feet per year.

- August 4, 1997, Amendment No. 2 to Contract No. 14-06-W-106, City of Yuma, to clarify that the City of Yuma's water entitlement is for up to 50,000 acre-feet per year on a consumptive use basis.

- November 21, 1997, Contract No. 6-07-30-W0352, Crystal Beach Water Conservation District, for the diversion of up to 132 acre-feet per year of Arizona fourth-priority water.

- January 6, 1998, Town of Parker, Amendment No. 1 to Contract No. 2-07-30-W0025, for the diversion of up to 1,030 acre-feet per year of Arizona fourth-priority water, 2,000 acre-feet per year of unused Arizona entitlement and/or surplus water, in addition to the previous entitlement for PPR No. 20 for not to exceed (1) a diversion of up to 630 acre-feet per year or (2) the quantity of mainstream water necessary to supply the consumptive use of 400 acre-feet each year, whichever is less; and to supersede and replace Contract No. 2-07-30-W0025, dated June 4, 1982.

- July 31, 1998, Contract No. 7-07-30-W0355, Maurice L. McAlister, for the diversion of up to 40 acre-feet per year of Arizona fourth-priority water.

- August 17, 1998, Contract No. 7-07-30-W0364, Arizona State Parks Board, for the diversion of up to 90 acre-feet per year of Arizona fourth-priority water.

- January 28, 1999, Contract No. 7-07-30-W0353, Town of Quartzsite, for the diversion of up to 1,070 acre-feet per year of Arizona fourth-priority water.

- June 28, 1999, Contract No. 4-07-30-W0317, Arizona State Land Department, for the diversion of up to 6,607 acre-feet per year of Arizona fourth-priority water and up to 9,067.2 acre-feet per year of unused Arizona entitlement and/or surplus water.

- October 3, 2000, Contract No. 6-07-30-W0336, Arizona Public Service Company and IID, for the diversion of up to 1,500 acre-feet per year of unused Arizona entitlement and/or surplus water.

- January 23, 2001, Contract No. 00-XX-30-W0391, Havasu Water Company, contract, to increase by 427 acre-feet per year its existing entitlement for the diversion of up to 993 acre-feet per year of Arizona fourth-priority water; and to supersede and replace Contract No. 2-07-30-W0025, dated March 16, 1988. The Havasu Water Company entitlement, as modified, is then for the diversion of up to 1,420 acre-feet per year of Arizona fourth-priority water.

- July 11, 2001, Assignment No. 1 of Contract No. 5-07-30-W0066, Jamar Produce Corporation assignment to North Baja Pipeline LLC of the December 3, 1984, contract for the diversion of up to 480 acre-feet per year of Arizona fourth-priority water.

- December 27, 2001, Amendment No. 1 to Contract No. 9-07-30-W0203, Golden Shores Water Conservation District, to redistribute the allocation between the lands within the district boundaries and certain private lands outside the district boundaries, with the allocation for adjacent State lands unchanged, and with the quantity of the district's entitlement unchanged.

- October 11, 2002, Assignment No. 1 of Contract No. 00-XX-30-W0391, Havasu Water Company assignment to Arizona-American Water Company of the January 23, 2001, contract for the diversion of up to 1,420 acre-feet per year of Arizona fourth-priority water.

- March 27, 2003, Assignment and Amendment No. 1 of Contract No. 5-07-30-W0065, Ansel Gary Hall, Lula DeAnn Westover, Cheree Dawn Emery, Max Arave Hall, Bennie Reed Hall, and Vicky Jeanne Shoopman assignment to Gary J. and Barbara J. Pasquinelli of Contract No. 5-07-30-W0065 dated February 11, 1986, and the

reduction of the entitlement under that contract by 24 acre-feet per year of Arizona fourth-priority water. The Gary J. and Barbara J. Pasquinelli entitlement, as modified, is then for the diversion of up to 486 acre-feet per year of Arizona fourth-priority water.

- September 4, 2003, Contract No. 01-XX-30-W0398, George Ogram, for the diversion of up to 480 acre-feet per year of Arizona fourth-priority water.

- September 2, 2004, Contract No. 7-07-30-W0358, Arizona State Land Department, for the diversion of up to 1,534 acre-feet per year of Arizona fourth-priority water.

- December 14, 2004, Amendment No. 2 to Contract No. 2-07-30-W0028, CVIDD, to reduce CVIDD's entitlement by 11,994 acre-feet of Arizona fourth-priority water, by 1,500 acre-feet of unused Arizona entitlement, and by 2,000 acre-feet of surplus water to allow for partial assignment to the Hopi Tribe and to MCWA. The CVIDD entitlement, as modified, is then for the diversion of up to 12,126 acre-feet per year of Arizona fourth-priority water, up to 1,500 acre-feet per year of unused Arizona entitlement, and up to 2,000 acre-feet per year of surplus water.

- December 14, 2004, Contract No. 04-XX-30-0432, Hopi Tribe, for the diversion of up to 5,997 acre-feet per year of Arizona fourth-priority water, up to 750 acre-feet per year of unused Arizona entitlement, and up to 1,000 acre-feet per year of surplus water, assigned from CVIDD.

- December 14, 2004, Contract No. 04-XX-30-W0431, MCWA, contract for the diversion of up to 5,997 acre-feet per year of Arizona fourth-priority water, up to 750 acre-feet per year of unused Arizona entitlement, and up to 1,000 acre-feet per year of surplus water, assigned from CVIDD.

- May 16, 2005, Amendment No. 2 to Contract No. 9-07-30-W0203, Golden Shores Water Conservation District, to further redistribute the allocation between the lands within the district boundaries and certain private lands outside the district boundaries, with the allocation for adjacent State lands unchanged, and with the quantity of the district's entitlement unchanged.

- July 1, 2005, Contract No. 01-XX-30-W0402, Ogram Boys Enterprises, Inc., for the diversion of up to 924 acre-feet per year of Arizona fourth-priority water.

- August 3, 2005, Assignment No. 2 of Contract No. 4-07-30-W0052, Holpal, a California limited partnership, assignment to First American

Title Insurance Agency of Mohave, Incorporated of March 20, 1984, contract for PPR No. 11 for up to 1,050 acre-feet per year.

- August 12, 2005, Contract No. 04-XX-30-W0433, North Baja Pipeline, LLC, for a change in type of use of water; and to supersede and replace Contract No. 5-07-30-W0066 with Jamar Produce Corporation, dated December 3, 1984, and assigned to North Baja Pipeline, LLC on July 11, 2001. The North Baja Pipeline, LLC entitlement, as modified, is for the diversion of up to 408 acre-feet per year for irrigation use and up to 72 acre-feet per year of domestic use for a total entitlement of up to 480 acre-feet per year of Arizona fourth-priority water.

- December 20, 2005, Assignment No. 1 of Contract No. 5-07-30-W0057, Dulin Farms assignment to Jessen Family Limited Partnership for the diversion of up to 1,080 acre-feet per year of Arizona fourth-priority water from the October 24, 1984, contract; and Dulin Farms assignment to CHACHA, LLC for the diversion of up to 936 acre-feet per year of Arizona fourth-priority water, from the October 24, 1984, contract.

- February 8, 2006, Contract No. 03-XX-30-W0419, City of Somerton, for the diversion of up to 750 acre-feet per year of Arizona fourth-priority water.

- February 17, 2006, Contract No. 05-XX-30-W0446, Beattie Farms Southwest, for the diversion of up to 1,110 acre-feet per year of Arizona fourth-priority water.

- April 11, 2006, Amendment No. 3 to Contract No. 9-07-30-W0203, Golden Shores Water Conservation District, to further redistribute the allocation between the lands within the district boundaries and certain private lands outside the district boundaries, with the allocation for adjacent State lands unchanged, and with the quantity of the district's entitlement unchanged.

- June 30, 2006, Amendment No. 3 to Contract No. 2-07-30-W0028, CVIDD, to transfer 60 acre-feet of Arizona fourth-priority water to Cibola Resources, LLC and to decrease CVIDD's entitlement by an equivalent amount. The CVIDD entitlement, as modified, is then for the diversion of up to 12,066 acre-feet per year of Arizona fourth-priority water, up to 1,500 acre-feet per year of unused Arizona entitlement, and up to 2,000 acre-feet per year of surplus water.

- June 30, 2006, Contract No. 06-XX-30-W0449, Cibola Resources, LLC, for the diversion of up to 60 acre-feet per year of Arizona fourth-priority water assigned from CVIDD.

- October 25, 2006, Contract No. 06-XX-30-W0449, Assignment and Transfer, Cibola Resources, LLC assignment and transfer to B&F Investment, LLC of the entitlement to divert up to 60 acre-feet per year of Arizona fourth-priority water under Contract No. 06-XX-30-W0449, dated June 30, 2006.

- October 25, 2006, Contract No. 06-XX-30-W0453, B&F Investment, LLC, for the diversion of up to 60 acre-feet per year of Arizona fourth-priority water, recognizing the assignment and transfer to B&F Investment, LLC, of the Cibola Resources entitlement under Contract No. 06-XX-30-W0449, dated June 30, 2006; to provide for a change in type of use, place of use, and point of diversion; and to supersede and replace Contract No. 06-XX-30-W0449.

- December 21, 2006, Contract No. 06-XX-30-W0450, Fisher's Landing Water and Sewer Works, LLC, for the diversion of up to 53 acre-feet per year of Arizona fourth-priority water.

- March 16, 2007, Contract No. 05-XX-30-W0444, Brooke Water Company L.L.C. to increase its existing entitlement by an additional 120 acre-feet of Arizona fourth-priority water; and to supersede and replace Contract No. 4-07-30-W0042, dated November 9, 1983. The Brooke Water Company L.L.C. entitlement, as modified, is then for the diversion of up to 440 acre-feet per year of Arizona fourth-priority water, and for PPR No. 9 for up to 360 acre-feet per year of water.

- June 22, 2007, Amendment No. 1 to Contract No. 5-07-30-W0320, MCWA, to add 3,500 acre-feet of Arizona fourth-priority water to MCWA's entitlement under the December 12, 1995, contract and to partially quantify MCWA's previously unquantified entitlements to unused Arizona entitlement and Arizona surplus water under that contract. The MCWA entitlement under this contract, as modified, is then for a diversion of up to 18,500 acre-feet per year of Arizona fourth-priority water, and as determined upon request, but not less than 750 acre-feet per year of unused Arizona entitlement, and as determined upon request, but not less than 1,000 acre-feet per year of surplus water.

- July 6, 2007, Amendment No. 1 to Contract No. 04-XX-30-W0431, MCWA, to allow MCWA to use its existing entitlement under this contract within two contract service areas, subject to certain terms and conditions. The MCWA entitlement under this contract is for the diversion of up to 5,997 acre-feet per year of Arizona fourth-priority water, up to 750 acre-feet per year of unused Arizona entitlement, and up to 1,000 acre-feet of surplus water per year.

- August 14, 2007, Supplement No. 1 to Contract No. 14-06-W-245, Amendment No. 1, CAWCD, to enable CAWCD to fulfill its Central Arizona Groundwater Replenishment District function, an entitlement of up to 7,746 acre-feet of CAP M&I water per year assigned to CAWCD by CAP subcontractors (944 acre-feet from Sunrise Water Company, 157 acre-feet from West End Water Company, 4,760 acre-feet from Litchfield Park Service Company; and 1,885 acre-feet from New River Utility Company).

- September 25, 2007, Amendment No. 2 to Contract No. 04-XX-30-W0431, MCWA, to assign to Arizona Game and Fish Commission the diversion of 1,419 acre-feet per year of Arizona fourth-priority water, 750 acre-feet per year of unused Arizona entitlement, and 1,000 acre-feet per year of surplus water and to reduce the MCWA entitlement by equivalent amounts. The MCWA entitlement under this contract, as modified, is then for the diversion of up to 4,578 acre-feet per year of Arizona fourth-priority water.

- September 25, 2007, Contract No. 07-XX-30-W0509, Arizona Game and Fish Commission, for the diversion of up to 1,419 acre-feet per year of Arizona fourth-priority water (of which 119 acre-feet is for Federal lands) and up to 750 acre-feet per year of unused Arizona entitlement, and up to 1,000 acre-feet per year of surplus water, assigned from MCWA Contract No. 04-XX-30-W0431.

- September 27, 2007, Contract No. 06-XX-30-W0448, JRJ Partners, L.L.C. (formerly Jessen Family Limited Partnership), for the diversion of up to 1,080 acre-feet per year of Arizona fourth-priority water, assigned to Jessen Family Limited Partnership by Dulin Farms on December 20, 2005 from Contract No. 5-07-30-W0057.

- November 30, 2007, Amendment No. 2 to Contract No. 14-06-W-245, CAWCD, to conform the contract to the Arizona Water Settlements Act.

- June 9, 2008, Amendment No. 1 to Contract No. 04-XX-30-W0432, Hopi Tribe, to assign and transfer 50 acre-feet per year of Arizona fourth-priority water to Springs del Sol Domestic Water Improvement District and to reduce the Hopi Tribe entitlement by an equivalent amount. The Hopi Tribe entitlement, as modified, is then for the diversion of up to 5,947 acre-feet per year of Arizona fourth-priority water, up to 750 acre-feet per year of unused Arizona entitlement, and up to 1,000 acre-feet per year of surplus water.

- June 9, 2008, Amendment No. 3 to Contract No. 04-XX-30-W0431, MCWA, to assign and transfer 50 acre-feet per year of Arizona fourth-priority water to Springs del Sol Domestic Water Improvement District

and to decrease MCWA's entitlement by an equivalent amount. The MCWA entitlement under this contract, as modified, is then for the diversion of up to 4,528 acre-feet per year of Arizona fourth-priority water.

- June 9, 2008, Contract No. 08-XX-30-W0524, Springs del Sol Domestic Water Improvement District, for the diversion of up to 100 acre-feet per year of Arizona fourth-priority water, of which 50 acre-feet per year was assigned and transferred from the Hopi Tribe Contract No. 04-XX-30-W0432 and 50 acre-feet per year was assigned and transferred from the MCWA Contract No. 04-XX-30-W0431.

- June 10, 2008, Amendment No. 4 to Contract No. 04-XX-30-W0431, MCWA, to assign and transfer 50 acre-feet of Arizona fourth-priority water to La Paz County and to decrease MCWA's entitlement by an equivalent amount. The MCWA entitlement under this contract, as modified, is then for the diversion of up to 4,478 acre-feet per year of Arizona fourth-priority water.

- June 10, 2008, Amendment No. 5 to Contract No. 04-XX-30-W0431, MCWA, to assign and transfer 200 acre-feet of Arizona fourth-priority water to La Paz County and to decrease MCWA's entitlement by an equivalent amount. The MCWA entitlement under this contract, as modified, is then for the diversion of up to 4,278 acre-feet per year of Arizona fourth-priority water.

- June 10, 2008, Amendment No. 2 to Contract No. 04-XX-30-W0432, Hopi Tribe, to assign and transfer 50 acre-feet per year of Arizona fourth-priority water to La Paz County and to decrease the Hopi Tribe's entitlement by an equivalent amount. The Hopi Tribe entitlement, as modified, is then for the diversion of up to 5,897 acre-feet per year of Arizona fourth-priority water, up to 750 acre-feet per year of unused Arizona entitlement, and up to 1,000 acre-feet per year of surplus water.

- June 10, 2008, Amendment No. 3 to Contract No. 04-XX-30-W0432, Hopi Tribe, to assign and transfer 200 acre-feet per year of Arizona fourth-priority water to La Paz County and to decrease the Hopi Tribe's entitlement by an equivalent amount. The Hopi Tribe entitlement, as modified, is then for the diversion of up to 5,697 acre-feet per year of Arizona fourth-priority water, up to 750 acre-feet per year of unused Arizona entitlement, and up to 1,000 acre-feet per year of surplus water.

- June 10, 2008, Contract No. 08-XX-30-W0530, La Paz County, for the diversion of up to 100 acre-feet per year of Arizona fourth-priority water, of which 50 acre-feet per year was assigned and transferred from the

Hopi Tribe Contract No. 04-XX-30-W0432 and 50 acre-feet per year was transferred from the MCWA Contract No. 04-XX-30-W0431.

- June 10, 2008, Amendment No. 1 to Contract No. 08-XX-30-W0530, La Paz County, to increase its entitlement by 400 acre-feet to reflect additional assigned and transferred water, of which 200 acre-feet per year was from Hopi Tribe Contract No. 04-XX-30-W0432 and 200 acre-feet per year was from the MCWA Contract No. 04-XX-30-W0431. The La Paz County entitlement, as modified, is then for the diversion of up to 500 acre-feet per year of Arizona fourth-priority water.

- September 4, 2008, Amendment No. 4 to Contract No. 2-07-30-W0028, CVIDD, to assign 2,700 acre-feet of Arizona fourth-priority water to Arizona Recreational Facilities, LLC, and to decrease CVIDD's entitlement by an equivalent amount. The CVIDD entitlement, as modified, is then for the diversion of up to 9,366 per year acre-feet of Arizona fourth-priority water, up to 1,500 acre-feet per year of unused Arizona entitlement, and up to 2,000 acre-feet per year of surplus water.

- September 4, 2008, Contract No. 07-XX-30-W0517, Arizona Recreational Facilities, LLC, for the diversion of up to 2,700 acre-feet per year of Arizona fourth-priority water assigned from CVIDD.

- October 6, 2008, Amendment No. 2 to Contract No. 1-07-30-W0021, WMIDD, to increase by 7,000 acre-feet the amount of water in the WMIDD entitlement which may be put to domestic use under the July 17, 1981, contract, as amended. The WMIDD entitlement, as modified, is then for 278,000 acre-feet per year of consumptive use, of which up to 12,000 acre-feet per year may be delivered by WMIDD for domestic use.

- October 9, 2008, Amendment No. 4 to Contract No. 04-XX-30-W0432, Hopi Tribe, to assign and transfer 1,419 acre-feet of Arizona fourth-priority water to the Arizona Game and Fish Commission and to reduce the Hopi Tribe's entitlement by an equivalent amount. The Hopi Tribe entitlement, as modified, is then for the diversion of up to 4,278 acre-feet per year of Arizona fourth-priority water, up to 750 acre-feet per year of unused Arizona entitlement, and up to 1,000 acre-feet per year of surplus water.

- October 9, 2008, Amendment No. 1 to Contract No. 07-XX-30-W0509, Arizona Game and Fish Commission, to increase the Commission's entitlement by 1,419 acre-feet of Arizona fourth-priority water to reflect water assigned and transferred from the Hopi Tribe. The Commission entitlement, as modified, is then for up to 2,838 acre-feet per year of fourth-priority water (of which 119 acre-feet is for Federal lands) and up

to 750 acre-feet per year of unused Arizona entitlement, and up to 1,000 acre-feet per year of surplus water.

Secretarial Reservations in Arizona

During the period from 1979 through 2008, the United States executed several Secretarial reservations of Colorado River water within the State of Arizona, including:

- September 29, 1981, reservation by the Secretary of the consumptive use of up to 1,280 acre-feet per year of Arizona fourth-priority water for use on federally owned lands in Arizona administered by the Bureau of Land Management (BLM). The water is for outdoor recreational purposes, including culinary, sanitary, and related uses.

- November 24, 1982, reservation by the Secretary of the lesser of the diversion of up to 34,500 acre-feet or the consumptive use of up to 16,793 acre-feet per year of Arizona second-priority water. The water is for the Cibola National Wildlife Refuge.

- April 27, 1987, reservation by the Secretary of the consumptive use of up to 1,930 acre-feet per year of Arizona fourth-priority water for use on federally owned lands in Arizona administered by BLM. The water is for culinary, sanitary, and related nonagricultural domestic uses.

- June 13, 2000, United States Department of the Interior BLM, interagency agreement for the consumptive use of up to 4,010 acre-feet per year of Arizona fourth-priority water pursuant to Secretarial Reservations dated August 30, 1973 (800 acre-feet per year), September 29, 1981 (1,280 acre-feet per year), and April 27, 1987 (1,930 acre-feet per year).

- November 29, 2000, reservation by the Secretary of the diversion of up to 100 acre-feet per year of water for use by Reclamation at Davis Dam and its facilities.

State of California Post-1978 Annual Water Entitlements

The priority system used for the delivery of Colorado River water within the State of California is set forth in the Seven-Party Agreement and incorporated into Federal regulations and into the Secretary's water delivery contracts, as discussed earlier in this chapter. The California priority system is illustrated earlier in this chapter in Table 6-2.

Colorado River Water Delivery Contract Actions in California

During the period from 1979 through 2008, the United States entered into several contracts with entities within the State of California with regard to Colorado River water deliveries, including:

- July 5, 1985, Contract No. 5-07-30-W0091, City of Needles, for the delivery of up to 10,000 acre-feet per year of surplus Colorado River flows.

- May 8, 1986, Contract No. 6-07-30-W0139, Margaret T. Sherman, PPR contract for the diversion of up to 23.9305 acre-feet of water per year pursuant to PPR No. 38.

- May 14, 1986, Contract No. 6-07-30-W0138, James R. Bly, PPR contract for the diversion of up to 3.1217 acre-feet of water per year pursuant to PPR No. 38.

- September 19, 1986, Contract No. 6-07-30-W0140, Edward W. and Deborah F. Glynn, PPR contract for the diversion of up to 0.8404 acre-feet of water per year pursuant to PPR No. 38.

- September 19, 1986, Contract No. 6-07-30-W0136, William H. and Hazel I. Lindeman, PPR contract for the diversion of up to 0.2586 acre-feet of water per year pursuant to PPR No. 38.

- September 19, 1986, Contract No. 6-07-30-W0137, Wilbur G. and Carroll D. Schroeder, PPR contract for the diversion of up to 12.0068 acre-feet of water per year pursuant to PPR No. 38.

- September 29, 1986, Contract No. 6-07-30-W0143, Kenneth C. and Joan C. Wetmore, PPR contract for the diversion of up to 5.3938 acre-feet of water per year pursuant to PPR No. 38.

- October 16, 1986, Contract No. 6-07-30-W0145, Mark M. and Judith K. Wetmore, PPR contract for the diversion of up to 9.2544 acre-feet of water per year pursuant to PPR No. 38.

- February 20, 1987, Contract No. 7-07-30-W0149, Jack D. Brown, PPR contract for the diversion of up to 2.3459 acre-feet of water per year pursuant to PPR No. 38.

- February 23, 1987, Contract No. 7-07-30-W0153, Jerry O. and Delores P. Williams, PPR contract for the diversion of up to 1.1360 acre-feet of water per year pursuant to PPR No. 38.

- March 6, 1987, Contract No. 7-07-30-W0150, CVWD, for the delivery of up to 100,000 acre-feet per year of surplus Colorado River flows.

- June 26, 1987, Contract No. 7-07-30-W0158, Hallise L. Dickman, Donald E. Dickman, Myrville D. Early, Guy Grannis, Vera M. Grannis, Loren D. Grannis, and Charlotte L. Grannis, PPR contract for the diversion of up to 180 acre-feet of water per year pursuant to PPR No. 32.

- September 4, 1987, Contract No. 7-07-30-W0172, Michael O. and Linda Andrews, PPR contract for the diversion of up to 0.9236 acre-feet of water per year pursuant to PPR No. 38.

- September 9, 1987, Contract No. 7-07-30-W0171, MWD, for the delivery of up to 180,000 acre-feet per year of surplus Colorado River flows.

- September 17, 1987, Contract No. 7-07-30-W0176, Jerome D. and Martha A. Carney, PPR contract for the diversion of up to 0.4525 acre-feet of water per year pursuant to PPR No. 38.

- March 30, 1988, Contract No. 8-07-30-W0185, Dorothy L. Andrade, PPR contract for the diversion of up to 1.8472 acre-feet of water per year pursuant to PPR No. 38.

- April 13, 1988, Contract No. 8-07-30-W0187, Picacho Development Corporation and California Department of Parks and Recreation, PPR contract for the diversion of up to 120 acre-feet of water per year pursuant to PPR No. 31.

- October 15, 1991, Contract No. 4-07-30-W0053, Yuma Associates Ltd., and Winterhaven Water District, PPR contract for the diversion of up to 262.8 acre-feet of water per year pursuant to PPR No. 29.

- July 5, 1994, Assignment No. 1 of Contract No. 6-07-30-W0139, Margaret T. Sherman assignment to Sunmor Properties, Inc., of contract dated May 8, 1986, for the diversion of up to 23.9305 acre-feet of water per year pursuant to PPR No. 38.

- July 22, 1996, Contract No. 6-07-30-W0342, William F. and Dorothy S. West, PPR contract for the diversion of up to 0.8774 acre-feet of water per year pursuant to PPR No. 38.

- August 26, 1999, Interagency Agreement No. 6-07-30-W0351, Department of the Navy, contract for the diversion of up to 25 acre-feet per year of surplus water and/or unused apportionment water.

- February 25, 2000, Assignment No. 1 of Contract No. 7-07-30-W0158, Hallise L. Dickman, Donald E. Dickman, Myrville D. Early, Guy Grannis, Vera M. Grannis, Loren D. Grannis, and Charlotte L. Grannis assignment to Sonny Gowan of the June 26, 1987, contract for the diversion of up to 180 acre-feet of water per year pursuant to PPR No. 32.

- October 10, 2003, IID, CVWD, MWD, and SDCWA, Colorado River Water Delivery Agreement: Federal Quantification Settlement Agreement, capping certain entitlements and effecting Colorado River water transfers within California for a period of time. Discussed earlier in this chapter.

- October 10, 2003, MWD, CVWD, IID, SDCWA, the La Jolla, Pala, Pauma, Rincon, and San Pasqual Bands of Mission Indians, the San Luis Rey Indian Water Authority, the City of Escondido, and Vista Irrigation District, Allocation Agreement, allocating water conserved from the lining of portions of the All-American Canal and the Coachella Canal. Discussed earlier in this chapter.

- October 27, 2004, Assignment No. 1 of Contract No. 6-07-30-W0342, William F. and Dorothy S. West assignment to Ronald E. and Shannon L. Williamson of contract dated July 22, 1996. Contract is for the diversion of up to 0.8774 acre-feet of water per year pursuant to PPR No. 38.

- February 16, 2005, Assignment No. 2 of Contract No. 6-07-30-W0342, Ronald E. and Shannon L. Williamson assignment to Kendell M. Perrett, of contract dated July 22, 1996, previously assigned to the Williamsons on October 27, 2004. Contract is for the diversion of up to 0.8774 acre-feet of water per year pursuant to PPR No. 38.

- April 3, 2006, Contract No. 05-XX-30-W0445, City of Needles, PPR contract to recognize the City of Needles' right to utilize PPR No. 43 for the diversion of up to 1,500 acre-feet of water per year or the consumptive use of up to 950 acre-feet per year, whichever is less, pursuant to PPR No. 43.

- December 1, 2006, Contract No. 06-XX-30-W0454, Rudy J. Leon and Helen V. Thomas, PPR contract for the diversion of up to 1.7086 acre-feet of water per year pursuant to PPR No. 38.

- March 16, 2007, Amendment No. 1 to Contract No. 05-XX-30-W0445, City of Needles, to reflect the assignment of PPR No. 44 from Atchison, Topeka and Santa Fe Railroad Company to the City of Needles, which increased the City of Needles' entitlement by a diversion quantity of up to 1,260 acre-feet of water per year or the consumptive use of up to 273 acre-

feet of water per year, whichever is less. The contract as amended then provided for a diversion entitlement of up to 2,760 acre-feet of water per year or a consumptive use entitlement of up to 1,223 acre-feet of water per year, whichever is less.

- December 13, 2007, Contract No. 07-XX-30-W0518, IID, Delivery Agreement, for Intentionally Created Surplus under the 2007 Interim Guidelines.

- December 13, 2007, Contract No. 07-XX-30-W0519, MWD, Delivery Agreement, for Intentionally Created Surplus under the 2007 Interim Guidelines.

- May 28, 2008, Assignment No. 1 of Contract No. 6-07-30-W0138, Charles E. Bly (successor-in-interest to James R. Bly) assignment to Ronnie Herndon and Linda Herndon for up to 0.4527 acre-feet of water per year pursuant to PPR No. 38 and assignment to Gordon Family Trust and Danduran Family Revocable Living Trust for up to 2.669 acre-feet of water per year, with each assignment from the May 14, 1986, contract contingent upon the assignees entering into PPR contracts within 1 year of the effective date of the assignment.

- September 15, 2008, Assignment No. 1 of Contract 6-07-30-W0136, Hazel I. Lindeman (successor-in-interest to William H. Lindeman) assignment to Jerry D. Williams, Deloris P. Williams, Jerry O. Williams, assignment of September 19, 1986 contract for diversion of up to .2587 acre-feet of water per year pursuant to PPR No. 38.

- October 7, 2008, Contract No. 08-XX-30-W0527, Gordon Family Trust, Danduran Trust B, PPR contract for the diversion of up to .2586 acre-feet of water per year pursuant to PPR No. 38.

Secretarial Reservations in California

During the period from 1979 through 2008, the United States executed one Secretarial reservation of Colorado River water within the State of California:

- January 20, 2000, Agreement No. 8-07-30-W0374, BLM, interagency agreement for up to 1,000 acre-feet per year of surplus water pursuant to Secretarial Reservation dated August 30, 1973.

State of Nevada Post-1978 Annual Water Entitlements

The priority system used for the delivery of Colorado River water within the State of Nevada as of December 31, 2008, is illustrated in Table 6-4.

Table 6-4. Nevada Priority System

Priority	Rights to be Satisfied[1]	Basis of Entitlement
First	Present Perfected Rights: Fort Mojave Indian Reservation (12,534 afy[2]) Lake Mead National Recreation Area (Diversion = 500 afy or CU = 300 afy)	 PPR[3] No. 81 AZ v. CA PPR No. 82 AZ v. CA
Second	Perfected Rights: Lake Mead National Recreation Area (in amount as required - 1,500 afy estimated)	 Perfected Right – AZ v. CA
Third	City of Boulder City, Nevada (amount as authorized by decree, statute, and contract)	Perfected Right – AZ v. CA Contract No. 14-06-300-978
Fourth (co-equal)	Basic Water Company (formerly Basic Management, Inc) (8,608 afy) City of Henderson (15,878 afy) SNWA[4] (14,550 afy)	Contract No. 14-06-300-2083 Contract No. 0-07-30-W0246 Contract No. 2-07-30-W0266
Fifth	Lakeview Company (reduced to 0 afy) Pacific Coast Building Products (928 afy)	Contract No.14-06-300-1523 Contract No. 5-07-30-W0089
Sixth	Las Vegas Valley Water District (15,407 afy)	Contract No. 14-06-300-2130
Seventh	Reclamation (300 afy) Nevada Department of Wildlife (formerly Nevada Department of Fish and Game) (CU 25 afy) SNWA (4,000 afy) SNWA (10 afy)	Secretarial Reservation Contract No. 14-06-300-2405 Contract No. 7-07-30-W0004 Contract No. 9-07-30-W0011
Eighth	SNWA – Robert B. Griffith Project (299,000 afy, includes the 4,000 afy in the Seventh Priority, plus system loss 9,000 afy) Big Bend Water District (10,000 afy) SNWA (balance of State apportionment, unused and surplus) Any contract for a well drawing Colorado River water executed under the conditions provided for in Contract No. 2-07-30-W0266, Article 22(a)	Contract No. 7-07-30-W0004 Contract No. 2-07-30-W0269 Contract No. 2-07-30-W0266 Contract No. 2-07-30-W0266
Ninth	Any contracts for the delivery of Colorado River water dated after the March 2, 1992, SNWA contract	

[1]Unless otherwise stated, all quantities are stated in terms of diversion. Consumptive use is abbreviated CU.
[2]Acre-feet per year
[3]Present Perfected Right
[4]Southern Nevada Water Authority

Colorado River Water Delivery Contract Actions in Nevada

The United States is a party to the following contracts relating to Colorado River entitlements within the State of Nevada. Depending on the nature and date of the contract, either CRCN or SNWA, or both, are also parties. For contracts entered into prior to December 29, 1995, the State of Nevada participated in an approving role. During the period from 1979 through 2008, the United States entered into several contracts with entities within the State of Nevada with regard to Colorado River water deliveries, including:

- November 12, 1981, Contract No. 1-07-30-W0022, State of Nevada, amendment to the March 30, 1942, contract to provide for the delivery of 4 percent of surplus water. Discussed earlier in this chapter.

- November 8, 1983, Contract No. 4-07-30-W0041, State of Nevada, to, among other things, provide that the State of Nevada may subcontract with other entities for the delivery of up to 10,000 acre-feet of water per year. Discussed earlier in this chapter. The State then subcontracted with Big Bend Water District on November 9, 1983, for the delivery of up to 10,000 acre-feet of water per year.

- June 19, 1985, Pacific Coast Building Products, Inc., Contract No. 5-07-30-W0089, for the delivery of up to 928 acre-feet of water per year, and to supersede and replace Contract No. 14-06-300-1518, dated April 9, 1965.

- May 22, 1990, Amendment No. 1 to Contract No. 14-06-300-2083, Basic Management, Inc. (BMI), Chemstar Corporation, Titanium Metals Corporation of America, Kerr-McGee Chemical Corporation, Pioneer Chlor Alkali Company, Inc., among other things, to effect the assignment and transfer of a portion of the BMI contract water delivery entitlement (15,878 acre-feet) to the City of Henderson and reduce the remaining BMI entitlement to up to 23,158 acre-feet of water per year.

- May 22, 1990, Contract No. 0-07-30-W0246, City of Henderson, contract for the delivery of up to 15,878 acre-feet of water per year, transferred from BMI et al.

- March 2, 1992, Contract No. 2-07-30-W0269, Big Bend Water District, for the delivery of up to 10,000 acre-feet per year of Colorado River water for the district and to create a direct relationship among the United States, the State of Nevada, and Big Bend Water District with respect to delivery of this water, replacing a November 9, 1983, contract between Big Bend Water District and the State of Nevada for the delivery of up to 10,000 acre-feet per year of Colorado River water.

- March 2, 1992, Amendment No. 1 to Contract No. 4-07-30-W0041, State of Nevada, amendatory, supplementary, and restating contract that, among other things: (1) amends, supplements, and restates in its entirety the March 30, 1942, contract; and (2) supersedes the supplemental contract to the March 30, 1942, contract, dated January 3, 1944, the amendatory contract dated November 12, 1981, and the amendatory and supplementary contract dated November 8, 1983. Discussed earlier in this chapter.

- March 2, 1992, Amendment No. 1 to Contract No. 7-07-30-W0004, State of Nevada, for the diversion of up to 299,000 acre-feet per year of

Colorado River water through the Robert B. Griffith Water Project plus system losses not to exceed 9,000 acre-feet per year. Discussed earlier in this chapter.

- March 2, 1992, Contract No. 2-07-30-W0266, SNWA, for the remainder of Nevada's apportionment and surplus entitlement for use in Nevada. Discussed earlier in this chapter.

- March 2, 1992, Amendment No. 1 to Contract No. 14-06-300-2130, Las Vegas Valley Water District, to provide additional delivery points for the existing entitlement for the delivery of up to 15,407 acre-feet of water per year, and to supersede and replace the September 22, 1969 contract.

- March 2, 1992, Supplement No. 2 to Contract No. 14-06-300-978, Boulder City, to provide additional points of diversion for the city's existing entitlement for the delivery of up to 5,876 acre-feet of water per year.

- August 19, 1993, Amendment No. 1 to Contract No. 2-07-30-W0269, Big Bend Water District, for the delivery of up to 10,000 acre-feet of water per year, and to supersede and replace the March 2, 1992, contract.

- August 19, 1993, Amendment No. 1 to Contract No. 0-07-30-W0246, City of Henderson, to provide for additional delivery points for the city's existing entitlement for the delivery of up to 15,878 acre-feet of water per year, and to supersede and replace the May 22, 1990, contract.

- August 19, 1993, Supplement No. 3 to Contract No. 14-06-300-978, Boulder City, to provide additional points of diversion for the city's existing entitlement for the delivery of up to 5,876 acre-feet of water per year.

- November 17, 1994, Amendment No. 2 to Contract No. 14-06-300-2083, Basic Water Company (formerly BMI), Chemstar Lime Company, Titanium Metals Corporation of America, Kerr-McGee Chemical Corporation, and Pioneer Chlor Alkali Company, Inc., among other things, to effect the assignment and transfer of 14,550 acre-feet per year of their entitlement to SNWA and to reduce the contract entitlement by an equivalent amount. The Basic Water Company et al. entitlement, as modified, is then for the delivery of up to up to 8,608 acre-feet of water per year.

- November 17, 1994, Amendment No. 1 to Contract No. 2-07-30-W0266, SNWA, to preserve the priority date of the 14,550 acre-feet of water per year assigned from BMI et al. to SNWA, and to supersede and replace the March 2, 1992, contract.

- December 29, 1995, Assignment No. 1 of Contract No. 7-07-30-W0004, SNWA, approval by the United States of the assignment of rights and duties under the contract from the State of Nevada and the Colorado River Commission of Nevada to SNWA.

- July 3, 2001, Amendment No. 2 to Contract No. 7-07-30-W0004, SNWA, to provide for a new point of diversion, to restate certain provisions, and to clarify which provisions of the contract no longer apply after title of the Robert B. Griffith Water Project is transferred to SNWA.

- January 23, 2007, Assignment No. 1 of Contract No. 9-07-30-W0011, SNWA, dated November 8, 1978, from the Boy Scouts of America to SNWA for the delivery of up to 10 acre-feet of water per year.

- December 13, 2007, Contract No. 07-XX-30-W0520, SNWA, Delivery Agreement, for Intentionally Created Surplus and Developed Shortage Supply under the 2007 Interim Guidelines.

Secretarial Reservations in Nevada

During the period from 1979 through 2008, the United States executed a Secretarial reservation of Colorado River water within the State of Nevada:

- November 9, 1998, Bureau of Reclamation, Secretarial Reservation for the diversion of up to 300 acre-feet of water per year to be used in Nevada at Federal facilities or on Federal lands adjacent to the Colorado River. The primary use of water is at Hoover Dam and its visitor facility.

Chapter 6: List of References

Treaties, Interstate Compacts, and Federal Statutes

Boulder Canyon Project Act, Pub. L. No. 70-642, 45 Stat. 1057 (1928). On DVD in *Updating the Hoover Dam Documents 1978* at I-13.

Act of July 30, 1947, Pub. L. No. 80-272, 61 Stat. 628 (1947) (Gila Project Reauthorization Act). On DVD in *Updating the Hoover Dam Documents 1978* at II-41.

Act of October 19, 1984, Pub. L. No. 98-530, 98 Stat. 2698 (1984).

Act of November 17, 1988, Pub. L. No. 100-675, 102 Stat. 4000 (1988) (Appendix 18), later amended and supplemented by:

> Act of October 27, 2000, Pub. L. No. 106-377, Appendix B, Title II, Section 211, 114 Stat. 1441A-70 (2000) (Packard Amendment). Appendix 19.

Federal Court Decisions

Arizona v. *California*:

> 373 U.S. 546 (1963) (Opinion). DVD Supplement 2.
>
> 376 U.S. 340 (1964) (1964 Decree). Appendix 4 and DVD Supplement 3.
>
> 547 U.S. 150 (2006) (Consolidated Decree). Appendix 5 and DVD Supplement 12.

Federal Regulations

General Regulations, Contracts for the Storage of Water in Boulder Canyon Reservoir, Boulder Canyon Project, and the Delivery Thereof, September 28, 1931 (incorporating priorities of Seven-Party Agreement). Appendix 16.

43 CFR Part 414, Offstream Storage of Colorado River Water and Development and Release of Intentionally Created Unused Apportionment in the Lower Division States. Appendix 27.

43 CFR Part 417, Procedural Methods for Implementing Colorado River Water Conservation Measures With Lower Basin Contractors and Others. Appendix 28.

Federal Register Notices

66 Fed. Reg. 7772 (January 25, 2001), Colorado River Interim Surplus Guidelines. Notice of Availability of Record of Decision for the adoption of Colorado River Interim Surplus Guidelines. DVD Supplement 94.

69 Fed. Reg. 12202 (March 15, 2004), Colorado River Water Delivery Agreement – Implementation Agreement, Inadvertent Overrun and Payback Policy, and Related Federal Actions, Colorado River, Arizona, California, and Nevada. Notice of Availability of a Record of Decision for the Colorado River Water Delivery Agreement – Implementation Agreement, Inadvertent Overrun and Payback Policy, and Related Federal Actions Environmental Impact Statement. DVD Supplement 69.

73 Fed. Reg. 40916 (July 16, 2008), Regulating the Use of Lower Colorado River Water Without an Entitlement. Notice of proposed rulemaking.

Records of Decision (RODs)

Secretary of the Interior, October 10, 2003, *Record of Decision, Colorado River Water Delivery Agreement, Implementation Agreement, Inadvertent Overrun and Payback Policy, and Related Federal Actions, Final Environmental Impact Statement*. DVD Supplement 67.

Contracts and Agreements

State of Arizona contracts and agreements. Selectively included, as specified below.

State of California contracts and agreements. Selectively included, as specified below.

State of Nevada contracts and agreements. Selectively included, as specified below.

Agreement Requesting the Division of Water Resources of the State of California to Apportion California's Share of the Waters of the Colorado River Among the Various Applicants and Water Users Therefrom in the State, Consenting to Such Apportionments, and Requesting Similar Apportionments by the Secretary of the Interior of the United States, among Palo Verde Irrigation District, Imperial Irrigation District, Coachella Valley County Water District [now Coachella Valley Water District], The Metropolitan Water District of Southern California, City of Los Angeles, City of San Diego, and County of San Diego, August 18, 1931 (Seven-Party Agreement), representative original executed by The Metropolitan Water District of Southern California. Appendix 15.

Seven-Party Agreement, executed by Palo Verde Irrigation District w/ reservation of right, August 18, 1931. DVD Supplement 54.

Contract for Delivery of Water, between the United States and the State of Nevada and its Colorado River Commission, March 30, 1942. DVD Supplement 82.

Supplemental Contract for Delivery of Water, between the United States and the State of Nevada and its Colorado River Commission, January 3, 1944. DVD Supplement 83.

Contract for Delivery of Water, between the United States and the State of Arizona, acting through its Colorado River Commission, February, 1944. Appendix 12.

Contract No. 14-06-W-245, Master Repayment Contract between the United States and the Central Arizona Water Conservation District, December 15, 1972 (DVD Supplement 40), later amended and supplemented:

Amendment No.1, dated December 1, 1988. DVD Supplement 41.

Supplement No. 1, dated August 14, 2007. DVD Supplement 42.

Amendment No. 2, dated November 30, 2007. DVD Supplement 43.

Amendatory Contract With the State of Nevada for Delivery of Colorado River Water, between the United States of America and the State of Nevada acting through the Colorado River Commission of Nevada, November 12, 1981. DVD Supplement 84.

Amendatory and Supplementary Contract With the State of Nevada for Delivery of Colorado River Water, between the United States of America and the State of Nevada and the Colorado River Commission of Nevada, November 8, 1983. DVD Supplement 85.

Amendatory, Supplementary, and Restating Contract With the State of Nevada for the Delivery of Colorado River Water, among the United States of America and the State of Nevada and its Colorado River Commission, March 2, 1992. DVD Supplement 86.

Amendatory, Supplementary, and Restating Contract Between the United States and the State of Nevada for the Delivery of Water and Repayment of Project Works, between the United States of America and the State of Nevada and its Colorado River Commission, March 2, 1992. DVD Supplement 87.

Contract with the Southern Nevada Water Authority, Nevada, for the Delivery of Colorado River Water, among the United States of America, the State of Nevada and its Colorado River Commission, and the Southern Nevada Water Authority, March 2, 1992. DVD Supplement 88.

Amended and Restated Contract With the Southern Nevada Water Authority, Nevada, for the Delivery of Colorado River Water, among the United States of

America, the State of Nevada and its Colorado River Commission, and the Southern Nevada Water Authority, November 17, 1994. DVD Supplement 89.

Assignment Agreement for Amendatory, Supplementary and Restating Contract Between the United States and the State of Nevada for the Delivery of Water and Repayment of Project Works, Contract No. 7-07-30-W0004, Amendment No. 1, dated March 2, 1992, between the State of Nevada and its Colorado River Commission, and the Southern Nevada Water Authority, December 29, 1995. DVD Supplement 90.

Key Terms for Quantification Settlement Among the State of California, IID, CVWD, and MWD, October 15, 1999. DVD Supplement 65.

Storage and Interstate Release Agreement, Contract No. 02-XX-30-W0406, among the United States of America, the Arizona Water Banking Authority, Southern Nevada Water Authority, and the Colorado River Commission of Nevada, December 18, 2002. Appendix 25.

Agreement for the Conveyance of Water Among the San Diego County Water Authority, the San Luis Rey Settlement Parties, and the United States, October 10, 2003. DVD Supplement 72.

Agreement Relating to Supplemental Water Among The Metropolitan Water District of Southern California, the San Luis Rey Settlement Parties, and the United States, October 10, 2003. DVD Supplement 71.

Allocation Agreement Among the United States of America, The Metropolitan Water District of Southern California, Coachella Valley Water District, Imperial Irrigation District, San Diego County Water Authority, and the La Jolla, Pala, Pauma, Rincon, and San Pasqual Bands of Mission Indians, the San Luis Rey River Indian Water Authority, the City of Escondido, and Vista Irrigation District, October 10, 2003. DVD Supplement 66.

Colorado River Water Delivery Agreement: Federal Quantification Settlement Agreement, among the United States, Imperial Irrigation District, Coachella Valley Water District, The Metropolitan Water District of Southern California, and the San Diego County Water Authority, October 10, 2003. Appendix 20.

Conservation Agreement, among the Bureau of Reclamation, Imperial Irrigation District, Coachella Valley Water District, and the San Diego County Water Authority, October 10, 2003. DVD Supplement 68.

Storage and Interstate Release Agreement, Contract No. 04-XX-30-W0430, among the United States, The Metropolitan Water District of Southern California, the Southern Nevada Water Authority, and the Colorado River Commission of Nevada, October 27, 2004. Appendix 26.

Settlement Agreement in *Arizona* v. *California* by and among the Quechan Indian Tribe of the Fort Yuma Indian Reservation, the United States of America, The Metropolitan Water District of Southern California, Coachella Valley Water District, and the State of California, February 14, 2005; Exhibit A to The Special Master McGarr's Approval of Final Settlements and Recommendations to the Court, June 14, 2005, *Arizona* v. *California*. DVD Supplement 11.

Letter Agreement for Temporary Re-regulation of Excess Colorado River Flows, June 13, 2006, Bureau of Reclamation and Imperial Irrigation District. Appendix 22.

Letter Agreement for Temporary Re-regulation of Excess Colorado River Flows, June 14, 2006, Bureau of Reclamation and The Metropolitan Water District of Southern California. Appendix 23.

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Reclamation to Imperial Irrigation District and The Metropolitan Water District of Southern California, re: Agreement for the Implementation of a Water Conservation Program and Use of Conserved Water, January 17, 1989. DVD Supplement 63.

Reclamation to Colorado River Board of California, Bard Water District, Coachella Valley Water District, Imperial Irrigation District, The Metropolitan Water District of Southern California, Palo Verde Irrigation District, the Quechan Tribe of Indians, and the Bureau of Indian Affairs, re: the California agricultural entitlements to Colorado River water, December 10, 1992. DVD Supplement 64.

Yuma Irrigation District (YID) to Reclamation, documenting request by YID and North Gila Valley Irrigation District on May 22, 1997, for separation of joint water entitlement, December 3, 1997.

Other

Bureau of Reclamation, Map No. 23000, Colorado River Basin, 1928. Appendix 2.

The Hoover Dam Power and Water Contracts and Related Data (1933), Part I(8). On DVD.

The Hoover Dam Documents 1948, Chapters X, XI and Appendices 1018, 1106, and 1211. On DVD.

Updating the Hoover Dam Documents 1978, Chapters I, II, and X. On DVD.

Colorado River Board of California, draft Colorado River Water Use Plan, dated May 11, 2000.

Bureau of Reclamation, Final Administrative Determination of Appropriate and Equitable Shares of the Yuma Mesa Division's Colorado River Water Entitlement for the North Gila Valley Unit, the South Gila Valley Unit, and the Mesa Unit of the Gila Project in Arizona, December 27, 2001. Appendix 13.

Inadvertent Overrun and Payback Policy, October 10, 2003. Appendix 29.

CHAPTER 7: UPPER COLORADO RIVER COMMISSION

Introduction

The Colorado River Compact of 1922 apportions the use of the waters of the Colorado River System between the Upper Basin and the Lower Basin. The Upper Colorado River Basin Compact of 1948 divides the water apportioned to the Upper Basin among the Upper Basin States. Article VIII of the Upper Colorado River Basin Compact establishes the Upper Colorado River Commission (Commission), which marked its 60th anniversary in 2008. The Commission plays a vital role in the management of the Colorado River in the Upper Basin and in representing Upper Basin interests in matters involving the Lower Basin.

This chapter discusses the organization and powers of the Commission and the Commission's activities during the period from 1979 through 2008.

Organization and Activities

The Commission is composed of one Commissioner representing each of the States of the Upper Division, specifically, Colorado, New Mexico, Utah, and Wyoming. State Commissioners are designated or appointed in accordance with the laws of each State. The United States may designate a Commissioner if the President elects to do so. The United States Commissioner, if designated, serves as the presiding officer. Since formation of the Commission in 1948, the President has always designated a United States Commissioner.

The Upper Colorado River Basin Compact empowers the Commission to study, measure, forecast, and report on the water supplies of the Colorado River and its tributaries, to make findings relating to the use or depletion of such water in the Upper Basin, and to make an annual report to the Governors of the Upper Basin States and to the President of the United States describing the activities of the Commission for the preceding water year.

As of December 31, 2008, in annual reports transmitted to the President of the United States and the Governors of the Upper Basin States, the Commission described its seven principal activities as follows:

- 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

- 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

- Legal analyses of associated laws, court decisions, reports and problems

- Participating in activities and providing comments on proposals that would increase the beneficial consumptive uses in the Upper Basin, including environmental, fish and wildlife, endangered species and water quality activities to the extent that they might impair Upper Basin development

- Cooperation with water resources agencies of the Colorado River Basin States on water and water-related problems

- An education and information program designed to aid in securing appropriations of funds by the United States Congress for the construction, 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

- 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

The prolonged drought from 2000 through 2008 (which was ongoing as of December 31, 2008) led to the Commission's involvement in the development of additional Colorado River water management mechanisms. The Commission was an active participant in the development of the river management strategies that were adopted by Secretary of the Interior Dirk Kempthorne in his December 2007 Record of Decision for the Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead. See Chapter 2.

The Commission monitors significant developments in the Upper Basin and collaborates with other groups, including the Glen Canyon Adaptive Management Work Group and the Colorado River Basin Salinity Control Forum. See Chapters 3 and 9 respectively. In recent years, several proposals for additional transbasin diversions have been of particular interest to the Commission. Resolutions have been adopted by the Commission concerning proposals for the Navajo-Gallup Water Supply Project and the Lake Powell Pipeline.

Resolutions relating to the matters discussed in this volume during the period from 1979 through 2008 include the following:

- 03/22/1979: Releases of Water from Colorado River Reservoirs, 1979
- 05/25/1979: Cooperative Snow Survey and Water Supply Forecasting Program of the Soil Conservation Service of the Department of Agriculture
- 09/17/1979: Gaging Stations
- 09/17/1979: Adjustment in Power Rates for the Marketing of Colorado River Storage Project Power
- 03/17/1980: Appropriations of Funds for the On-Farm Salinity Control Program in the Colorado River Basin
- 05/13/1982: Colorado River Enhanced Snowpack Test
- 05/13/1982: *National Wildlife* v. *Gorsuch* (U.S. District Court)
- 01/05/1983: Colorado River Storage Project Power Rate Adjustment
- 12/14/1984: Concerning A Proposal by the Galloway Group, Ltd., to Lease Water Apportioned to the Upper Basin States to the San Diego County Water Authority
- 04/18/1985: Cooperative Snow Survey and Water Supply Forecasting Program of the Department of Agriculture
- 04/02/1986: Construction of Animas-LaPlata Project
- 10/22/1987: Proposed "Hydrologic Determination, 1987 – Water Availability from Navajo Reservoir and the Upper Colorado River Basin for Use in New Mexico"
- 04/28/1988: Continued Funding for Weather Modification Research
- 04/26/1989: Continued Funding for Weather Modification Research
- 07/13/1994: July 1994 States' Depletion Tables
- 06/17/2003: Regarding the Use and Accounting of Upper Basin Water Supplied to the Lower Basin in Utah by the Proposed Lake Powell Pipeline Project

- 06/17/2003: Regarding the Use and Accounting of Upper Basin Water Supplied to the Lower Basin in New Mexico by the Proposed Navajo-Gallup Water Supply Project

- 04/18/2005: Retention of Water in Upper Basin Reservoirs for Water Year 2005

- 06/05/2006: Regarding the Availability of Water from Navajo Reservoir for Navajo Nation Uses within the State of New Mexico

- 12/12/2007: 2007 Upper Basin Depletion Estimates

Chapter 7: List of References

Treaties, Interstate Compacts, and Federal Statutes

Colorado River Compact, 1922. Appendix 1.

Upper Colorado River Basin Compact, 1948. Appendix 3.

Records of Decision (RODs)

Secretary of the Interior, December 13, 2007, Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead. Appendix 35.

Other

Select resolutions of the Upper Colorado River Commission:

Releases of Water from Colorado River Reservoirs, 1979, Commission Resolution, March 22, 1979. DVD Supplement 100.

Cooperative Snow Survey and Water Supply Forecasting Program of the Soil Conservation Service of the Department of Agriculture, Commission Resolution, May 25, 1979. DVD Supplement 101.

Gaging Stations, Commission Resolution, September 17, 1979. DVD Supplement 102.

Adjustment in Power Rates for the Marketing of Colorado River Storage Project Power, Commission Resolution, September 17, 1979. DVD Supplement 103.

Appropriations of Funds for the On-Farm Salinity Control Program in the Colorado River Basin, Commission Resolution, March 17, 1980. DVD Supplement 104.

Colorado River Enhanced Snowpack Test, Commission Resolution, May 13, 1982. DVD Supplement 105.

National Wildlife v. *Gorsuch* (U.S. District Court), Commission Resolution, May 13, 1982. DVD Supplement 106.

Colorado River Storage Project Power Rate Adjustment, Commission Resolution, January 5, 1983. DVD Supplement 107.

Concerning A Proposal by the Galloway Group, Ltd., to Lease Water Apportioned to the Upper Basin States to the San Diego County Water Authority, Commission Resolution, December 14, 1984. DVD Supplement 108.

Cooperative Snow Survey and Water Supply Forecasting Program of the Department of Agriculture, Commission Resolution, April 18, 1985. DVD Supplement 109.

Construction of Animas-LaPlata Project Participating Project, Commission Resolution, April 2, 1986. DVD Supplement 110.

Proposed "Hydrologic Determination, 1987 – Water Availability from Navajo Reservoir and the Upper Colorado River Basin for Use in New Mexico," Commission Resolution, October 22, 1987. DVD Supplement 111.

Continued Funding for Weather Modification Research, Commission Resolution, April 28, 1988. DVD Supplement 112.

Continued Funding for Weather Modification Research, Commission Resolution, April 26, 1989. DVD Supplement 113.

July 1994 States' Depletion Tables, Commission Resolution, July 13, 1994. DVD Supplement 114.

Regarding the Use and Accounting of Upper Basin Water Supplied to the Lower Basin in Utah by the Proposed Lake Powell Pipeline Project, Commission Resolution, June 17, 2003. DVD Supplement 115.

Regarding the Use and Accounting of Upper Basin Water Supplied to the Lower Basin in New Mexico by the Proposed Navajo-Gallup Water Supply Project, Commission Resolution, June 17, 2003. DVD Supplement 116.

Retention of Water in Upper Basin Reservoirs for Water Year 2005, Commission Resolution, April 18, 2005. DVD Supplement 117.

Regarding the Availability of Water from Navajo Reservoir for Navajo Nation Uses within the State of New Mexico, Commission Resolution, June 5, 2006. DVD Supplement 118.

2007 Upper Basin Depletion Estimates, Commission Resolution, December 12, 2007. DVD Supplement 119.

CHAPTER 8: UPPER BASIN WATER DEVELOPMENT

Introduction

The Colorado River Storage Project Act, Public Law (Pub. L.) No. 84-485, 70 Stat. 105 (1956) (CRSPA), authorized the construction of four initial units: Curecanti, later renamed Wayne N. Aspinall; Flaming Gorge; Navajo; and Glen Canyon. CRSPA further authorized participating projects, including the Central Utah Project (CUP) of the Colorado River Storage Project (CRSP). Figures 8-1 and 8-2 show the locations of CRSP initial units and participating projects.

During the period from 1979 through 2008, development in the Upper Basin continued with the construction of some of the participating projects identified in Sections 1 and 2 of CRSPA, as amended. These include the Central Utah, Dolores, and Animas-La Plata Projects. The CUP and its units (subprojects) are each discussed in this chapter. These participating projects each incorporate aspects of Native American water rights settlements discussed in Chapter 10.

During this period, the Bureau of Reclamation (Reclamation) continued to enter into water delivery contracts for water stored in the four CRSP initial units. These contracts are listed at the end of this chapter.

Central Utah Project

The CUP was originally authorized for construction under CRSPA as a participating project. The CUP develops a major portion of the waters of the Colorado River and its tributaries apportioned to the State of Utah by the Upper Colorado River Basin Compact in 1948. The CUP develops water for irrigation uses, municipal and industrial (M&I) uses, instream flows, and power generation. The project also provides recreation, fish and wildlife, flood control, water conservation, and water quality benefits.

As originally planned and authorized, the CUP consisted of six units or subprojects: the Bonneville Unit, the Jensen Unit, the Vernal Unit, the Uintah Unit, the Upalco Unit, and the Ute Indian Unit. The largest and most complex is the Bonneville Unit, which diverts water from the Uintah Basin (a part of the Colorado River Basin) to the Bonneville Basin. The other units were designed to provide for development of local water supplies in the Uintah Basin.

Figure 8-1. Upper Colorado River Basin map.

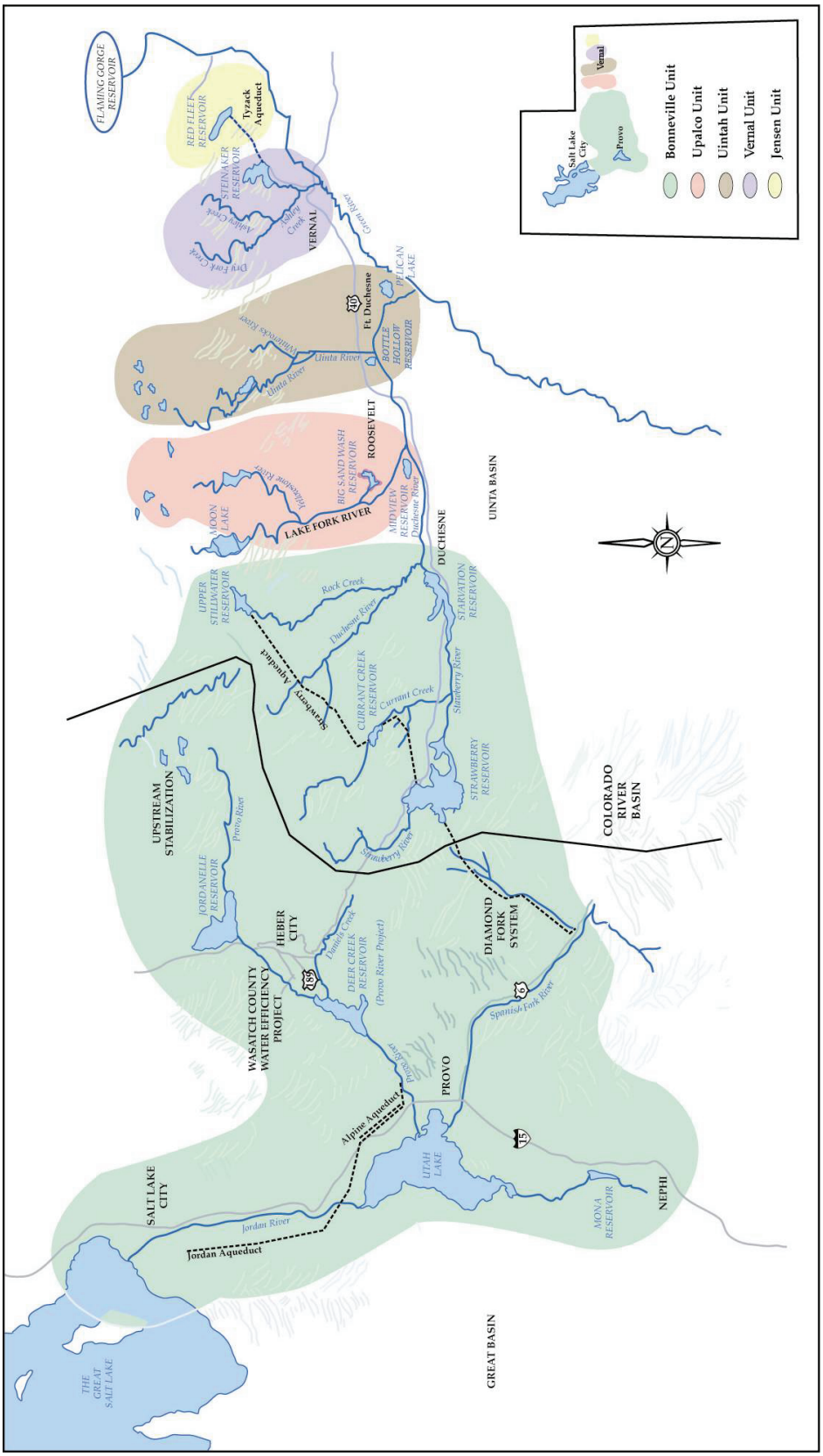

Figure 8-2. Central Utah Project units.
Based on graphic by Central Utah Water Conservancy District. Not to scale.

In the late 1980s, State and local officials asked Congress to authorize the Secretary of the Interior (Secretary) to complete the planning and construction of the remaining portions of the CUP, including the Bonneville Unit, through the Central Utah Water Conservancy District (District) under the guidelines of the Act of June 13, 1956, Pub. L. 84-575, 70 Stat. 274 (1956) (Drainage Facilities and Minor Construction Act). The District is a water conservancy district organized under the laws of the State of Utah, representing local water users in a 10-county area.

Congress responded to local concerns by enacting the Central Utah Project Completion Act, Pub. L. No. 102-575, Titles II-VI, 106 Stat. 4605 (1992) (CUPCA). Through CUPCA, Congress provided direction for completing the CUP under a partnership among the District, the United States Department of the Interior, and the Utah Reclamation Mitigation and Conservation Commission (Commission), an independent Executive Branch agency created by Section 301 of CUPCA. The Commission's regulations may be found at 43 CFR Parts 10000, 10005, and 10010. CUPCA transferred administrative responsibility for completion of the CUP from Reclamation to the Office of the Secretary. As a result, the CUPCA Office, located in Provo, Utah, administers CUPCA activities and the completion of CUP construction under direction of the Assistant Secretary for Water and Science, United States Department of the Interior.

Title II of CUPCA authorized:

- Completion of the CUP
- An increase in the appropriations ceiling
- Local upfront cost sharing of the project's capital cost
- The Secretary to construct the project using the District as the contractor under Drainage Facilities and Minor Construction Act guidelines
- Funding for and establishment of a water conservation program
- The Secretary to oversee project completion
- Reclamation to complete certain tasks with District approval

Title III of CUPCA authorized:

- Establishment of the Commission
- Transfer of certain Reclamation functions to the Commission
- Certain fish, wildlife, recreation, and conservation mitigation projects

- Funding for mitigation under CUPCA

- Expenditures by the Commission of approximately $200 million (in 1991 dollars) to perform mitigation projects, with annual funding dependent upon congressional appropriations

Title IV of CUPCA lays out the mechanism for long-term funding and investment of funds through a United States Treasury account funded with contributions from the United States Department of the Interior, the District, the State of Utah, and the Western Area Power Administration of the United States Department of Energy, to provide for implementation and long-term operation of Commission programs.

Title V of CUPCA addressed the Ute Indian Water Rights Settlement. The settlement is discussed in Chapter 10.

Title VI of CUPCA provides that nothing in Titles II through V modifies or amends the National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (1970) (NEPA) or the Endangered Species Act of 1973, Pub. L. No. 93-205, 87 Stat. 884 (1973).

Bonneville Unit of the Central Utah Project

The Bonneville Unit of the CUP is located in central and northeastern Utah and provides water for the following counties: Salt Lake, Utah, Wasatch, Summit, and Duchesne. Bonneville Unit water is developed by collecting and storing flows during high runoff periods in several streams (principally tributaries to the Duchesne River), purchasing water rights, using part of the existing water supply in Utah Lake, and using project return flows and runoff entering Utah Lake.

The Bonneville Unit includes features that facilitate a transbasin diversion of water from the Uintah Basin to the Bonneville Basin and the development of local water resources in both basins. The completed Bonneville Unit will deliver a permanent supply of 42,000 acre-feet of irrigation water and 157,750 acre-feet of M&I water. It will provide streamflow to maintain fisheries in various streams in the Bonneville Unit area. It will also provide flood control, recreation, hydropower, and fish and wildlife habitat mitigation and conservation.

The Bonneville Unit includes the following systems:

- Starvation Collection System, located in the Uintah Basin

- Strawberry Aqueduct and Collection System (SACS), located in the Uintah Basin

- M&I System, located in the Provo River Basin

- Ute Indian Tribal Development, located in the Duchesne River Basin
- Diamond Fork System, located in Diamond Fork Canyon
- Utah Lake Drainage Basin Water Delivery System (Utah Lake System or ULS), in Diamond Fork and Spanish Fork Canyons and Utah Valley

Starvation Collection System

The Starvation Collection System of the Bonneville Unit was completed in 1970. The system provides water for irrigation and M&I use, flood control, recreation, and fish and wildlife benefits in the Duchesne area of the Uintah Basin. Water storage is provided by the 167,310 acre-foot Starvation Reservoir, which is located on the Strawberry River just above the confluence with the Duchesne River. Starvation Reservoir is filled by winter and spring flows of the Duchesne and Strawberry Rivers. Duchesne River water is diverted by Knight Diversion Dam and conveyed to the reservoir through the Starvation Feeder Conduit.

Starvation Reservoir provides a benefit to irrigators along the Duchesne River in the form of water delivery in the late summer and fall, when streamflows typically decline below the levels necessary for irrigation diversion. Water stored in Starvation Reservoir provides 24,400 acre-feet of irrigation water and 500 acre-feet of M&I water for use in the Uintah Basin. In addition, Starvation Reservoir provides an average of approximately 43,000 acre-feet of water annually to irrigators to replace water diverted in the SACS to Strawberry Reservoir. The reservoir also provides fishery benefits and public recreation.

Strawberry Aqueduct and Collection System (SACS)

The SACS of the Bonneville Unit was completed in the late 1980s. SACS diverts part of the flows of Rock Creek and eight other tributaries of the Duchesne River and conveys the diverted flows through the 36.8-mile-long Strawberry Aqueduct to Strawberry Reservoir. Upper Stillwater Reservoir, with a capacity of 32,009 acre-feet, serves as a regulating reservoir at the head of the Strawberry Aqueduct to provide temporary storage during the high runoff period for later diversion to the aqueduct and storage in Strawberry Reservoir. Currant Creek Reservoir, with a total capacity of 15,671 acre-feet, diverts Currant Creek and five tributaries into the Strawberry Aqueduct. The SACS provides 44,400 acre-feet of project water annually to supplement in-stream flows for fishery mitigation purposes. The capacity of Strawberry Reservoir was enlarged from 273,000 acre-feet to 1,106,500 acre-feet by the construction of Soldier Creek Dam on the Strawberry River. Some of the water stored in the reservoir is released to the Strawberry River to provide fishery flows, but most of the stored water is for transbasin diversion to the Bonneville Basin. In addition to water supply, the SACS provides flood control, recreation, and fish and wildlife benefits.

Municipal and Industrial System (M&I System)

The M&I System provides M&I water to Salt Lake, Utah, and Wasatch Counties and supplemental irrigation water to Wasatch and Summit Counties. The system

provides flood control, recreation, and fish and wildlife benefits. The central feature of the M&I System is Jordanelle Dam, which was completed in 1994 with a capacity of 363,354 acre-feet. Provo River flow that historically flowed into Utah Lake is stored in Jordanelle Reservoir and in Deer Creek Reservoir. Provo River water that previously flowed into Utah Lake is replaced by a combination of Bonneville Unit return flows to the lake, water rights previously acquired by the District in Utah Lake, direct releases of water from Strawberry Reservoir to Utah Lake, and flows that are surplus to Utah Lake rights.

The M&I water for northern Utah County (20,000 acre-feet per year) and Salt Lake County (70,000 acre-feet per year) is released from Jordanelle Reservoir or diverted under direct flow water rights and then rediverted from the Provo River into the Olmsted Flowline. From this diversion, the water is conveyed to the Salt Lake County area by the 38-mile-long Jordan Aqueduct and to northern Utah County through the 14-mile-long Alpine Aqueduct. Water for use in Wasatch County is released from Jordanelle Reservoir and conveyed through the Wasatch County Water Efficiency Project for delivery through local irrigation canals, current secondary (nonpotable) M&I systems, and a future M&I treated water system. Water for use in Summit County is provided from Washington, Trial, and Lost Lakes in the headwaters of the Provo River or directly from the Provo River, both facilitated through an exchange with storage in Jordanelle Reservoir.

In 1999, the CUPCA Office initiated a request for proposals for a Lease of Power Privilege (LOPP) on Jordanelle Dam. A LOPP is granted to non-Federal entities for the development of hydroelectric powerplants on Reclamation projects where power is an authorized purpose. Such leases are authorized under the Town Sites and Power Development Act, Pub. L. No. 59-103, 34 Stat. 116 (1906), and the Reclamation Project Act of 1939, Pub. L. No. 76-260, 53 Stat. 1187 (1939). See Chapter 13.

Through a process of requesting and reviewing proposals, the CUPCA Office selected the Central Utah Water Conservancy District and Heber Light & Power as joint potential lessees for power development at Jordanelle Dam. A Finding of No Significant Impact and an Environmental Assessment entitled *Jordanelle Dam Hydroelectric Project*, dated July 5, 2005, was signed by the CUPCA Program Director. On July 19, 2005, the United States, the Central Utah Water Conservancy District, and Heber Light & Power entered into the Contract for a Lease of Power Privilege for Development of Hydroelectric Power at Jordanelle Dam. The term of the lease is 40 years. Fabrication of the turbines and generators began late in 2005, and construction of the building began in late 2006. The project was completed in the summer of 2008 with a capacity of 12 megawatts (MW); commercial operation began in July 2008.

Diamond Fork System

The Diamond Fork System was constructed to convey water from Strawberry Reservoir to the Bonneville Basin, protect Diamond Fork and Sixth Water Creeks from damaging high flows, and provide minimum flows for fishery and riparian

development. The Diamond Fork System is anticipated to be connected to the Utah Lake System to convey the full transbasin diversion of Bonneville Unit water. The Diamond Fork System was constructed in three phases.

The first phase of the Diamond Fork System included the Syar Tunnel Inlet, Syar Tunnel, Sixth Water Aqueduct, and Sixth Water Flow Control Structure. These facilities together form a continuous, 7.3-mile conduit from Strawberry Reservoir to Sixth Water Creek and currently discharge water into Sixth Water Creek. This phase was constructed by Reclamation. The second phase included the Diamond Fork Pipeline from Monks Hollow downstream to the mouth of Diamond Fork Creek. The third phase consisted of the tunnel connection to the Sixth Water Shaft and Flow Control Structure, the Tanner Ridge Tunnel, the Upper Diamond Fork Pipeline, the Upper Diamond Fork Flow Control Structure, the connection to Upper Diamond Fork Tunnel, the Upper Diamond Fork Tunnel, and the connection to the Diamond Fork Pipeline. Flow control structures are located at Sixth Water Creek, Upper Diamond Fork Creek, and at Monks Hollow. The 19.8-mile-long conduit conveys Bonneville Unit water and Strawberry Valley Project (SVP) water to the mouth of Diamond Fork Canyon. The Diamond Fork System transports a portion of the SVP irrigation flows that were historically conveyed through Sixth Water Creek and Diamond Fork Creek. Water is selectively released into Sixth Water Creek and lower Diamond Fork Creek to restore aquatic and riparian habitats in a more naturally functioning riverine ecosystem.

Ute Indian Tribal Development Project

The purpose of the Ute Indian Tribal Development Project of the Bonneville Unit is to mitigate stream-related fish and wildlife losses on Indian lands and other specific fish and wildlife losses associated with the Bonneville Unit. Bottle Hollow Reservoir was constructed by Reclamation prior to CUPCA to compensate the tribe for economic losses associated with fishing on the portion of Rock Creek located on the Uintah and Ouray Indian Reservation. With a surface area of 420 acres, this reservoir provides fishing opportunities, wildlife habitat, and a basis for recreation-oriented enterprises to provide additional employment and income for tribal members. The Commission, the CUPCA Office, and the tribe developed final plans for the Lower Duchesne River Wetlands Mitigation Project to create, restore, and otherwise enhance riparian wetland habitats along the Duchesne River, as partial mitigation for the Bonneville Unit. This project is intended to fulfill long-standing commitments to mitigate impacts on wetland/wildlife habitats arising from construction and operation of the SACS and to provide additional wetland/wildlife mitigation to the tribe. Originally proposed in 1965, this project had many planning revisions. The *Final Environmental Impact Statement for the Lower Duchesne River Wetlands Mitigation Project* (Final EIS) was completed in April 2008. The United States Department of the Interior and the Commission published a notice of availability of the Final EIS in the *Federal Register* at 73 Fed. Reg. 19866 (April 11, 2008). The Commission issued the *Record of Decision, Lower Duchesne River Wetlands Mitigation Project Bonneville Unit, Central Utah Project* on May 22, 2008, and published a

notice in the *Federal Register* at 73 Fed. Reg. 47645 (August 14, 2008). The *Record of Decision for the Lower Duchesne Wetlands Mitigation Project Final Environmental Impact Statement* dated September 22, 2008, was signed by the Secretary for the Final EIS.

Utah Lake System (ULS)

The ULS is the final phase of the Bonneville Unit. On September 30, 2004, the CUPCA Office filed the *Utah Lake Drainage Basin Water Delivery System Final Environmental Impact Statement* (Final EIS). Notice of availability of the Final EIS was published in the *Federal Register* at 70 Fed. Reg. 2651 (January 14, 2005). On December 22, 2004, the Assistant Secretary for Water and Science signed the *Record of Decision, Utah Lake Drainage Basin Water Delivery System*. The Central Utah Water Conservancy District completed the final planning document (*Supplement to the 1988 Definite Plan Report for the Bonneville Unit*), which was approved by the CUPCA Office on November 18, 2004. Contracts for implementation of the ULS were executed on March 15, 2005. Construction of the ULS began in 2007.

The ULS includes the following features:

- Sixth Water Powerplant and Transmission Line
- Upper Diamond Fork Powerplant and Underground Transmission Cable
- Spanish Fork River Flow Control Structure
- Spanish Fork Canyon Pipeline
- Spanish Fork–Santaquin Pipeline
- Santaquin–Mona Reservoir Pipeline
- Mapleton–Springville Lateral Pipeline
- Spanish Fork–Provo Reservoir Canal Pipeline

These features of the ULS will:

- Deliver ULS M&I secondary water to southern Utah County municipalities
- Deliver water to Hobble Creek to provide June sucker spawning flows and supplemental flow during other times of the year
- Deliver water for supplemental flow in the lower Provo River

- Deliver M&I water to the Provo Reservoir Canal and the Jordan Aqueduct for conveyance to Salt Lake County

- Generate electric power incident to water deliveries at two hydropowerplants

The proposed Sixth Water Powerplant will have a capacity of 45 MW, and the proposed Upper Diamond Fork Powerplant will have a capacity of 5 MW. The Spanish Fork Canyon Pipeline and Spanish Fork–Santaquin Pipeline will convey up to 10,200 acre-feet of SVP irrigation water to southern Utah County municipalities through the new ULS pipelines, on a space-available basis.

The ULS yield includes:

- 30,000 acre-feet of M&I water to be delivered into Salt Lake County, which will assign about 8,000 acre-feet to the Secretary of the Interior for instream flows

- 30,000 acre-feet of M&I water to be delivered to southern Utah County municipalities, which will assign about 3,000 acre-feet to the Secretary of the Interior for instream flows

- 40,310 acre-feet, minus conveyance losses, to be delivered to Utah Lake for exchange to Jordanelle Reservoir under the M&I System

Of the 40,310 acre-feet, 16,273 acre-feet would be released down the Spanish Fork River during the winter months, an average of 16,000 acre-feet would be conveyed through new pipelines to the lower Provo River to assist in meeting instream flows, and 8,037 acre-feet would be conveyed to Hobble Creek to assist in the recovery of the June sucker, an endangered fish indigenous to Utah Lake.

Jensen Unit of the Central Utah Project

The Jensen Unit of the CUP in Uintah County in northeastern Utah serves Ashley Valley and the area extending east of the valley to the Green River. The Jensen Unit, as originally planned, was intended to develop about 22,600 acre-feet of water annually: 18,000 acre-feet for M&I and 4,600 acre-feet for irrigation. The Uintah Water Conservancy District operates the Jensen Unit through which 440 agricultural acres receive a full irrigation water supply and 3,640 acres receive a supplemental water supply.

Initial planning for the Jensen Unit in the 1970s anticipated the imminent development of full-scale oil shale production, which would require large amounts of M&I water. For this reason, the Jensen Unit water supply was primarily developed to satisfy M&I demand. The development of 12,000 acre-feet of M&I water required the construction of the Burns Bench Pumping Plant.

As construction of Red Fleet Dam and the Tyzack Aqueduct neared completion, oil prices dropped and imminent development of oil shale production was no longer anticipated. Consequently, the Burns Bench Pumping Plant was not constructed as originally planned, reducing the Jensen Unit M&I water supply to 6,000 acre-feet.

The local water users were able to use 2,000 acre-feet of the 6,000-acre-foot M&I project water supply. In Section 203(g) of CUPCA, Congress authorized the Secretary to enter into an amendatory contract between the United States and the Uintah Water Conservancy District to provide, among other things, for part of the M&I water obligation that was the responsibility of the Uintah Water Conservancy District to be retained by the United States with a corresponding part of the water supply to be controlled and marketed by the United States. Congress also doubled the size of the conservation pool in Red Fleet Reservoir to 4,000 acre-feet to enhance fishery and recreational opportunities and for other purposes as recommended by the Commission, the Utah Division of Wildlife Resources, the United States Fish and Wildlife Service, and the Utah Division of Parks and Recreation. The expanded conservation pool reduced the yield of the reservoir by 700 acre-feet; thus, the unmarketed M&I supply was reduced to 3,300 acre-feet.

In the 1990s, Reclamation determined that irrigation drains constructed as part of the project were delivering unacceptable levels of selenium to Stewart Lake. In 1999, Reclamation committed 780 acre-feet of the unmarketed M&I supply from Red Fleet Reservoir to Stewart Lake for mitigation purposes, leaving an available unmarketed M&I supply of 2,520 acre-feet.

As of December 31, 2008, oil and gas exploration and production in the area had increased significantly, and oil shale production was thought to be feasible. Accordingly, water user interest in contracting for the remaining unmarketed M&I supply and constructing the Burns Bench Pumping Plant was renewed.

The Jensen Unit, as constructed, is comprised of the Red Fleet Dam and Reservoir, the Tyzack Pumping Plant and Aqueduct, and the irrigation drains. The Jensen Unit was completed by Reclamation in 1983.

Vernal Unit of the Central Utah Project

The Vernal Unit of the CUP is located near the City of Vernal in the Ashley Valley of northeastern Utah. The Vernal Unit provides a supplemental water supply for the irrigation of about 14,781 acres, as well as 1,600 acre-feet of M&I water for the communities of Vernal, Naples, and Maeser. Construction of the Vernal Unit began in 1959 and was completed in 1963. The Uintah Water Conservancy District operates the Vernal Unit. The Vernal Unit consists of Steinaker Dam and Reservoir and various diversion and conveyance facilities including the Thornburgh Diversion Dam, the Steinaker Feeder Canal, and the Steinaker Service Canal.

Uintah and Upalco Units of the Central Utah Project

Section 203(a) of CUPCA provided for the construction of the Uintah Basin Replacement Project (Replacement Project) to replace, in part, the Uintah and Upalco Units which were not constructed. The Replacement Project's purpose is to provide additional early and late season irrigation water, provide M&I water supplies, and modify and operate water management facilities for environmental purposes. The Replacement Project provided for reservoir-stabilizing modifications to 13 high mountain dams built in the 1920s within the High Uintas Wilderness Area, construction of the new Big Sand Wash Feeder Diversion Structure and Pipeline, enlargement of the Big Sand Wash Reservoir, construction of a new Big Sand Wash-to-Roosevelt Pipeline, modifications to the Moon Lake outlet works, and fish and wildlife mitigation and enhancement. Environmental needs include fishery resources that are diminished by widely fluctuating streamflows, diversions, and recurring instream activities such as rebuilding irrigation diversions, channelization, and bank stabilization. The District completed construction of the primary features of the Replacement Project in 2006.

Ute Indian Unit of the Central Utah Project

The proposed Ute Indian Unit of the CUP included a pipeline from Flaming Gorge Dam and Reservoir to the Uintah Basin. The Ute Indian Unit was never constructed due to engineering and environmental challenges. Under the provisions of Title V of CUPCA, the United States provided financial compensation to the Ute Indian Tribe.

Dolores Project

The Dolores Project is located in the Dolores and San Juan River Basins in southwestern Colorado. The project develops water from the Dolores River for irrigation, M&I use, recreation, fish and wildlife, and production of hydroelectric power. It also provides flood control and aids in economic redevelopment in the region. The Dolores Project was authorized by the Colorado River Basin Project Act, Pub. L. No. 90-537, Title V, 82 Stat. 896 (1968) (CRBPA or Basin Project Act), as a CRSP participating project, and was further authorized by the Act of October 30, 1984, Pub. L. No. 98-569, 98 Stat. 2933 (1984), amending the Colorado River Basin Salinity Control Act, Pub. L. No. 93-320, 88 Stat. 266 (1974). The Colorado Ute Indian Water Rights Settlement Act of 1988, Pub. L. No. 100-585, 102 Stat. 2973 (1988) provides for water from the Dolores Project to be supplied to the Ute Mountain Ute Tribe. See Chapter 10. Construction began in September 1977, and the largest structure in the project, McPhee Dam, was completed in 1986. McPhee Reservoir was created with the construction of McPhee Dam and the Great Cut Dike in a saddle on the Dolores-San Juan Divide. The reservoir has a total capacity of 381,200 acre-feet.

In addition to McPhee Dam and Reservoir and the Great Cut Dike, other structures in the Dolores Project include Dawson Draw Dam and Reservoir, Dolores Tunnel, Dolores Canal, Towaoc Canal, Great Cut Pumping Plant, Dove Creek Canal, South Canal, and the Cortez-Towaoc Pipeline. The Dolores Project includes two powerplants, McPhee Dam Powerplant, with a generating capacity of 1.3 MW, and Towaoc Canal Powerplant, with a generating capacity of 11.5 MW. The Dolores Project serves approximately 62,000 acres of irrigable land and provides M&I water to the communities in the region.

Animas-La Plata Project

The Animas-La Plata Project, located near Durango, Colorado, was authorized as a CRSP participating project in Title V of the Basin Project Act to provide a 191,000-acre-foot, multi-purpose irrigation and M&I water supply for Colorado and New Mexico. The project was authorized in 1988 as part of the Colorado Ute Indian Water Rights Settlement Act and was later scaled back in the Colorado Ute Settlement Act Amendments of 2000, Pub. L. No. 106-554, Appendix D, 114 Stat. 2763A-258 (2000). See Chapter 10. Construction, funded by Congress in 2000, commenced in 2002.

The Animas-La Plata Project has four main components:

- A 120,000-acre-foot, off-stream reservoir at Ridges Basin
- A 280-cubic-feet-per-second capacity pumping plant on the Animas River south of the City of Durango
- A pipeline from the pumping plant to the reservoir
- The Navajo Nation Municipal Pipeline to transport water from the Farmington, New Mexico, area to the Shiprock, New Mexico, area for the benefit of the Navajo Nation

In fall 2007, the embankment of Ridges Basin Dam was completed. Congress named the reservoir Lake Nighthorse after Ben Nighthorse Campbell, the former Colorado Congressman and Senator who promoted the project. As of December 31, 2008, Reclamation anticipated placing the dam, reservoir, pumping plant, and pipelines into full operation in 2011.

Colorado River Storage Project Water Delivery Contracts

Water delivery contracts for municipal uses for water stored in the initial units of the CRSP are made pursuant to Section 4 of CRSPA, Section 9(c)(2) of the Reclamation Project Act of 1939, and other Federal reclamation laws. The

storage of water from the Colorado River and its tributaries in the Upper Basin for beneficial consumptive use is recognized in Section 1 of CRSPA as one of the project's primary purposes.

See Table 8-1 for a listing of these units and the water delivery contracts associated with each as of December 31, 2008.

Table 8-1. Active (2008) Colorado River Storage Project Initial Unit Water Service Contracts

Contractor	Contract No.	Acre-Feet/Year
Navajo		
Sunterra	7-07-R0500	50
Jicarilla Apache Nation	unnumbered	33,500
Glen Canyon		
Page, AZ	6-07-01-00033	2,740
Salt River Project	14-06-400-5033	40,000
Wayne N. Aspinall (formerly Curecanti)		
Lake City, CO	9-07-40-R0790	25
Lake City, CO	03-WC-40-8740	50
Mount Crested Butte, CO	9-07-40-R1020	98
Stratmans	92-07-40-R1510	1
Hidden Valley Ranch	96-07-40-R2090	2
Castle Mountain Ranches L.L.C.	96-07-40-R3040	30
Vernon & Linda Vandehey	96-07-40-R3020	1
Dr. Henry Estess	97-07-40-R3050	17
Crested Butte South Metro.	97-07-40-R3070	13
Lazear Domestic Water Corp.	98-07-40-R5000	44
Lazear Domestic Water Corp.	03-WC-40-8840	44
Horizon Ranch Corporation	98-07-40-R6050	4
East Alum Creek Ranch Corp.	98-07-40-R6060	23
Russell, et. al.	99-07-40-R6120	3
Whestone Vista L.L.C.	99-07-40-R6390	1
Spring Creek Resort Home Assoc.[1]	00-07-40-R6510	1
K. David Pinkerton & Lorraine C. Rup[2]	00-WC-40-654	1
Mark Schumacher	00-WC-40-655	4
James Squirrell	01-WC-40-6790	25
Karl Hipp	02-WC-40-8080	1
Larry Allen	02-WC-40-8100	1
Gary Knerr[3]	02-WC-40-8110	1
Steven K. & Mary Kay C. Fry[4]	02-WC-40-8160	1
Eldon Gensheimer	02-WC-40-8340	1
William Dusterdick (Deer Haven)	02-WC-40-8370	4
Glacier Lily Association	02-WC-40-8470	2
Shea Water Company	02-WC-40-8480	8
Robert Sharpe	02-WC-40-8500	1
Two Creeks Water Company	02-WC-40-8520	5
Butte Realty Company	03-WC-40-8610	4
Heatherwood Villas Condo Assoc.	03-WC-40-8680	2
Riverland Lot Owners' Assoc.	03-WC-40-8750	14

Contractor	Contract No.	Acre-Feet/Year
C. Lamar Norsworthy	03-WC-40-8760	2
Paul A. Hudgeons	03-WC-40-8790	1
Elk Meadows Homeowners' Assoc.	03-WC-40-8890	3
Almont Resort	03-WC-40-8920	2
Kirt T. and Cathy Buttermore[5]	03-WC-40-8940	1
Skyland Metropolitan District	04-WC-40-8970	100
Hawks Haven LLC	04-WC-40-9000	1
Robert V. Ketchum	04-WC-40-9030	1
Upper Gunnison River WCD	04-WC-40-010	500
Mountain View Amish-Mennonite	04-WC-40-330	1
TDX, L. P.	04-WC-40-340	1
Majestic View Subdivision	04-WC-40-380	6
Dry West Nursery	05-WC-40-400	3
United Companies	05-WC-40-480	22
Bowie Resources LLC	05-WC-40-500	105
Downey Excavating Inc.	05-WC-40-510	2
Double Tree Ranch East LLC	06-WC-40-690	1
Cecil and Patricia Farnsworth	06-WC-40-720	1
Joseph W. Foran	06-WC-40-760	5
G.W. Spore Family Minor Subdvsn	06-WC-40-770	1
Lois Maloney	06-WC-40-880	1
Joe Edward Segrest	06-WC-40-890	1
Michael Schell & Nancy Courtney	06-WC-40-920	1
Arlo Cox	07-WC-40-960	1
D. Martin & Terrie L. Watts Subdvsn	07-WC-40-970	1
Equivest Limited Partnership	07-WC-40-980	1
Riverwalk Estates, LLLP	07-WC-40-160	8
Oxbow Mining, LLC	07-WC-40-180	3
John & Joan Holton	07-WC-40-260	1
Oldcastle SW Group (United Comp)	07-WC-40-290	5
Flaming Gorge		
Ward Creek LLC	08-WC-40-291	1
Daggett County, Utah	01-WC-40-6860	1,000
Brinegar Sheep Company	14-06-400-4556	5
Total		**78,510**

[1]Assigned from R&D Investments

[2]Assigned from Margaret W. Furey

[3]Assigned from Oliver Woods

[4]Assigned from David and Rebecca Dennis

[5]Assigned from Harrison F. and Patricia E. Russell

Chapter 8: List of References

Treaties, Interstate Compacts, and Federal Statutes

Act of April 16, 1906, Pub. L. No. 59-103, 34 Stat. 116 (1906) (Town Sites and Power Development Act).

Reclamation Project Act of 1939, Pub. L. No. 76-260, 53 Stat. 1187 (1939).

Upper Colorado River Basin Compact, 1948. Appendix 3.

Colorado River Storage Project Act, Pub. L. No. 84-485, 70 Stat. 105 (1956). On DVD in *Updating the Hoover Dam Documents 1978* at I-99.

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Colorado River Basin Project Act, Pub. L. No. 90-537, Title V, 82 Stat. 896 (1968). On DVD in *Updating the Hoover Dam Documents 1978* at XII-9.

National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (1970).

Endangered Species Act of 1973, Pub. L. No. 93-205, 87 Stat. 884 (1973).

Act of October 30, 1984, Pub. L. No. 98-569, 98 Stat. 2933 (1984), amending and supplementing:

> Colorado River Basin Salinity Control Act, Pub. L. No. 93-320, 88 Stat. 266 (1974). On DVD in *Updating the Hoover Dam Documents 1978* at XIV-14.

Colorado Ute Indian Water Rights Settlement Act of 1988, Pub. L. No. 100-585, 102 Stat. 2973 (1988), later amended and supplemented by:

> Colorado Ute Settlement Act Amendments of 2000, Pub. L. No. 106-554, Appendix D, 114 Stat. 2763A-258 (2000).

Central Utah Project Completion Act, Pub. L. No. 102-575, Titles II-VI, 106 Stat. 4605 (1992).

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43 CFR Part 10000, Organization and Functions (Utah Reclamation Mitigation and Conservation Commission).

43 CFR Part 10005, Policies and Procedures for Developing and Implementing the Commission's Mitigation and Conservation Plan (Utah Reclamation Mitigation and Conservation Commission).

43 CFR Part 10010, Policies and Procedures for Implementing the National Environmental Policy Act (Utah Reclamation Mitigation and Conservation Commission).

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73 Fed. Reg. 19866 (April 11, 2008), Central Utah Project Completion Act. Notice of Availability, Final Environmental Impact Statement (FEIS), Lower Duchesne River Wetlands Mitigation Project (LDWP), Duchesne and Uintah Counties, UT.

73 Fed. Reg. 47645 (August 14, 2008), Utah Reclamation Mitigation and Conservation Commission. Notice of Availability of the Record of Decision for the Lower Duchesne River Wetlands Mitigation Project (LDWP), Duchesne and Uintah Counties, UT.

Records of Decision (RODs)

Secretary of the Interior, December 22, 2004, *Record of Decision, Utah Lake Drainage Basin Water Delivery System*. DVD Supplement 98.

Utah Reclamation Mitigation and Conservation Commission, May 22, 2008, *Record of Decision, Lower Duchesne River Wetlands Mitigation Project Bonneville Unit, Central Utah Project*.

Secretary of the Interior, September 22, 2008, *Record of Decision for the Lower Duchesne Wetlands Mitigation Project Final Environmental Impact Statement*. DVD Supplement 99.

Contracts and Agreements

Contract for a Lease of Power Privilege for Development of Hydroelectric Power at Jordanelle Dam among the United States, Central Utah Water Conservancy District, and Heber Light & Power, July 19, 2005.

Reports

United States Department of the Interior, Central Utah Project Completion Act Office, *Utah Lake Drainage Basin Water Delivery System Final Environmental Impact Statement*, September 30, 2004.

United States Department of the Interior, Central Utah Project Completion Act Office, *Supplement to the 1988 Definite Plan Report for the Bonneville Unit*, November 18, 2004.

United States Department of the Interior, Central Utah Project Completion Act Office, *Jordanelle Dam Hydroelectric Project Environmental Assessment*, July 5, 2005.

CHAPTER 9: SALINITY CONTROL PROGRAM

Introduction

The salinity of the Colorado River increases substantially from its headwaters in the States of Wyoming and Colorado to its termination in the Gulf of Mexico. The effects of salinity are a major concern to water users in the United States and the United Mexican States (Mexico). In a 2005 report entitled *Quality of Water, Colorado River Basin, Progress Report No. 22*, the Bureau of Reclamation (Reclamation) estimated economic damages of $306 to $312 million per year in the United States due to salinity, based on 2004 salinity levels at Imperial Dam.

Approximately half of the salt in the Colorado River is derived from natural sources, such as when ground water flows through salt formations before entering the river or when water from saline springs flows into tributaries and then into the river. Another major contributor to the river's salinity is the use of Colorado River water for irrigated agriculture. Some of the diverted water, once applied to crops, seeps into the ground, picks up salt from the soil, and returns to the river with a much higher salt content. Because some of the diverted water does not return to the river, there is less water in the river to dilute the added salt from the return flows and the salinity of the river further increases.

With the enactment of the Colorado River Basin Salinity Control Act, Public Law (Pub. L.) No. 93-320, 88 Stat. 266 (1974) (Salinity Control Act), Reclamation began efforts to reduce salinity. Title I of the Salinity Control Act addresses programs downstream of Imperial Dam. See Chapter 4. Title II of the Salinity Control Act addresses measures to be taken upstream of Imperial Dam and authorizes the Secretary of the Interior (Secretary) to implement specific salinity control projects and to conduct planning investigations of other projects. See *Updating the Hoover Dam Documents 1978*, Chapter XIV.

Several amendments to the Salinity Control Act were enacted during the period from 1979 through 2008 and are discussed in this chapter. The salinity control projects constructed by Reclamation in accordance with the Salinity Control Act and its subsequent amendments are also discussed.

Colorado River Basin Salinity Control Act

Salinity Control Projects and Planning Reports

Table 9-1 summarizes the salinity control projects originally authorized under Title II of the Salinity Control Act.

Table 9-1. Summary of Salinity Control Units Authorized by Title II of the Salinity Control Act

Unit	General Description	Salt Removed[1] (tons/year)
Paradox Valley	The Paradox Valley Unit is located near Bedrock, Colorado, about 10 miles east of the Colorado-Utah state line. The Dolores River picks up an estimated 205,000 tons of salt annually as it crosses the Paradox Valley, primarily from the surfacing of natural brine groundwater. The Paradox Valley Unit is designed to prevent this natural salt load from entering the system by intercepting the brine groundwater before it enters the Dolores River, and disposes of the brine by deep well injection. Major project facilities include a brine production well field, brine surface treatment facility, injection facility, an injection well approximately 16,000 feet deep, and associated roads, pipelines, and electrical facilities. Construction of the Paradox Valley Unit was essentially completed in 1996.	112,000
Grand Valley	The Grand Valley Unit is located in west-central Colorado along the Colorado River near Grand Junction. The purpose of the Grand Valley Unit is to reduce the estimated 580,000 tons per year of salt added to the Colorado River as a result of conveyance system seepage and irrigation return flows passing through highly saline soils and the underlying Mancos Shale Formation. The recommended plan included piping and lining selected portions of the irrigation system in the Grand Valley to reduce seepage into the groundwater system. Construction of the Grand Valley Unit was essentially completed in 1998.	127,500
Crystal Geyser	An abandoned well near the Price River, Utah.	n/a[2]
Las Vegas Wash	Located in Clark County in southern Nevada, the Las Vegas Wash is a natural drainage channel that conveys storm runoff and wastewater from the Las Vegas Valley to Lake Mead. The Las Vegas Wash Unit was originally planned to be constructed in phases. The initial phase of the project is the 4-mile long Pittman Bypass Pipeline. The pipeline separates wastewater discharge from highly saline soils by diverting industrial return flow from an open, unlined ditch to reduce groundwater flow and consequent pickup of salts leached from the soil. Construction of the Pittman Bypass Pipeline was essentially completed in 1985. Additional construction was deferred pending the results of further hydrologic studies of the ground-water and surface-water conditions of the Las Vegas Wash. These studies showed that cost effective, technically feasible, and publicly acceptable measures were not available.	3,800

[1] Tons removed in 2004. Salt removal occurred in similar quantities per year for most units from 1998 through 2003. Source: *Quality of Water, Colorado River Basin, Progress Report No. 22*, Bureau of Reclamation, 2005.

[2] Deauthorized under the 1984 amendments to the Salinity Control Act.

Title II further authorized planning reports for four irrigation source control units (Lower Gunnison, Uintah Basin, Colorado River Indian Reservation, and Palo Verde Irrigation District), three point source control units (La Verkin Springs, Littlefield Springs, and Glenwood-Dotsero Springs), and four diffuse source control units (Price-San Rafael Rivers, Dirty Devil River, McElmo Creek, and Big Sandy River), which are summarized in Table 9-2.

As of December 31, 2008, a review of the quantity of salt removed through these salinity projects was underway, and Reclamation anticipates that the values appearing in Table 9-2 will be updated and revised.

Table 9-2. Summary of Planning Reports Authorized by Title II of the Salinity Control Act

Unit	General Description	Salt Removed[1] (tons/year)
Lower Gunnison Basin	The Lower Gunnison Basin Unit is located in west-central Colorado in Delta and Montrose Counties. In 1984, an amendment to the Salinity Control Act authorized portions of the unit for construction. The plan of development included winter water replacement and lateral lining programs in the Uncompahgre River Valley.	43,675
Uintah Basin	The Uintah Basin Unit is located in northeastern Utah. The area includes portions of Duchesne and Uintah Counties. By 2003, Reclamation had implemented a total of 14 projects in the Uintah Basin Unit. These projects reduce salinity by improving the efficiency of existing irrigation projects, including piping selected canals and laterals to gain pressure to run high-efficiency sprinkler irrigation systems.	138,374
Colorado River Indian Reservation	The Colorado River Indian Reservation is located in La Paz County, Arizona, and the eastern parts of San Bernardino and Riverside Counties, California. The purpose of the Colorado River Indian Reservation Unit investigation was to formulate a plan to reduce the salt loading to the Colorado River from irrigation on the reservation. An analysis of the diversions to, and the drainage from, the reservation indicated that the reservation did not make a net salt contribution to the river. Consequently, the investigation was terminated and a concluding report released in 1979.	n/a
Palo Verde Irrigation District	The Palo Verde Irrigation District is located in Riverside and Imperial Counties, California. Water for irrigation is diverted from the Colorado River at the Palo Verde Diversion Dam. The irrigation return flows are collected in a drainage system and returned to the Colorado River. Analyses of water samples returning to the river have shown a downward trend in salinity concentration since the mid-1960s. This trend and the high cost of measures to control salinity led Reclamation to conclude that salinity control would not be cost-effective in this area. In 1988, Reclamation terminated the planning investigation for the Palo Verde Irrigation District Unit.	n/a

Unit	General Description	Salt Removed[1] (tons/year)
La Verkin Springs	La Verkin Springs is located on the Virgin River in southwestern Utah in Washington County. Reclamation evaluated several alternatives for La Verkin Springs, but did not find a feasible or cost-effective method for salinity control. Reclamation suspended further studies and published a concluding report in 1981.	n/a
Littlefield Springs	Located along the lower Virgin River in northeastern Clark County, Nevada, and northwestern Mohave County, Arizona, the Littlefield Springs Unit included natural saline springs near Littlefield, Arizona, and irrigated land along the Virgin River between the springs and Lake Mead. Initial and follow-up studies performed in the 1970s were terminated due to the infeasibility of proposed alternatives for salinity control and a concluding report was published in 1981.	n/a
Glenwood-Dotsero Springs	The Glenwood-Dotsero Springs Unit is located along the Colorado River in Eagle, Garfield, and Mesa Counties in west-central Colorado. The purpose of this unit is to reduce the salt contribution to the Colorado River from mineral springs in two areas, one near the town of Glenwood Springs and the other near the rural community of Dotsero. Reclamation started detailed planning investigations in 1980. Many alternatives were analyzed; the most cost-effective plan at the time could not compete with alternatives available in other units proposed under the Salinity Control Program. A concluding report was completed in 1986.	n/a
Price-San Rafael Rivers	The Price-San Rafael Rivers Unit is located in east-central Utah, in Carbon and Emery Counties. By 2003, Reclamation had implemented a total of eight projects in the Price-San Rafael Rivers Unit. The projects include Ferron, Wellington, Cottonwood, Allen Projects, North Carbon, Moore, Seeley-Collard, and Lawrence South. These projects reduce salinity by improving the efficiency of existing irrigation projects by piping selected canals and laterals to gain pressure to operate sprinkler irrigation systems.	24,629
Dirty Devil River	The Dirty Devil River Unit is located in Emery and Wayne Counties in southern Utah. The study area included Muddy Creek, Fremont and Dirty Devil Rivers, and the tributaries of Muddy Creek, Hanksville Salt Wash, and Emery South Salt Wash. The unit was designed to reduce the salinity of the Dirty Devil and Colorado Rivers by collecting saline spring water in Hanksville Salt Wash and Emery South Salt Wash and disposing of it by deep well injection. Reclamation completed a planning report in 1987. As of 2003, the unit had not been implemented due to its marginal cost-effectiveness.	n/a

Unit	General Description	Salt Removed[1] (tons/year)
McElmo Creek	The McElmo Creek Basin is located in southwestern Colorado in Montezuma county. Early studies showed that salt loading resulted from both irrigation and diffuse sources, with irrigation being the main contributor. The plan was to improve the irrigation system and reduce groundwater seepage from canals to reduce the amount of salt returned to McElmo Creek. The McElmo Creek Unit was authorized for construction in 1984, as part of the Dolores Project, and was essentially completed in 1996.	23,000
Big Sandy River	The Big Sandy River Unit is located in Sweetwater County in southwestern Wyoming. The purpose of the Big Sandy River Unit investigation was to determine the feasibility of lowering the salt inflow to the Big Sandy River. The study was specifically directed toward reducing salt pickup from seeps and springs along a 26-mile reach of the Big Sandy River west of Eden, Wyoming. Studies conducted in cooperation with the United States Department of Agriculture (USDA) indicated that salinity control of on-farm irrigation by USDA was the most cost-effective alternative for controlling salinity in the Big Sandy River Unit, rather than off-farm alternatives implemented by Reclamation. USDA's ongoing program to control salinity on the Big Sandy River began in 1988. As of 2003, the unit had not been implemented.	n/a

[1]Tons removed in 2004. Salt removal occurred in similar quantities per year for most units from 1998 through 2003. Source: *Quality of Water, Colorado River Basin, Progress Report No. 22*, Bureau of Reclamation, 2005

Statutory Amendments

The Salinity Control Act was amended in 1980, 1984, 1995, 1996, 2000, and 2008. The 1980 amendment authorized a desalting research program, which began in 1989. See Chapter 4.

The 1984 amendments, in the Act of October 30, 1984, Pub. L. No. 98-569, 98 Stat. 2933 (1984), directed the Secretary of Agriculture to establish a voluntary on-farm cooperative salinity control program within the United States Department of Agriculture (USDA). The 1984 amendments also modified the United States Department of the Interior's program for salinity control in several respects by providing:

- Authorization to construct Stage I of the Lower Gunnison Basin Unit and the McElmo Creek Unit as part of the Dolores Project
- Deauthorization of the Crystal Geyser Unit

- Direction to the Secretary to develop a comprehensive program to minimize the salt contributed from public lands administered by the Bureau of Land Management (BLM)

- Direction to the Secretary to give preference to alternatives that reduce salinity at the least cost per unit of salinity reduction

- Authorization for joint feasibility studies with industrial water users as part of ongoing Saline Water Use and Disposal Opportunities activities

- Authorization for the Secretary to contract with non-Federal entities to construct, operate, maintain, and replace authorized salinity control facilities

- Requirement for concurrent replacement of incidental fish and wildlife values foregone as salinity control units are constructed

- Requirement to comply with procedural and substantive State water laws

- Authorization for advance planning studies on Sinbad Valley

The 1995 amendments, contained in the Act of July 28, 1995, Pub. L. No. 104-20, 109 Stat. 255 (1995), changed the United States Department of the Interior's approach to salinity control. As enacted in 1974, the Salinity Control Act envisioned and authorized large, federally constructed salinity control projects modeled after Reclamation's water development projects. The 1995 amendments authorized adoption of an open, competitive grant process as an alternative to federally constructed projects. The 1995 amendments:

- Authorized Reclamation to implement a basinwide salinity control program in the Colorado River Basin

- Authorized Reclamation to fund projects sponsored by non-Federal entities to control salinity through a competitive award process open to the public

- Increased by $75 million the amount authorized to be appropriated for Reclamation to carry out salinity control measures

The 1996 amendments, contained in the Federal Agriculture Improvement and Reform Act, Pub. L. No. 104-127, Title III-Subtitle D, 110 Stat. 1006 (1996), permitted upfront cost sharing by the Upper Colorado River Basin Fund and the Lower Colorado River Basin Development Fund in lieu of repayment.

The 2000 amendments, contained in the Act of November 7, 2000, Pub. L. No. 106-459, 114 Stat. 1987 (2000), increased the authorized appropriation ceiling for Reclamation's salinity control programs by an additional $100 million.

The 2008 amendments, contained in the Food, Conservation, and Energy Act of 2008, Pub. L. No. 110-246, Title II, Subtitle I, Section 2806, 122 Stat. 1651 (2008), established the Basin States Program, directed that it be implemented by the Secretary through Reclamation, and clarified the authority for expenditure of cost-share funds from the Upper and Lower Colorado River Basin Funds (Basin Funds). The Basin States Program is implemented by the Secretary either directly or through grants or the advancement of funds to Federal or non-Federal entities. The program carries out: cost-effective measures and associated works to reduce salinity from multiple sources; operation and maintenance of salinity control features constructed under the Colorado River Basin salinity control program; and studies, planning, and administration of salinity control activities. The statute directed that money from the Basin Funds used for cost-sharing in the Reclamation and USDA-Natural Resources Conservation Service salinity control programs be administered through the Basin States Program.

Progress Toward Salinity Control

In furtherance of the objectives of the Federal Water Pollution Control Act Amendments of 1972, Pub. L. No. 92-500, 86 Stat. 816 (1972) (Clean Water Act), the Environmental Protection Agency (EPA) approved numeric criteria for salinity levels at three monitoring stations at, or near, Hoover, Parker, and Imperial Dams along the Colorado River. The salinity of the water passing these stations is measured to ensure that the criteria are met.

In 2002, a report entitled *2002 Review - Water Quality Standards for Salinity, Colorado River System*, prepared by the Colorado River Basin Salinity Control Forum for the EPA in compliance with the Clean Water Act, estimated that 1.8 million tons of salt per year would need to be prevented from entering the Colorado River in order to maintain the water quality standards in the Lower Basin through 2025. The salinity control program continues to make progress toward that goal. In 2006, the combined Reclamation, USDA, and BLM salinity efforts were credited with preventing over 1.066 million tons of salt per year from entering the river system. While salinity did increase during the prolonged drought of 2000-2008 (which was ongoing as of December 31, 2008), the numeric salinity criteria set by EPA at, or near, Hoover, Parker, and Imperial Dams were not exceeded.

Salinity control progress is also tracked under Title II of the Salinity Control Act, which requires in Section 206 that the Secretary, beginning on January 1, 1975, submit periodic reports on the Colorado River Basin salinity control program, covering:

> …the progress of investigations, planning, and construction of salinity control units for the previous fiscal year; the effectiveness of such units; anticipated work needed to be accomplished in the future to meet the objectives of this title, with emphasis on the needs during the 5 years immediately following the date of each report; and any special problems that may be impeding progress in attaining an effective salinity control program.

The Salinity Control Act requires the reports to be submitted to the President, the Congress, and the Colorado River Basin Salinity Control Advisory Council (Advisory Council). The Advisory Council was created under Title II which provided that its membership shall consist of up to three representatives from each of the seven Basin States, appointed by the Governor of each respective State. As of December 31, 2008, twenty-three such reports had been prepared by the Secretary, acting through Reclamation.

In addition to the reports prepared by the Secretary, at the end of each fiscal year, involved Federal agencies (the United States Department of the Interior Bureau of Reclamation, Bureau of Land Management, and Fish and Wildlife Service; United States Geological Survey; the USDA – Natural Resources Conservation Service; and the United States Environmental Protection Agency) provide a Federal Accomplishments Report and an oral report to the Advisory Council. The Advisory Council then prepares an Annual Report on the Colorado River Basin Salinity Control Program and sends it to the Secretaries of Interior and Agriculture and the Director of the EPA. The annual report provides recommendations concerning the progress of the Salinity Control Program and the need for specific actions by involved Federal agencies.

Chapter 9: List of References

Treaties, Interstate Compacts, and Federal Statutes

Federal Water Pollution Control Act Amendments of 1972, Pub. L. No. 92-500, 86 Stat. 816 (1972) (Clean Water Act).

Colorado River Basin Salinity Control Act, Pub. L. No. 93-320, 88 Stat. 266 (1974) (on DVD in *Updating the Hoover Dam Documents 1978* at XIV-14), later amended and supplemented by:

Act of September 4, 1980, Pub. L. No. 96-336, 94 Stat. 1063 (1980).

Act of October 30, 1984, Pub. L. No. 98-569, 98 Stat. 2933 (1984).

Act of July 28, 1995, Pub. L. No. 104-20, 109 Stat. 255 (1995).

Federal Agriculture Improvement and Reform Act of 1996, Pub. L. No. 104-127, Title III-Subtitle D, 110 Stat. 1006 (1996).

Act of November 7, 2000, Pub. L. No. 106-459, 114 Stat. 1987 (2000).

Food, Conservation, and Energy Act of 2008, Pub. L. No. 110-246, Title II-Subtitle I, Section 2806, 122 Stat. 1651 (2008).

Reports

Colorado River Basin Salinity Control Forum, *2002 Review - Water Quality Standards for Salinity, Colorado River System*, 2002.

Bureau of Reclamation, *Quality of Water, Colorado River Basin, Progress Report No. 22*, 2005.

Other

Updating the Hoover Dam Documents 1978, Chapter XIV. On DVD.

CHAPTER 10: NATIVE AMERICAN WATER RIGHTS SETTLEMENTS

Introduction

This chapter identifies Native American water rights settlements entered into during the period from 1979 through 2008 in the Colorado River Basin and in various stages of implementation as of December 31, 2008. See Chapter 11 for a discussion of the Native American entitlements to lower Colorado River water at issue in *Arizona* v. *California*.

Each Native American water rights settlement is multifaceted and contains numerous provisions which may address, for example, water entitlements from multiple sources (including surface water and ground water), waivers of claims, and financial commitments. The information in this chapter is limited to the United States' obligations with regard to Colorado River water delivery, including tributaries in the Upper Basin, and the development of delivery infrastructure to implement the settlements. The information in this chapter is not intended to provide an interpretation of any of the Native American water rights settlements described herein.

Numerous statutes relating to Native American water settlements are described in this chapter. Amendments to these statutes that relate to Colorado River water entitlements, including those for the Central Arizona Project (CAP), are also identified; amendments relating to other matters are not.

Over the course of the 30-year period covered by this volume, several of the Native American tribes and communities have adopted name changes. For these tribes and communities, the change is noted at the beginning of each discussion, and then the name of the tribe or community as of December 31, 2008, is used throughout the remainder of the discussion.

Upper Basin Settlements

Southern Ute Indian Tribe and Ute Mountain Ute Tribe

In 1986, the United States, the Southern Ute Indian Tribe, the Ute Mountain Ute Indian Tribe (now the Ute Mountain Ute Tribe), the State of Colorado, the Colorado Water Resources and Power Development Authority, the Animas-La Plata Water Conservancy District, the New Mexico Interstate Stream Commission, the San Juan Water Commission, and Montezuma County, Colorado, negotiated and executed the Agreement in Principle Concerning the

Colorado Ute Indian Water Rights Settlement and Binding Agreement for Animas-La Plata Cost Sharing, dated June 30, 1986 (1986 Agreement in Principle).

On December 10, 1986, the Colorado Ute Indian Water Rights Final Settlement Agreement (1986 Colorado Ute Settlement Agreement) was entered into among the United States, the Southern Ute Indian Tribe, the Ute Mountain Ute Tribe, the State of Colorado, the Animas-La Plata Water Conservancy District, the Dolores Water Conservancy District, the Florida Water Conservancy District, the Mancos Water Conservancy District, the Southwestern Water Conservation District, the City of Durango, the Town of Pagosa Springs, the Florida Farmers Ditch Company, the Florida Canal Company, and Fairfield Communities, Inc.

The Colorado Ute Indian Water Rights Settlement Act of 1988, Public Law (Pub. L.) No. 100-585, 102 Stat. 2973 (1988) (Colorado Ute Settlement Act), authorized the Secretary of the Interior (Secretary) to supply water to the tribes from the Animas-La Plata and Dolores Projects in accordance with the 1986 Colorado Ute Settlement Agreement and also implemented other portions of that settlement agreement.

Under the terms and conditions specified in the 1986 Colorado Ute Settlement Agreement, the Ute Mountain Ute Tribe is entitled to the following allocations of water from the Dolores Project, as measured at McPhee Dam and Reservoir:

- A maximum of 1,000 acre-feet per year of municipal and industrial water
- A maximum of 23,300 acre-feet per year of agricultural irrigation water
- A maximum of 800 acre-feet per year for fish and wildlife development

The 1986 Colorado Ute Settlement Agreement further provided for diversion rights for both the Ute Mountain Ute Tribe and the Southern Ute Indian Tribe from the Animas-La Plata Project for irrigation and municipal and industrial uses.

The Colorado Ute Settlement Act was amended by the Colorado Ute Settlement Act Amendments of 2000, Pub. L. No. 106-554, Appendix D, 114 Stat. 2763A-258 (2000) (2000 Amendments), to reflect substantial changes to the Animas-La Plata Project. In the 2000 Amendments, Congress found that:

> The claims of the Colorado Ute Indian Tribes on all rivers in Colorado other than the Animas and La Plata Rivers have been settled in accordance with the provisions of the Colorado Ute Indian Water Rights Settlement Act of 1988 (Public Law 100-585; 102 Stat. 2973).

The 2000 Amendments provide that "in order to settle the outstanding claims of the [Southern Ute Indian Tribe and the Ute Mountain Ute Tribe] on the Animas and La Plata Rivers," the Secretary, acting through the Bureau of

Reclamation (Reclamation), is authorized to complete construction of and operate and maintain certain facilities to divert and store water from the Animas River. The facilities are to provide for an annual average depletion of 57,100 acre-feet of water to be used for a municipal and industrial water supply allocated among specified parties. Section 302 of the 2000 Amendments modifies the Colorado Ute Settlement Act and provides that Reclamation is specifically authorized to:

> (ii) deliver, through the use of the project components referred to in clause (i), municipal and industrial water allocations –
>
> (I) with an average annual depletion not to exceed 16,525 acre-feet of water, to the Southern Ute Indian Tribe for its present and future needs;
>
> (II) with an average annual depletion not to exceed 16,525 acre-feet of water, to the Ute Mountain Ute Indian Tribe for its present and future needs;

The 2000 Amendments further provided for the possible reallocation to the tribes of certain water initially allocated under the statute to others, under conditions specified in the statute. After the 2000 Amendments were enacted, the Amended and Restated Agreement in Principle Concerning the Colorado Ute Indian Water Rights Settlement and Binding Agreement for Animas-La Plata Cost Sharing was entered into among the United States, the Southern Ute Indian Tribe, the Ute Mountain Ute Tribe, the State of Colorado, the Colorado Resources and Power Development Authority, the Animas-La Plata Water Conservancy District, the New Mexico Interstate Stream Commission, the San Juan Water Commission, and Montezuma County, Colorado, on November 9, 2001. The purpose of the amended and restated agreement was to reflect the 2000 Amendments and the substantial changes to the Animas-La Plata Project, to effectuate changes concerning final settlement of the reserved water rights of the Ute Mountain Ute Tribe and the Southern Ute Indian Tribe, and to address issues relating to cost sharing and financing necessitated by the changes in the Animas-La Plata Project.

Consent decrees relating to the tribal entitlements were filed in the State court in Colorado, as required by the terms of the 1988 Colorado Ute Settlement Act and the 2000 Amendments.

As of December 31, 2008, the dam, reservoir, pumping plant, and pipelines for the Animas-La Plata Project were expected to be in full operation in 2011.

Jicarilla Apache Nation

The Jicarilla Apache Tribe Water Rights Settlement Act, Pub. L. No. 102-441, 106 Stat. 2237 (1992), provides for water to be made available annually to the Jicarilla Apache Tribe, now the Jicarilla Apache Nation, under a settlement contract in the following amounts under water rights held by the Secretary for the following projects or sources:

- 40,000 acre-foot per year total diversion
  - 33,500 from Navajo Reservoir or Navajo River
  - 6,500 from San Juan-Chama Project

- 32,000 acre-foot per year total depletion
  - 25,500 from Navajo Reservoir or Navajo River
  - 6,500 from San Juan-Chama Project

The 1992 statute provided that the Jicarilla Apache Nation may enter into subcontracts with third parties, subject to the approval of the Secretary, to supply water for beneficial use outside of the reservation for terms not to exceed 99 years. The statute further provides that the Nation is entitled to use any return flows attributable to uses of the water by the Nation or its subcontractors, as long as the water depletions do not exceed the amounts set forth above.

In accordance with the authority provided by the 1992 statute, the Secretary, on behalf of the United States, entered into the Contract Between the United States and the Jicarilla Apache Tribe, dated December 8, 1992, incorporating the terms of the statute. The contract further provided that in time of shortage the Nation would share in the available water supply in the manner set forth in Section 11(a) of the Act of June 13, 1962, Pub. L. No. 87-483, 76 Stat. 96, 99-100 (1962).

As of December 31, 2008, the Jicarilla Apache Nation, with the approval of the Secretary, had entered into two water supply agreements. The first agreement, the Water Supply Agreement between the City of Santa Fe and the Jicarilla Apache Nation, was entered into on September 2, 2004. Under the agreement, the Nation makes available for delivery up to 3,000 acre-feet of water annually from the San Juan-Chama Project to the City of Santa Fe. Under the terms of the agreement, the water availability commenced January 1, 2007, and terminates December 31, 2057, unless otherwise terminated under the provisions of the water supply agreement. The Secretary, acting through Reclamation, approved this water supply agreement on October 27, 2005.

The second agreement, the Water Supply Agreement dated March 2, 2007, was entered into between the Jicarilla Apache Nation and the Public Service Company of New Mexico. Under this agreement, the Nation makes available for delivery up to 8,500 acre-feet of water annually from the Navajo Reservoir. Under the terms of the agreement, the water availability commenced March 2, 2007, the date the agreement was approved by the Secretary, acting through Reclamation, and terminates December 31, 2057, unless otherwise terminated under the provisions of the water supply agreement.

Ongoing Settlement Discussions in the Upper Basin

The Central Utah Project Completion Act (CUPCA) is contained in Titles II-VI of Pub. L. No. 102-575, 106 Stat. 4605 (1992). See Chapter 8. Title V of CUPCA, the Ute Indian Water Rights Settlement, ratifies and approves the proposed

Revised Ute Indian Compact of 1990, dated October 1, 1990, subject to the reratification of that compact by the Ute Indian Tribe and the State of Utah, and authorizes the Secretary to take all actions necessary to implement the compact.

The proposed Revised Ute Indian Compact of 1990 would provide "from waters of the Colorado River System apportioned to the State of Utah" for an apportionment to the United States in trust for the Ute Indian Tribe and others "as Winters Doctrine water rights" a gross diversion of 470,594 acre-feet per year with a depletion of 248,943 acre-feet per year "from all sources in accordance with and as more fully set out in the 'Tabulation of Ute Indian Water Rights'" on file with the Utah State Engineer. The Ute Indian Tribe water entitlement provided for in the proposed Revised Ute Compact of 1990 would have a priority date of October 3, 1861, for some parcels of tribal land and a priority date of January 5, 1882, for other parcels.

In addition to the foregoing quantities, the proposed Revised Ute Compact of 1990 would also provide for the apportionment to the United States in trust for the Ute Indian Tribe of a depletion right of 10,000 acre-feet of water from the Green River, with a priority date of October 3, 1861, for municipal and industrial purposes. As of December 31, 2008, neither the Tribe nor the State had reratified the proposed Revised Ute Indian Compact of 1990, and negotiations were ongoing with respect to the potential modification of the provisions of the proposed compact.

As of December 31, 2008, the Upper Colorado Region of the Bureau of Reclamation was participating in and providing substantial technical assistance and funding in support of the following negotiations with Native American tribes and pueblos in the State of New Mexico: the Navajo-San Juan Settlement, the Taos Settlement (Taos Pueblo), and the Aamodt Settlement (San Ildefonso, Pojoaque, Nambe, and Tesuque Pueblos).

Lower Basin Settlements

Several Native American water rights settlements were entered into during the period from 1979 through 2008 and, as of December 31, 2008, were in various stages of implementation in central and southern Arizona. Construction of the Central Arizona Project (CAP), beginning in the 1970s, helped facilitate these settlements by providing water infrastructure and additional water supplies. See Chapter 5. Many of the Native American water rights settlements incorporate previous allocations of CAP water already under contract to the tribes and communities. Some settlements incorporate CAP water allocations relinquished by non-Indian agricultural subcontractors.

CAP water allocations are a primary focus of the Arizona Water Settlements Act of 2004, Pub. L. No. 108-451, 118 Stat. 3478 (2004) (AWSA). The AWSA

recognizes that a total of 1,415,000 acre-feet per year of Colorado River water is allocated by the Secretary within the framework of the CAP. Of this, 650,724 acre-feet per year is dedicated for use by Native American tribes and communities in Arizona. See AWSA, Section 104(c)(1)(A). As discussed later in this chapter, up to 17,000 additional acre-feet per year may become available for such use in the event an exchange and lease agreement is entered into among the United States, the Gila River Indian Community, and Asarco Incorporated.

The priority of the CAP water in the Native American water rights settlements is either pre-1968 priority water, Indian priority water, municipal and industrial priority water (M&I), or non-Indian agricultural priority water. In addition, certain settlements utilize non-Indian agricultural priority water firmed to be equivalent to M&I priority. The priority system for CAP water is discussed in Chapter 5.

The following sections discuss the Native American water rights settlements utilizing the CAP, and then discuss the Native American water rights negotiations in Arizona and southern California involving the use of Colorado River water, ongoing as of December 31, 2008.

Ak-Chin Indian Community

The Act of July 28, 1978, Pub. L. No. 95-328, 92 Stat. 409 (1978) (1978 Ak-Chin Act), amended in 1984, 1992, and 2000, was the first of a series of Native American water rights settlements in central and southern Arizona. The 1978 Ak-Chin Act directed the Secretary to provide for the permanent delivery to the Ak-Chin Reservation of 85,000 acre-feet of water on an annual basis. The 1978 Ak-Chin Act identified no source for this water but provided a 25-year period in which to secure the supply. To implement the 1978 Ak-Chin Act, the Secretary and the Ak-Chin Indian Community entered into the Contract Between the United States and the Ak-Chin Indian Community to Provide Water and to Settle Claims to Water, dated May 20, 1980. This contract committed the Secretary to securing the 85,000 acre-feet per year provided for in the 1978 Ak-Chin Act but also did not identify a water source.

An Agreement in Principle for Revised Ak-Chin Water Settlement was executed on September 23, 1983, between the Secretary and the Ak-Chin Indian Community with the objective to secure legislation to revise the 1978 Ak-Chin Act. The Act of October 19, 1984, Pub. L. No. 98-530, 98 Stat. 2698 (1984) (1984 Ak-Chin Act) was thereafter enacted.

Section 2(a) of the 1984 Ak-Chin Act directs the Secretary, by January 1, 1988, to deliver annually a permanent water supply of not less than 75,000 acre-feet per year of surface water to the Ak-Chin Reservation. Section 2(c) of the 1984 Ak-Chin Act specifies that in a time of shortage, the deliveries may be reduced, but not below 72,000 acre-feet per year. Section 2(f) of the

1984 Ak-Chin Act identifies two sources of supply for Colorado River water which, in the aggregate, are to be used to meet the Secretary's delivery obligations under Sections 2(a) and 2(c) of the Act:

- Pre-1968 priority Colorado River water from the 50,000 acre-feet annual entitlement acquired under the 1984 Ak-Chin Act by the Secretary from the Yuma Mesa Division of the Gila Project

- CAP Indian priority water from the 58,300 acre-feet per year allocation to the Ak-Chin Indian Community under the 1983 CAP allocations (see Chapter 5) as provided in the December 11, 1980, CAP water delivery contract between the Secretary and the Community, subject to the conditions of the 1984 Act

To meet the requirements of Section 2(a) and 2(c), these aggregated supplies of Colorado River water are provided to the Ak-Chin Indian Community, first from the pre-1968 water, and then as required to fulfill the delivery obligation, from the CAP Indian priority water.

Section 2(b) of the 1984 Ak-Chin Act directs that in any year in which sufficient surface water is available, the Secretary is to deliver additional surface water as requested by the Ak-Chin Indian Community, in an amount not to exceed 10,000 acre-feet per year. The 1984 Ak-Chin Act does not expressly identify the source for this water. As of December 31, 2008, this delivery obligation has been met with CAP water delivered through the CAP to the Ak-Chin Reservation. Reclamation has taken the position that CAP water delivered to satisfy the requirements of Section 2(b) of the 1984 Ak-Chin Act is water other than from the supplies identified in the 1984 Ak-Chin Act to meet the requirements of Sections 2(a) and 2(c) of that statute. The Central Arizona Water Conservation District has expressed a different view and, as of December 31, 2008, the issue remained unresolved.

The Secretary and the Community entered into the Contract Between the United States and the Ak-Chin Indian Community to Provide Permanent Water and Settle Interim Water Rights, dated October 2, 1985, to implement the 1984 Ak-Chin Act.

To the extent, in any given year, the aggregated supplies (50,000 acre-feet acquired from Yuma Mesa Division and 58,300 acre-feet from the 1983 CAP allocation) exceed the Secretary's water delivery obligations for the Ak-Chin Reservation, the 1984 Ak-Chin Act directed the Secretary to allocate this excess water on an interim basis for the CAP. In 1992, Congress directed that the excess water be provided to the San Carlos Apache Tribe as part of a water rights settlement. See discussion of the San Carlos Apache Tribe later in this chapter.

The Ak-Chin Water Use Amendments Act of 1992, Pub. L. No. 102-497, 106 Stat. 3258 (1992) authorized the Ak-Chin Indian Community, subject to the approval of the Secretary, to lease, enter into an option to lease, extend leases, exchange, or temporarily dispose of the settlement water within the areas initially designated under Arizona State law as the Pinal, Phoenix, and Tucson Active Management Areas, with the term of any lease not to exceed 100 years.

The Secretary and the Community amended the 1985 contract with Amendment No. 1, dated December 14, 1994, to provide for the right of the Community to lease or enter into an option to lease the permanent water supply made available to the Community under the 1985 contract. The Secretary and the Community then entered into an Option and Lease Agreement, also dated December 14, 1994, with the Del Webb Corporation (Del Webb) which, upon exercise of the option by Del Webb, granted the corporation a 100-year lease of not less than 6,000 nor more than 10,000 acre-feet per year of the surface water made available to the Community under the 1984 Ak-Chin Act.

The Ak-Chin Indian Community and Del Webb subsequently executed an Amendment No. 1 to the Option and Lease Agreement and a Restated Option and Lease Agreement on January 7, 1999. The Ak-Chin Water Use Amendments Act of 2000, Pub. L. No. 106-285, 114 Stat 878 (2000) ratified and approved the 1994 Option and Lease Agreement among the Community, the United States, and the Del Webb Corporation and authorized and directed the Secretary to execute the Amendment No. 1 previously executed by the Community and the Del Webb Corporation. The Secretary did so, acting through the Bureau of Indian Affairs, which executed the agreement June 14, 2001, and through Reclamation, which executed the agreement on June 29, 2001. Under the amended and restated agreement, the Del Webb Corporation has a lease entitlement of not less than 6,000, nor more than 10,000, acre-feet per year for a 100-year period commencing on the date when the option is exercised.

With the exception of the leased water, the Ak-Chin Indian Community was, as of December 31, 2008, putting the settlement water to use on the reservation using infrastructure financed by the United States.

Tohono O'odham Nation

The Southern Arizona Water Rights Settlement Act of 1982, Pub. L. No. 97-293, Title III, 96 Stat. 1274 (1982) (SAWRSA), amended in 1984 and 1992, and amended and restated in 2004, authorized the settlement of water rights claims of the Papago Tribe for the San Xavier Reservation and the Schuk Toak District of the Sells Papago Reservation. The Papago Tribe is now known as the Tohono O'odham Nation, and the Sells Papago Reservation is now known as the Tohono O'odham (or "main") Reservation.

The Secretary entered into three agreements (collectively, the 1983 settlement agreements), each dated October 11, 1983, to implement the 1982 SAWRSA legislation:

- Contract Between the United States and the Papago Tribe of Arizona to Provide Water and to Settle Claims to Water

- Contract Between the United States and the City of Tucson to Provide for Delivery of Reclaimed Water to the Secretary

- Contract Among the United States, the State of Arizona, and Others to Provide for Contribution to the Cooperative Fund and for Other Purposes, entered into among the United States, the State of Arizona, the City of Tucson, the Anamax Mining Company, the Cyprus Pima Mining Company, Asarco Incorporated, the Duval Corporation, and Farmers Investment Company

Under the 1983 settlement agreements, the Secretary was obligated to deliver to the Tohono O'odham Nation at the San Xavier Reservation 27,000 acre-feet per year of CAP Indian priority water under a December 11, 1980, CAP water delivery contract between the Secretary and the Nation and 23,000 acre-feet per year of water to be acquired within 10 years from an unspecified source.

Under the 1983 settlement agreements, the Secretary was further obligated to deliver to the Tohono O'odham Nation at the Schuk Toak District of the Sells Tohono O'odham Reservation 10,800 acre-feet per year of CAP Indian priority water under a December 11, 1980, CAP water delivery contract between the Secretary and the Nation and 5,200 acre-feet per year of water to be acquired within 10 years from an unspecified source.

The AWSA authorizes and directs the Secretary in Titles I and II to reallocate and deliver CAP non-Indian agricultural priority water to the Tohono O'odham Nation, subject to certain conditions. An integral component of the AWSA is the Southern Arizona Water Rights Settlement Amendments Act of 2004, Pub. L. No. 108-451, Title III, 118 Stat. 3536 (2004) (2004 Amendments), which amended and restated SAWRSA. The Tohono O'odham Settlement Agreement, a restated settlement agreement dated June 12, 2006, conforms the 1983 settlement agreements to the AWSA, including the 2004 Amendments to SAWRSA. Parties to the restated agreement include the United States, the Nation, the State of Arizona, the City of Tucson, Asarco Incorporated, Farmers Investment Company, and allottees.

The Colorado River water available to the Tohono O'odham Nation as part of the 2006 restated settlement agreement, relating to the San Xavier Reservation, includes:

- 27,000 acre-feet per year of CAP Indian priority water under a December 11, 1980, water delivery contract between the Secretary and the Nation

- 23,000 acre-feet per year of CAP non-Indian agricultural priority water reallocated to the Nation in accordance with Section 104(a)(1)(A)(2) of the AWSA

The Colorado River water available to the Tohono O'odham Nation as part of the 2006 restated settlement agreement, relating to the eastern Schuk Toak District (that portion of the Schuk Toak District located within the area designated as the Tucson Active Management Area under Arizona State law), includes:

- 10,800 acre-feet per year of CAP Indian priority water under a December 11, 1980, water delivery contract between the Secretary and the Nation

- 5,200 acre-feet per year of CAP non-Indian agricultural priority water reallocated to the Nation in accordance with Section 104(a)(1)(A)(2) of the AWSA

In the event that deliveries of CAP non-Indian agricultural priority water are reduced in time of shortage, the Secretary is required by the AWSA to supply water to the Tohono O'odham Nation from other sources in order to "firm" the collective 28,200[1] acre-feet per year supply of CAP non-Indian agricultural priority water provided to the Nation under the 2004 Amendments so that the water is equivalent in priority to CAP M&I priority water. See Chapter 5. The firming obligation began January 1, 2008, and extends for 100 years. Under the October 11, 1983, Contract Between the United States and the City of Tucson to Provide For Delivery of Reclaimed Water to the Secretary, the Secretary obtained rights to 28,200 acre-feet of reclaimed water per year from the City of Tucson. This water may be used by the Secretary directly, or through exchange, to meet the firming obligation.

The 2004 Amendments provide that the Tohono O'odham Nation's entitlement to CAP water identified in sections 304(a) and 306(a) of the SAWRSA, as amended by the 2004 Amendments, may be devoted to any use at any location within the "Nation's Reservation" as that term is defined in the statute. The 2004 Amendments further provide that the Nation may use this CAP water outside the Nation's Reservation within the CAP service area, subject to the approval of the Secretary, to assign, exchange, lease, or provide an option to lease or temporarily dispose of this CAP water, with the term of any such agreement not to exceed 100 years.

[1] Of this, 23,000 acre-feet per year is for the San Xavier Reservation and 5,200 acre-feet per year is for the eastern Schuk Toak District.

On May 5, 2006, the Secretary and the Nation entered into Amendment No. 1 to the December 11, 1980, CAP water delivery contract. This amendment, required by section 309(g) of the 2004 Amendments, incorporates the provisions of the 2004 Amendments and the 2006 restated settlement agreement relating to CAP water. Amendment No. 1 superseded and replaced the Nation's December 11, 1980, CAP water delivery contract in its entirety.

The Asarco Settlement Agreement, dated June 12, 2006, entered into among the United States, the Tohono O'odham Nation, the San Xavier District, Asarco Incorporated, and allottees, is attached as Exhibit 13.1 to the 2006 restated settlement agreement. Under the Asarco Settlement Agreement, the Nation is to deliver to Asarco Incorporated up to 10,000 acre-feet of CAP water annually for use in Asarco Incorporated's operations both on and off the Nation's Reservation. This obligation terminates 25 years after December 14, 2007, or the date Asarco Incorporated terminates mining and processing activities at the Mission Complex, whichever occurs first. As of December 31, 2008, no further agreements had been entered into to allow others the use of a portion of the Nation's CAP entitlement.

The Colorado River Basin Project Act, Pub. L. No. 90-537, 82 Stat. 885 (1968) (CRBPA or Basin Project Act) and the 2004 Amendments authorize construction of water delivery infrastructure to permit the Tohono O'odham Nation to take delivery of CAP water.

With respect to the Schuk Toak District, the Secretary is directed by the 2004 Amendments to complete the design and construction of the irrigation system and delivery and distribution system to serve the existing farm in the eastern Schuk Toak District.

With respect to the San Xavier Reservation, the Secretary is directed by the 2004 Amendments to: (a) complete the design and construction of improvements to the irrigation system that serves the existing cooperative farm; (b) complete the design and construction of the extension of the irrigation system for the existing cooperative farm; and (c) design and construct such works for a new farm as necessary for the efficient distribution for agricultural purposes of that portion of the 27,000 acre-feet per year of CAP Indian priority water not required for the existing cooperative farm, including the extension. The 2004 Amendments provide that the San Xavier District may elect to receive $18,300,000, as adjusted in accordance with the statute, in lieu of the construction of works to serve a new farm.

As of December 31, 2008, infrastructure development on the eastern Schuk Toak District was complete, and the Tohono O'odham Nation was taking delivery of a portion of the CAP water supplies for the Schuk Toak District and putting it to

agricultural use. Infrastructure development on the San Xavier Reservation was partially complete, and CAP water was being delivered to the San Xavier District and put to agricultural use.

The Tohono O'odham Nation also has an entitlement under a CAP water delivery contract for the delivery of up to 8,000 acre-feet per year of CAP Indian priority water to the Nation for the Sif Oidak District. This water is not part of the 2006 water rights settlement.

Salt River Pima-Maricopa Indian Community

The Salt River Pima-Maricopa Indian Community Water Rights Settlement Act of 1988, Pub. L. No. 100-512, 102 Stat. 2549 (1988) (SRPMIC Settlement Act), authorized settlement of the Salt River Pima-Maricopa Indian Community's water rights claims. The Salt River Pima-Maricopa Indian Community Water Rights Settlement Agreement was entered into on February 12, 1988. Parties to the settlement agreement include the United States, the Community, the State of Arizona, the Salt River Project Agricultural Improvement and Power District, the Salt River Valley Water Users' Association, the Roosevelt Water Conservation District, the Roosevelt Irrigation District, the Arizona cities of Chandler, Glendale, Mesa, Phoenix, Scottsdale, and Tempe, the Arizona Town of Gilbert, and the Central Arizona Water Conservation District (CAWCD).

The Colorado River water available to the Salt River Pima-Maricopa Indian Community as part of the 1988 settlement for the Salt River Pima-Maricopa Indian Reservation includes:

- 13,300 acre-feet per year of CAP Indian priority water under a December 11, 1980, CAP water delivery contract between the Secretary and the Community

Water available to the Salt River Pima-Maricopa Indian Community as part of the 1988 settlement as a result of an exchange of Colorado River water includes:

- 22,000 acre-feet per year of water provided to the Community from the Arizona cities of Chandler, Glendale, Mesa, Phoenix, Scottsdale, and Tempe, and the Arizona Town of Gilbert in exchange for an equivalent amount of pre-1968 priority Colorado River water acquired by the Secretary from the Wellton-Mohawk Irrigation and Drainage District near Yuma, Arizona, subsequent to the settlement under the authority of the SRPMIC Settlement Act

The SRPMIC Settlement Act directed the Secretary to amend the December 11, 1980, CAP water delivery contract with the Salt River Pima-Maricopa Indian Community to extend the term of the contract to December 31, 2098, to provide for the contract's subsequent renewal, and to authorize the Community to lease the 13,300 acre-feet per year of CAP Indian priority water to the Arizona cities of

Chandler, Glendale, Mesa, Phoenix, Scottsdale, and Tempe, and the Arizona Town of Gilbert for a term commencing January 1, 2000, and ending December 30, 2098. The Secretary and the Community amended the CAP water delivery contract accordingly on February 12, 1988.

Also on February 12, 1988, the United States and the Salt River Pima-Maricopa Indian Community entered into the following lease agreements for a total of 13,300 acre-feet per year of CAP Indian priority water:

- City of Chandler – Salt River Pima-Maricopa Indian Community, Project Water Lease Agreement for 2,586 acre-feet per year
- Town of Gilbert – Salt River Pima-Maricopa Indian Community, Project Water Lease Agreement for 4,088 acre-feet per year
- City of Glendale – Salt River Pima-Maricopa Indian Community, Project Water Lease Agreement for 1,814 acre-feet per year
- City of Mesa – Salt River Pima-Maricopa Indian Community, Project Water Lease Agreement for 1,669 acre-feet per year
- City of Phoenix – Salt River Pima-Maricopa Indian Community, Project Water Lease Agreement for 3,023 acre-feet per year
- City of Scottsdale – Salt River Pima-Maricopa Indian Community, Project Water Lease Agreement for 60 acre-feet per year
- City of Tempe – Salt River Pima-Maricopa Indian Community, Project Water Lease Agreement for 60 acre-feet per year

The SRPMIC Settlement Act directed the Secretary, under the authority of the Basin Project Act, to design and construct new facilities for the delivery of water to unserved portions of the Salt River Pima-Maricopa Indian Community's reservation. The SRPMIC Settlement Act also directed the Secretary, under existing authority and the Act of November 2, 1921, Pub. L. No. 67-85, 42 Stat. 208 (1921) (Snyder Act), to provide additional funding for other infrastructure construction, rehabilitation, and improvement to the Community. The Secretary completed the infrastructure development required by the settlement and, as of December 31, 2008, the Community was putting settlement water to use on the reservation.

Fort McDowell Yavapai Nation

The Fort McDowell Indian Community Water Rights Settlement Act of 1990, Pub. L. No. 101-628, Title IV, 104 Stat. 4480 (1990) (FMIC Settlement Act), authorized settlement of water rights claims of the Fort McDowell Indian Community, now the Fort McDowell Yavapai Nation. The resulting Fort

McDowell Indian Community Water Settlement Agreement is dated January 15, 1993. Parties to the settlement include the United States, the Nation, the State of Arizona, the Salt River Valley Water Users' Association, the Salt River Project Agricultural Improvement and Power District, the Roosevelt Water Conservation District, CAWCD, and the Arizona cities of Phoenix, Scottsdale, Glendale, Mesa, Tempe, and Chandler, and the Town of Gilbert.

The Colorado River water available to the Fort McDowell Yavapai Nation as part of the 1993 settlement for the Fort McDowell Indian Reservation includes:

- 4,300 acre-feet per year of CAP Indian priority water under a December 11, 1980, CAP water delivery contract between the Secretary and the Nation

- 13,933 acre-feet per year of CAP Indian priority water, which the Secretary acquired from the Harquahala Valley Irrigation District (HVID) in Arizona as CAP non-Indian agricultural priority water and converted to CAP Indian priority water under the authority of the FMIC Settlement Act

The FMIC Settlement Act further directed that the Secretary utilize any remaining HVID water acquired under the authority of that Act solely for the settlement of water rights claims of other Indian tribes having claims to the water in the Salt and Verde River system in Arizona. See the Gila River Indian Community discussion later in this chapter.

The FMIC Settlement Act directed the Secretary to amend the December 11, 1980, CAP water delivery contract with the Fort McDowell Yavapai Nation to extend the term of the contract to December 31, 2099, to provide for the contract's subsequent renewal, and to authorize the Nation to lease this CAP water to the City of Phoenix for a term commencing January 1, 2001, and ending December 31, 2099. The Secretary and the Nation amended the CAP water delivery contract accordingly by executing the first amendment to the 1980 CAP water delivery contract on January 15, 1993, and entered into a Project Water Lease Agreement with the City of Phoenix on December 14, 1993.

A second amendment to the 1980 CAP water delivery contract was executed on December 14, 1993, to include the 13,933 acre-feet per year of CAP Indian priority water previously allocated to HVID as CAP non-Indian agricultural priority water and to authorize the lease of this water, subject to the approval of the Secretary, for use in Pima, Pinal, or Maricopa Counties in Arizona for a term not to exceed 100 years. This second amendment superseded and replaced the Fort McDowell Yavapai Nation's 1980 CAP water delivery contract and its first amendment in their entirety. As of December 31, 2008, the Nation had not leased or put to use this water.

San Carlos Apache Tribe

The San Carlos Apache Tribe Water Rights Settlement Act of 1992, Pub. L. No. 102-575, Title XXXVII, 106 Stat. 4740 (1992) (San Carlos Apache Settlement Act) authorized the settlement of water rights claims of the San Carlos Apache Tribe related to the San Carlos Apache Reservation, expressly excluding claims related to the allotments outside the exterior boundaries of the reservation. The resulting San Carlos Apache Tribe Water Rights Settlement Agreement is dated March 30, 1999. Amendment No. 1, dated December 16, 1999, made technical amendments to the settlement agreement. Amendment No. 2, dated December 16, 1999, added additional provisions regarding the City of Safford. Amendment No. 3, dated December 16, 1999, added additional provisions regarding the City of Globe. Parties to the settlement include the United States, the Tribe, the State of Arizona, the Salt River Project Agricultural Improvement and Power District, the Salt River Valley Water Users' Association, the Roosevelt Water Conservation District, the Buckeye Irrigation Company, the Buckeye Water Conservation and Drainage District, the Arizona cities of Chandler, Mesa, Scottsdale, Safford, Tempe, and Globe, the Town of Gilbert, and CAWCD.

The Colorado River water available to the San Carlos Apache Tribe as part of the 1999 settlement for the San Carlos Apache Indian Reservation includes:

- 12,700 acre-feet per year of CAP Indian priority water under a December 11, 1980, CAP water delivery contract between the Secretary and the Tribe

- 14,665[2] acre-feet per year of CAP M&I priority water previously allocated to Phelps Dodge Corporation, Inc. (Phelps Dodge)

- 3,480 acre-feet per year of CAP M&I priority water previously allocated to the town of Globe

- The excess water (unquantified) not required to be delivered to the Ak-Chin Indian Reservation under subsection (f)(2) of Section 2 of the Ak-Chin Water Rights Settlement Act of 1984. See the discussion of the Ak-Chin Indian Community earlier in this chapter.

The San Carlos Apache Settlement Act directed the Secretary to amend the December 11, 1980, CAP water delivery contract with the San Carlos Apache Tribe to incorporate the CAP supplies reallocated to the Tribe under the settlement. The Act directed that the reallocated water retain the priority such

[2] The San Carlos Apache Settlement Act provides for the reallocation to the San Carlos Apache Tribe of 14,655 acre-feet previously allocated to Phelps Dodge, specifically referencing a 1983 *Federal Register* notice. The allocation to Phelps Dodge in that notice was for 14,665 acre-feet. See 48 Fed. Reg. 12446 (March 24, 1983). This 10 acre-foot statutory ambiguity is resolved in the settlement agreement and in the amendment to the Tribe's CAP water contract which provide the Tribe with the 14,665 acre-feet previously allocated to Phelps Dodge.

water had prior to its reallocation. The Act further directed that amendments extend the term of the contract to December 31, 2100, provide for its subsequent renewal, and permit the water to be leased within Maricopa, Pinal, and Pima Counties for terms not to exceed 100 years, subject to renewal, and, in particular, authorized leases to the cities of Chandler, Glendale, Goodyear, Mesa, Peoria, Phoenix, Scottsdale, Tempe, and the Town of Gilbert. The Secretary and the Tribe amended the CAP water delivery contract accordingly, with the amendments to be effective when conditions specified in the San Carlos Apache Tribe Water Rights Settlement Agreement were met.

As of December 31, 2008, the San Carlos Apache Tribe had leased 12,500 acre-feet per year under a 100-year lease to the City of Scottsdale with the lease executed in 1999 and the commencement of the 100-year term subject to specified conditions. Under the Lease Agreement for the Lease and Delivery of Water Among the United States of America, the San Carlos-Apache [sic] Tribe, and the Phelps Dodge Corporation, made on January 24, 2002, the Tribe leased 14,000 acre-feet per year of CAP water from its CAP water entitlement to Phelps Dodge for 50 years beginning January 1, 1999. To facilitate the lease, the United States and the Tribe entered into an exchange agreement with the Salt River Project Agricultural Improvement and Power District and the Salt River Valley Water Users' Association dated January 24, 2002. The lease to Phelps Dodge and the exchange agreement are authorized by the Act of June 12, 1997, Chapter 5, Pub. L. No. 105-18, 111 Stat. 181 (1997).

In Section 3707(a)(1) of the San Carlos Apache Settlement Act, the Secretary is directed, pursuant to the existing authority of the Basin Project Act, to design and construct new facilities for the delivery of 12,700 acre-feet of CAP water originally allocated to the San Carlos Apache Tribe to tribal reservation lands at a cost which "shall not exceed the cost for such design and construction which would have been incurred by the Secretary in the absence of the [San Carlos Apache Tribe Water Rights Settlement Agreement] and this title." As of December 31, 2008, Reclamation was working with the Tribe to determine how to meet the Secretary's obligation.

Title IV of the 2004 AWSA provides that none of the provisions of Titles I, II, or III of the AWSA or the agreements, attachments, exhibits, or stipulations referenced in those titles shall be construed to amend, alter, or limit the authority of the San Carlos Apache Tribe or the United States to assert any claim in any forum against any party on behalf of the Tribe, its members, and allottees. Title IV of the AWSA further provides that nothing in Titles I, II, or III or the documents referenced therein shall amend or alter the CAP contract for the Tribe dated December 11, 1980, as amended April 29, 1999.

Yavapai-Prescott Indian Tribe

The Yavapai-Prescott Indian Tribe Water Rights Settlement Act of 1994, Pub. L. No. 103-434, 108 Stat. 4526 (1994), authorized settlement of water rights claims

of the Yavapai-Prescott Indian Tribe. The Yavapai-Prescott Indian Tribe Water Rights Settlement Agreement was entered into June 29, 1995. Parties to the settlement include the United States, the Tribe, the State of Arizona, the City of Prescott, and the Chino Valley Irrigation District. Under the settlement, the Tribe permanently assigned and transferred its entitlement of up to 500 acre-feet per year of CAP Indian priority water to the City of Scottsdale, Arizona, in return for funds to be used to pay the City of Prescott for water service or to develop and maintain facilities for on-reservation water or effluent use.

Gila River Indian Community

The Gila River Indian Community Water Rights Settlement Act of 2004, Pub. L. No. 108-451, Title II, 118 Stat. 3499 (2004) (Gila River Settlement Act), authorized settlement of water rights claims of the Gila River Indian Community. The resulting Amended and Restated Gila River Indian Community Water Rights Settlement Agreement is dated December 21, 2005. Parties include the United States, the Community, the State of Arizona, the Salt River Project Agricultural Improvement and Power District, the Salt River Valley Water Users' Association, the Roosevelt Irrigation District, the Roosevelt Water Conservation District, the Arizona Water Company, the Arizona cities of Casa Grande, Chandler, Coolidge, Glendale, Goodyear, Mesa, Peoria, Phoenix, Safford, Scottsdale, Tempe, the Arizona towns of Florence, Mammoth, Kearny, Duncan and Gilbert, the Maricopa-Stanfield Irrigation and Drainage District, the Central Arizona Irrigation and Drainage District, the Franklin Irrigation District, the Gila Valley Irrigation District, the San Carlos Irrigation and Drainage District, the Hohokam Irrigation and Drainage District, the Buckeye Irrigation Company, the Buckeye Water Conservation and Drainage District, CAWCD, the Phelps Dodge Corporation, and the Arizona Game and Fish Commission.

As of December 31, 2008, there were two technical amendments to the December 2005 settlement agreement addressing various exhibits: Amendment No. 1 to the Amended and Restated Gila River Indian Community Water Rights Settlement Agreement, dated September 5, 2006, and Amendment No. 2 to the Amended and Restated Gila River Indian Community Water Rights Settlement Agreement, dated December 10, 2007.

The Colorado River water available to the Gila River Indian Community as part of the 2005 settlement for the Gila River Indian Reservation includes:

- 173,100 acre-feet per year of CAP Indian priority water made available under an October 22, 1992, CAP water delivery contract between the Secretary and the Community

- 18,100 acre-feet per year of CAP Indian priority water which the Secretary acquired from HVID as CAP non-Indian agricultural priority water and converted to CAP Indian priority water (see discussion earlier in the chapter of the Fort McDowell Yavapai Nation)

- 18,600 acre-feet per year of CAP non-Indian agricultural priority water acquired under an August 7, 1992, agreement among the United States of America, the Community, and the Roosevelt Water Conservation District, converted from a percentage entitlement to a quantified entitlement in the 2005 amended and restated agreement

- 102,000 acre-feet per year of CAP non-Indian agricultural priority water reallocated to the Community under AWSA

In accordance with a firming agreement entered into under the AWSA (see Chapter 5), the State of Arizona is required, for a 100-year period, to improve the delivery priority of 15,000 acre-feet of the 102,000 acre-feet per year of non-Indian agricultural priority water reallocated to the Gila River Indian Community under that statute. In the event that deliveries of CAP non-Indian agricultural priority water are reduced in times of shortage, Arizona will supply water to the Community from other sources in order to "firm" this 15,000 acre-foot per year water supply so that it is equivalent in priority to CAP M&I priority water. The 100-year period commenced January 1, 2008.

The AWSA and the Gila River Settlement Act further provide that up to 17,000 acre-feet per year of CAP M&I priority water under CAP subcontract No. 3-07-30-W0307 among the United States, CAWCD, and Asarco Incorporated, dated November 17, 1993, may be reallocated to the Gila River Indian Community upon execution of an exchange and lease agreement among the Community, the United States, and Asarco Incorporated. As of December 31, 2008, such an agreement had not been executed.

Under the settlement, the Gila River Indian Community may enter into contracts or options to lease or exchange the CAP water within Maricopa, Pinal, Pima, La Paz, Yavapai, Gila, Graham, Greenlee, Santa Cruz, and Coconino Counties for a term not to exceed 100 years, subject to renewal.

As of December 31, 2008, the Gila River Indian Community has entered into the following leases for CAP water in the quantities, per year, specified below:

- Lease Agreement For CAP Water Among the City of Goodyear, the Gila River Indian Community, and the United States, for 7,000 acre-feet

- Lease Agreement For CAP Water Among the City of Peoria, the Gila River Indian Community, and the United States, as Trustee for the Gila River Indian Community, for 7,000 acre-feet

- Lease Agreement For CAP Water Among the City of Phoenix, the Gila River Indian Community, and the United States, as Trustee for the Gila River Indian Community, for 15,000 acre-feet

- Lease Agreement For CAP Water Among the City of Scottsdale, the Gila River Indian Community, and the United States, as Trustee for the Gila River Indian Community, for 12,000 acre-feet

These leases are each dated May 15, 2006, and each have 100-year terms commencing January 13, 2008.

The Gila River Indian Community also entered into an exchange agreement for reclaimed water with the neighboring municipalities of Chandler and Mesa, in which the Community exchanges a portion of its CAP water for treated effluent water. In addition, the Community leased a total of 32,618 acre-feet of its 2008 allocation to the Salt River Project Agricultural Improvement and Power District and the Salt River Valley Water Users' Association utilizing a 1-year lease.

As of December 31, 2008, construction of the infrastructure to deliver CAP water to the Gila River Reservation for agricultural use is ongoing and the Gila River Indian Community is taking partial delivery of its CAP water supplies.

Ongoing Settlement Discussions in the Lower Basin

The San Luis Rey Indian Water Rights Settlement Act, Pub. L. 100-675, Title I, 102 Stat. 4000 (1988) (San Luis Rey Act), as amended and supplemented by Section 211 of the Act of October 27, 2000, Pub. L. No. 106-377, Appendix B, Title II, Section 211, 114 Stat. 1441A-70 (Packard Amendment), provides for certain benefits to the La Jolla, Rincon, San Pasqual, Pauma, and Pala Bands of Mission Indians (San Luis Rey Bands) in southern California, conditioned upon the execution of a settlement agreement which will "resolve all claims, controversies, and issues involved in all the pending proceedings among the parties in the United States District Court for the Southern District of California and the Federal Energy Regulatory Commission . . . ." The settlement is to be among the United States, the San Luis Rey Bands, the City of Escondido, California (successor-in-interest to Escondido Mutual Water Company), and the Vista Irrigation District.

The San Luis Rey Act, as amended, directed the Secretary to permanently furnish annually up to 16,000 acre-feet per year of Colorado River water from the lining of the All-American and Coachella Canals to be made available for purposes of the San Luis Rey Indian water rights settlement. The effectiveness of these statutory provisions is conditioned by the San Luis Rey Act upon the execution of a settlement agreement, which had not occurred as of December 31, 2008.

The United States, the San Luis Rey Bands, the San Luis Rey Indian Water Authority, the City of Escondido, and the Vista Irrigation District entered into an Implementation Agreement, dated January 18, 2001, recognizing the statutory obligation to deliver up to 16,000 acre-feet of water per year, subject to the conditions specified in the statute.

The Secretary secured 16,000 acre-feet per year of Colorado River water to serve as the basis for a settlement under the San Luis Rey Act. On October 10, 2003, as an integral part of the California quantification settlement (see Chapter 6), four contracts were entered into by the Secretary which assist in fulfilling congressional objectives under the San Luis Rey Act:

- The Colorado River Water Delivery Agreement: Federal Quantification Settlement Agreement (CRWDA) entered into among the United States, the Imperial Irrigation District, the Coachella Valley Water District, The Metropolitan Water District of Southern California, and the San Diego County Water Authority, under which a portion of the water conserved from the lining of the All-American and Coachella Canals is to be made available for the San Luis Rey Indian water settlement

- The Allocation Agreement among the United States of America, The Metropolitan Water District of Southern California, Coachella Valley Water District, Imperial Irrigation District, San Diego County Water Authority, the La Jolla, Pala, Pauma, Rincon and San Pasqual Bands of Mission Indians, the San Luis Rey River Indian Water Authority, the City of Escondido, and Vista Irrigation District (Allocation Agreement) allocating water conserved from the lining of the All-American and Coachella Canals and recognizing that up to 16,000 acre-feet per year of water will be made available for settlement purposes upon execution of a San Luis Rey Indian water settlement agreement

- The Agreement Relating to Supplemental Water Among The Metropolitan Water District of Southern California, the San Luis Rey Settlement Parties, and the United States addressing the delivery or exchange of water made available for the San Luis Rey Indian water settlement under the CRWDA and the Allocation Agreement

- The Agreement for the Conveyance of Water Among the San Diego County Water Authority, the San Luis Rey Settlement Parties, and the United States addressing the conveyance of water made available for the San Luis Rey Indian water settlement under the CRWDA, and the Allocation Agreement

As of December 31, 2008, the United States was participating in additional settlement negotiations with the following Native American tribes in the Lower Basin in Arizona: the White Mountain Apache Tribe; the Navajo Nation and the Hopi Tribe in a joint settlement; and the San Carlos Apache Tribe (Upper Gila River). Also as of that date, *The Navajo Nation* v. *United States Department of the Interior*, No. CV-03-0507-PCT-PGR (D. Ariz. filed Mar. 14, 2003), relating to the Secretary's management of the Colorado River in the Lower Basin, had been stayed pending settlement negotiations.

Chapter 10: List of References

Treaties, Interstate Compacts, Federal Statutes

Act of November 2, 1921, Pub. L. No. 67-85, 42 Stat. 208 (1921) (Snyder Act).

Colorado River Basin Project Act, Pub. L. No. 90-537, 82 Stat. 885 (1968). On DVD in *Updating the Hoover Dam Documents 1978* at XII-9.

Act of July 28, 1978, Pub. L. No. 95-328, 92 Stat. 409 (1978), later amended and supplemented by:

> Act of October 19, 1984, Pub. L. No. 98-530, 98 Stat. 2698 (1984).
>
> Ak-Chin Water Use Amendments Act of 1992, Pub. L. No. 102-497, 106 Stat. 3258 (1992).
>
> Ak-Chin Water Use Amendments Act of 2000, Pub. L. No. 106-285, 114 Stat. 878 (2000).

Southern Arizona Water Rights Settlement Act of 1982, Pub. L. No. 97-293, Title III, 96 Stat. 1274 (1982), later amended and supplemented by:

> Act of October 19, 1984, Pub. L. No. 98-530, Section 10, 98 Stat. 2703 (1984).
>
> Southern Arizona Water Rights Settlement Technical Amendments Act of 1992, Pub. L. No. 102-497, Section 8, 106 Stat. 3256 (1992).
>
> Southern Arizona Water Rights Settlement Amendments Act of 2004, Pub. L. No. 108-451, Title III, 118 Stat. 3536 (2004).

Salt River Pima-Maricopa Indian Community Water Rights Settlement Act of 1988, Pub. L. No. 100-512, 102 Stat. 2549 (1988).

Colorado Ute Indian Water Rights Settlement Act of 1988, Pub. L. No. 100-585, 102 Stat. 2973 (1988), later amended and supplemented by:

> Colorado Ute Settlement Act Amendments of 2000, Pub. L. No. 106-554, Appendix D, 114 Stat. 2763A-258 (2000).

San Luis Rey Indian Water Rights Settlement Act, Pub. L. No. 100-675, Title I, 102 Stat. 4000 (1988) (Appendix 18) later amended and supplemented by:

Act of October 27, 2000, Pub. L. No. 106-377, Appendix B, Title II, Section 211, 114 Stat. 1441A-70 (2000) (Packard Amendment). Appendix 19.

Fort McDowell Indian Community Water Rights Settlement Act of 1990, Pub. L. No. 101-628, Title IV, 104 Stat. 4480 (1990), later amended and supplemented by:

Fort McDowell Indian Community Water Rights Settlement Revision Act of 2006, Pub. L. No. 109-373, 120 Stat. 2650 (2006).

Jicarilla Apache Tribe Water Rights Settlement Act, Pub. L. No. 102-441, 106 Stat. 2237 (1992).

Central Utah Project Completion Act, Pub. L. No. 102-575, Titles II-VI, 106 Stat. 4605 (1992).

San Carlos Apache Tribe Water Rights Settlement Act of 1992, Pub. L. No. 102-575, Title XXXVII, 106 Stat. 4740 (1992) later amended and supplemented by:

Act of June 12, 1997, Chapter 5, Pub. L. No. 105-18, 111 Stat. 181 (1997).

Yavapai-Prescott Indian Tribe Water Rights Settlement Act of 1994, Pub. L. No. 103-434, 108 Stat. 4526 (1994).

Arizona Water Settlements Act, Pub. L. No. 108-451, 118 Stat. 3478 (2004). DVD Supplement 48.

Gila River Indian Community Water Rights Settlement Act of 2004, Pub. L. No. 108-451, Title II, 118 Stat. 3499 (2004).

Federal Register Notices

48 Fed. Reg. 12446 (March 24, 1983), Central Arizona Project, Arizona; Water Allocations and Water Service Contracting; Record of Decision. Notice of final water allocations to Indian and non-Indian water users and related decisions. DVD Supplement 25.

Contracts and Agreements

Upper Basin

Jicarilla Apache Nation

Contract Between the United States and the Jicarilla Apache Tribe, dated December 8, 1992.

Water Supply Agreement Between the City of Santa Fe and the Jicarilla Apache Nation, September 2, 2004.

Water Supply Agreement, dated March 2, 2007, between the Jicarilla Apache Nation and the Public Service Company of New Mexico.

Ute Indian Tribe
Revised Ute Indian Compact of 1990, between the United States and the Ute Indian Tribe (not ratified as of December 31, 2008).

Southern Ute Indian Tribe and Ute Mountain Ute Tribe
Agreement in Principle Concerning the Colorado Ute Indian Water Rights Settlement and Binding Agreement for Animas-La Plata Cost Sharing, June 30, 1986, among the United States, State of Colorado, Ute Mountain Ute Tribe, Southern Ute Indian Tribe, Colorado Water Resources and Power Development Authority, Animas-La Plata Water Conservancy District, New Mexico Interstate Stream Commission, San Juan Water Commission, and Montezuma County, Colorado, amended and restated November 9, 2001.

Colorado Ute Indian Water Rights Final Settlement Agreement, December 10, 1986, among the United States, the Ute Mountain Ute Tribe, the Southern Ute Indian Tribe, and other parties.

Lower Basin
Ak-Chin Indian Community
Contract Between the United States and the Ak-Chin Indian Community to Provide Water and to Settle Claims to Water, May 20, 1980.

Central Arizona Project Indian Water Delivery Contract Between the United States and the Ak-Chin Indian Community, December 11, 1980.

Agreement in Principle for Revised Ak-Chin Water Settlement, between the Secretary and the Ak-Chin Indian Community, September 23, 1983.

Contract Between the United States and the Ak-Chin Indian Community to Provide Permanent Water and Settle Interim Water Rights, October 2, 1985.

> Amendment No. 1, Contract Dated October 2, 1985 Between the United States and the Ak-Chin Indian Community to Provide Permanent Water and Settle Interim Water Rights, December 14, 1994.

Option and Lease Agreement, Among the Ak-Chin Indian Community, the United States of America, and Del Webb Corporation, December 14, 1994.

> Amendment Number One to Option and Lease Agreement and a Restated Option and Lease Agreement, among the Ak-Chin Indian Community, the United States of America, and Del Webb Corporation, first executed January 7, 1999, by the Ak-Chin Indian Community and Del Webb Corporation, re-executed by the Ak-Chin Indian Community June 4, 2001, re-executed by Del Webb Corporation May 7, 2001, executed by the

Bureau of Indian Affairs June 14, 2001, and executed by the Bureau of Reclamation June 29, 2001.

Fort McDowell Yavapai Nation

Fort McDowell Indian Community Water Settlement Agreement, among the United States, the Fort McDowell Yavapai Nation, the State of Arizona, the Salt River Valley Water Users' Association, the Salt River Project Agricultural Improvement and Power District, the Roosevelt Water Conservation District, the CAWCD, and the Arizona cities of Phoenix, Scottsdale, Glendale, Mesa, Tempe, and Chandler, and the Town of Gilbert, January 15, 1993.

Central Arizona Project Indian Water Delivery Contract Between the United States and the Fort McDowell Mohave-Apache Community, December 11, 1980.

First Amendment to Central Arizona Project Indian Water Delivery Contract Between the United States and the Fort McDowell Mohave-Apache Indian Community, January 15, 1993.

Second Amendment to the Central Arizona Project Water Delivery Contract Between the United States and the Fort McDowell Mohave-Apache Indian Community, December 14, 1993.

Project Water Lease Agreement, among the United States of America, the Fort McDowell Yavapai Nation, and the City of Phoenix, December 14, 1993.

Gila River Indian Community

Central Arizona Project Indian Water Delivery Contract Between the United States and the Gila River Indian Community, December 15, 1982.

Agreement Among the United States of America, the Gila River Indian Community, and the Roosevelt Water Conservation District, August 7, 1992.

Subcontract Among the United States, the Central Arizona Water Conservation District, and ASARCO Incorporated (Ray Mine) Providing for Water Service, Contract No. 3-07-30-W0307, November 17, 1993.

Reclaimed Water Exchange Agreement Among the Cities of Mesa and Chandler, the Community and the United States, December 21, 2005.

Amended and Restated Gila River Indian Community Water Rights Settlement Agreement, among the United States, the Community, the State of Arizona, the Salt River Project Agricultural Improvement and Power District, the Salt River Valley Water Users' Association, the Roosevelt Irrigation District, the Roosevelt Water Conservation District, Arizona Water Company, the Arizona cities of Casa Grande, Chandler, Coolidge, Glendale, Goodyear, Mesa, Peoria, Phoenix, Safford, Scottsdale, Tempe, the Arizona towns of Florence, Mammoth, Kearny,

Duncan and Gilbert, the Maricopa-Stanfield Irrigation and Drainage District, the Central Arizona Irrigation and Drainage District, the Franklin Irrigation District, the Gila Valley Irrigation District, the San Carlos Irrigation and Drainage District, the Hohokam Irrigation and Drainage District, the Buckeye Irrigation Company, the Buckeye Water Conservation and Drainage District, the CAWCD, Phelps Dodge Corporation, and the Arizona Game and Fish Commission, December 21, 2005.

Amendment No. 1 to the Amended and Restated Gila River Indian Community Water Rights Settlement Agreement, September 5, 2006.

Amendment No. 2 to the Amended and Restated Gila River Indian Community Water Rights Settlement Agreement, December 10, 2007.

Lease Agreement For CAP Water Among the City of Goodyear, the Gila River Indian Community, and the United States, May 15, 2006.

Lease Agreement For CAP Water Among the City of Peoria, the Gila River Indian Community, and the United States, as Trustee for the Gila River Indian Community, May 15, 2006.

Lease Agreement For CAP Water Among the City of Phoenix, the Gila River Indian Community, and the United States, as Trustee for the Gila River Indian Community, May 15, 2006.

Lease Agreement For CAP Water Among the City of Scottsdale, the Gila River Indian Community, and the United States, as Trustee for the Gila River Indian Community, May 15, 2006.

Amended and Restated Lease Agreement for CAP Water Among the Gila River Indian Community, the Salt River Valley Water Users' Association, and the Salt River Project Agricultural Improvement and Power District, April 29, 2009.

Salt River Pima-Maricopa Indian Community

Central Arizona Project Indian Water Delivery Contract Between the United States and the Salt River Pima-Maricopa Indian Community, December 11, 1980.

Salt River Pima-Maricopa Indian Community Water Rights Settlement Agreement, among the United States, the Community, the State of Arizona, the Salt River Project Agricultural Improvement and Power District, the Salt River Valley Water Users' Association, the Roosevelt Water Conservation District, the Roosevelt Irrigation District, the Arizona cities of Chandler, Glendale, Mesa, Phoenix, Scottsdale, and Tempe, the Arizona Town of Gilbert, and the Central Arizona Water Conservation District, February 12, 1988.

First Amendment to Central Arizona Project Indian Water Delivery Contract Between the United States and the Salt River Pima-Maricopa Indian Community, February 12, 1988.

City of Chandler – SRPMIC Project Water Lease Agreement, February 12, 1988.

Town of Gilbert – SRPMIC Project Water Lease Agreement, February 12, 1988.

City of Glendale – SRPMIC Project Water Lease Agreement, February 12, 1988.

City of Mesa – SRPMIC Project Water Lease Agreement, February 12, 1988.

City of Phoenix – SRPMIC Project Water Lease Agreement, February 12, 1988.

City of Scottsdale – SRPMIC Project Water Lease Agreement, February 12, 1988.

City of Tempe – SRPMIC Project Water Lease Agreement, February 12, 1988.

San Carlos Apache Tribe
Central Arizona Project Indian Water Delivery Contract Between the United States and the San Carlos Apache Tribe, December 11, 1980.

Central Arizona Project Indian Water Delivery Contract Between the United States and the San Carlos Apache Tribe Amendment No. 1, January 29, 1999.

Central Arizona Project Indian Water Delivery Contract Between the United States and the San Carlos Apache Tribe Amendment No. 2, April 29, 1999.

Central Arizona Project Indian Water Delivery Contract Between the United States and the San Carlos Apache Tribe Amendment No. 3.

San Carlos Apache Tribe Water Rights Settlement Agreement, among the United States, the San Carlos Apache Tribe, the State of Arizona, the Salt River Project Agricultural Improvement and Power District, the Salt River Valley Water Users' Association, the Roosevelt Water Conservation District, the Buckeye Irrigation Company, the Buckeye Water Conservation and Drainage District, the Arizona Cities of Chandler, Mesa, Scottsdale, and Tempe, the Town of Gilbert, and the Central Arizona Water Conservation District, March 30, 1999.

Amendment No. 1 to the San Carlos Apache Tribe Water Rights Settlement Agreement, December 16, 1999.

Amendment No. 2 to the San Carlos Apache Tribe Water Rights Settlement Agreement, December 16, 1999.

Amendment No. 3 to the San Carlos Apache Tribe Water Rights Settlement Agreement, December 16, 1999.

Central Arizona Project Water Lease Among the United States of America, the San Carlos Apache Tribe, and the City of Scottsdale, Arizona, executed by the United States December 17, 1999, the San Carlos Apache Tribe May 13, 1999, and the City of Scottsdale, May 11, 1999.

Agreement Among the San Carlos Apache Tribe, the Salt River Project Agricultural Improvement and Power District and the Salt River Valley Water Users' Association, and the United States Bureau of Reclamation for Exchange of Water from the Black River for Central Arizona Project Water, January 24, 2002.

Lease Agreement for the Lease and Delivery of Water Among the United States of America, the San Carlos-Apache [sic] Tribe, and the Phelps Dodge Corporation, January 24, 2002.

San Luis Rey Bands

Implementation Agreement among the United States, La Jolla, Rincon, San Pasqual, Pauma, and Pala Bands of Mission Indians, San Luis Rey Indian Water Authority, City of Escondido, and Vista Irrigation District, January 18, 2001. DVD Supplement 70.

Colorado River Water Delivery Agreement: Federal Quantification Settlement Agreement, among the United States, Imperial Irrigation District, Coachella Valley Water District, The Metropolitan Water District of Southern California, and San Diego County Water Authority, October 10, 2003. Appendix 20.

Allocation Agreement Among the United States of America, The Metropolitan Water District of Southern California, Coachella Valley Water District, Imperial Irrigation District, San Diego County Water Authority, the La Jolla, Pala, Pauma, Rincon, and San Pasqual Bands of Mission Indians, the San Luis Rey River Indian Water Authority, the City of Escondido and Vista Irrigation District, October 10, 2003. DVD Supplement 66.

Agreement Relating to Supplemental Water Among The Metropolitan Water District of Southern California, San Luis Rey Settlement Parties, and the United States, October 10, 2003. DVD Supplement 71.

Agreement for the Conveyance of Water Among the San Diego County Water Authority, the La Jolla, Rincon, San Pasqual, Pauma, and Pala Bands of Mission Indians, San Luis Rey Indian Water Authority, City of Escondido, and Vista Irrigation District, and the United States, October 10, 2003. DVD Supplement 72.

Tohono O'odham Nation
Central Arizona Project Indian Water Delivery Contract Between the United States and the Papago Tribe, December 11, 1980.

Amendment No. 1 to the December 11, 1980 contract, dated May 5, 2006.

Contract Between the United States and the City of Tucson to Provide for Delivery of Reclaimed Water to the Secretary, October 11, 1983.

Contract Between the United States and the Papago Tribe of Arizona to Provide Water and to Settle Claims to Water, October 11, 1983.

Contract Among the United States, the State of Arizona, and Others to Provide for Contribution to the Cooperative Fund and for Other Purposes, entered into among the United States, the State of Arizona, the City of Tucson, the Anamax Mining Company, the Cyprus Pima Mining Company, Asarco Incorporated (formerly American Smelting & Refining Company), the Duval Corporation, and Farmers Investment Company, October 11, 1983.

Asarco Settlement Agreement, among the United States, the Tohono O'odham Nation, the San Xavier District, Asarco Incorporated, and allottees, June 12, 2006. Exhibit 13.1 to the Tohono O'odham Settlement Agreement.

Tohono O'odham Settlement Agreement, among the United States, the Tohono O'odham Nation, the State of Arizona, the City of Tucson, Asarco Incorporated, Farmers Investment Company, and allottees, June 12, 2006.

Yavapai-Prescott Indian Tribe
Yavapai-Prescott Indian Tribe Water Rights Settlement Agreement, among the United States, the Yavapai-Prescott Indian Tribe, the State of Arizona, the City of Prescott, and the Chino Valley Irrigation District, June 29, 1995.

CHAPTER 11: *ARIZONA* v. *CALIFORNIA*

Introduction

The *Arizona* v. *California* litigation was initiated in 1952 by the State of Arizona. The inception and history of the litigation is set forth in *Updating the Hoover Dam Documents 1978*, Chapters VIII, IX, and X, with pertinent documents appearing in Appendices VIII, IX, and X of that volume. The discussion in the 1978 volume includes the 1960 Special Master's Report, filed with the United States Supreme Court in 1961, 364 U.S. 940 (1961); the 1963 opinion, 373 U.S. 546 (1963) (1963 Opinion); the 1964 decree, 376 U.S. 340 (1964) (1964 Decree); the 1966 order, 383 U.S. 268 (1966), amending Article VI of the 1964 Decree; and the 1979 supplemental decree, 439 U.S. 419 (1979) (1979 Supplemental Decree).

Following entry of the 1979 Supplemental Decree, the litigation turned to unresolved issues involving the five Indian reservations along the Colorado River in the Lower Basin: the Cocopah Indian Reservation, the Colorado River Indian Reservation, the Fort Mojave Indian Reservation, the Fort Yuma Indian Reservation, and the Chemehuevi Indian Reservation. The major issues concerned disputed reservation boundaries, associated practicably irrigable lands, and additional claims for Federal reserved water rights for the five reservations.

This chapter discusses the United States Supreme Court's published opinions, orders, and decrees in *Arizona* v. *California* after entry of the 1979 Supplemental Decree through entry of the consolidated decree on March 27, 2006, 547 U.S. 150 (2006) (Consolidated Decree). These opinions, orders, and decrees principally include:

- The opinion of March 30, 1983, 460 U.S. 605 (1983) (1983 Opinion)
- The second supplemental decree entered on April 16, 1984, 466 U.S. 144 (1984) (1984 Second Supplemental Decree)
- The opinion of June 19, 2000, 530 U.S. 392 (2000) (2000 Opinion)
- The supplemental decree entered on October 10, 2000, 531 U.S. 1 (2000) (2000 Supplemental Decree)
- The Consolidated Decree entered on March 27, 2006, 547 U.S. 150 (2006)

The Consolidated Decree brought together all previous decrees entered in *Arizona* v. *California* and addressed and resolved the remaining issues before the

court relating to reservation boundaries, practicably irrigable lands, and Federal reserved water rights claims for the five reservations.

Summary of the Tribes' Federal Reserved Water Rights

The Supreme Court initially quantified the Federal reserved water rights for the Cocopah Indian Reservation, the Colorado River Indian Reservation, the Fort Mojave Indian Reservation, the Chemehuevi Indian Reservation, and the Fort Yuma Indian Reservation in the 1964 Decree as supplemented by the 1979 Supplemental Decree. See Table 11-1.

Table 11-1. 1964 Decree and 1979 Supplemental Decree – Present Perfected Rights for Indian Reservations

Reservation	Annual Diversions[1] (acre-feet)	Net Acres[1]	Priority Date	
(Lands in Arizona)				
Cocopah Indian Reservation	2,744	431	Sept. 27, 1917	
Colorado River Indian Reservation	358,400	53,768	Mar. 3, 1865	
	252,016	37,808	Nov. 22, 1873	
	51,986	7,799	Nov. 16, 1874	
Fort Mojave Indian Reservation	27,969	4,327	Sept. 18, 1890	[2]
	68,447	10,589	Feb. 2, 1911	
(Lands in California)				
Chemehuevi Indian Reservation	11,340	1,900	Feb. 2, 1907	
Fort Yuma Indian Reservation	51,616	7,743	Jan. 9, 1884	
Colorado River Indian Reservation	10,745	1,612	Nov. 22, 1873	
	40,241	6,037	Nov. 16, 1874	
	3,760	564	May 15, 1876	
Fort Mojave Indian Reservation	13,698	2,119	Sept. 18, 1890	[2]
(Lands in Nevada)				
Fort Mojave Indian Reservation	12,534	1,939	Sept. 18, 1890	[2]

[1]The quantity of water in each instance is measured by (i) diversions or (ii) consumptive use required for irrigation of the respective acreage and for satisfaction of related uses, whichever (i) or (ii) is less.

[2]Stated as September 19, 1890, in 1964 Decree.

Source: 439 U.S. 419 (1979)

The Supreme Court's key holdings in the decisions and decrees entered following the 1979 Supplemental Decree included the resolution of boundary issues and the further quantification of the Federal reserved water rights for the Indian reservations along the Colorado River in the Lower Basin. As reflected in the 2006 Consolidated Decree and in Table 11-2, for four of the five reservations, the

Supreme Court increased the quantity of Federal reserved water rights over what had been decreed in the 1964 Decree and 1979 Supplemental Decree.

Table 11-2. 2006 Consolidated Decree - Present Perfected Rights for Indian Reservations

Reservation	Annual Diversions[1] (acre-feet)	Net Acres[1]	Priority Date	
(Lands in Arizona)				
Cocopah Indian Reservation	7,681	1,206	Sept. 27, 1917	
Colorado River Indian Reservation	358,400	53,768	Mar. 3, 1865	
	252,016	37,808	Nov. 22, 1873	
	51,986	7,799	Nov. 16, 1874	
Fort Mojave Indian Reservation	27,969	4,327	Sept. 18, 1890	[2]
	75,566	11,691	Feb. 2, 1911	
Fort Yuma Indian Reservation	6,350	952	Jan. 9, 1884	
(Lands in California)				
Chemehuevi Indian Reservation	11,340	1,900	Feb. 2, 1907	
Fort Yuma Indian Reservation	71,616	10,742	Jan. 9, 1884	
Colorado River Indian Reservation	10,745	1,612	Nov. 22, 1873	
	40,241	6,037	Nov. 16, 1874	
	5,860	879	May 15, 1876	
Fort Mojave Indian Reservation	16,720	2,587	Sept. 18, 1890	[2]
(Lands in Nevada)				
Fort Mojave Indian Reservation	12,534	1,939	Sept. 18, 1890	[2]

[1]The quantity of water in each instance is measured by (i) diversions or (ii) consumptive use required for irrigation of the respective acreage and for satisfaction of related uses, whichever (i) or (ii) is less.

[2]Stated as September 19, 1890, in 1964 Decree.

Source: 547 U.S. 150 (2006)

Background for Indian Reservation Issues

With respect to the claims of the United States on behalf of the Chemehuevi, Cocopah, Fort Yuma (Quechan), Colorado River, and Fort Mojave Indian Reservations in Arizona, California, and Nevada, the United States Supreme Court held in the 1963 Opinion in *Arizona* v. *California* that:

> [T]he United States did reserve the water rights for the Indians effective as of the time the Indian Reservations were created. This means, as the Master held, that these water rights, having vested before the [Boulder Canyon Project] Act became effective on June 25, 1929, are "present perfected rights" and as such are entitled to priority under the Act.

373 U.S. at 600. The Supreme Court then determined that "the only feasible and fair way by which reserved water for the reservations can be measured is irrigable acreage." *Id.*, 373 U.S. at 601. Accordingly, the court based its quantification of the five reservations' present perfected rights in the 1964 Decree and in the 1979 Supplemental Decree on the practicably irrigable acreage existing on lands that were undisputedly located within the boundaries of the respective reservations.

The Supreme Court did not, however, resolve reservation boundary disputes and did not include practicably irrigable acreage located within disputed boundary lands in its quantification of the present perfected water rights of the Indian reservations in either the 1964 Decree or the 1979 Supplemental Decree.

The United States and the State of California disputed the correct boundaries of the Colorado River Indian Reservation and the Fort Mojave Indian Reservation from the early phases of the case. In his December 5, 1960, Report to the Supreme Court, Special Master Simon Rifkind determined the boundaries of both reservations "generally finding that the reservations were smaller than the United States claimed them to be." 1983 Opinion, 460 U.S. at 610 (as the court later observed citing Special Master Rifkind's report).

In the 1963 Opinion, the Supreme Court disagreed with the Special Master's decision to determine the disputed boundaries of the Colorado River Indian Reservation and the Fort Mojave Indian Reservation, holding that "it is unnecessary to resolve those disputes here. Should a dispute over title arise because of some future refusal by the Secretary to deliver water to either area, the dispute can be settled at that time." 373 U.S. at 601. In Article II(D)(5) of the 1964 Decree, the court provided that "the quantities fixed" for the two reservations in the 1964 Decree "shall be subject to appropriate adjustment by agreement or decree of this Court in the event that the boundaries of the respective reservations are finally determined . . . ." 1964 Decree, 376 U.S. at 345.

In the years between the 1964 Decree and the 1979 Supplemental Decree, the five Tribes and the United States identified additional boundary lands and associated practicably irrigable acreage outside of the reservation lands recognized in the 1964 Decree for all five reservations, as a result of a series of developments including administrative determinations by the Secretary, acts of Congress, and changes in the course of the Colorado River. These developments and the associated claims of the Tribes and the United States are described in *Updating the Hoover Dam Documents 1978*, Chapter XI and Appendix XI, and in the 1983 Opinion, 460 U.S. at 630-634. The Supreme Court was apprised of these developments in the motions to intervene, filed by the Tribes in 1977 and 1978, and in the United States' motion to amend the 1964 Decree to award additional water rights for practicably irrigable lands located within the additional boundary lands filed on December 21, 1978. 1983 Opinion, 460 U.S. at 633-634.

In the 1979 Supplemental Decree, the court did not rule on these motions, except to deny the motion of the Fort Mojave, Chemehuevi, and Quechan Tribes to intervene for the purpose of opposing entry of the 1979 Supplemental Decree. 1979 Supplemental Decree, 439 U.S. at 437.

Instead, in the 1979 Supplemental Decree, the Supreme Court appointed a new Special Master, Judge Elbert P. Tuttle. The court referred the Tribes' motions to intervene to the Special Master for resolution. *Id.* The court subsequently ordered on March 5, 1979, at 440 U.S. 942, that the United States' motion for modification of the 1964 Decree also be referred to the Special Master. With respect to the Fort Mojave and Colorado River Indian Reservations, the 1979 Supplemental Decree, 439 U.S. at 421, expressly stated that "[t]his determination shall in no way affect future adjustments resulting from determinations relating to settlement of Indian reservation boundaries referred to in Art. II(D)(5) of said [1964] Decree."

The 1979 Supplemental Decree also explicitly left open the issues concerning the other reservations, providing that:

> [T]he quantities fixed in paragraphs (1) through (5) of Art. II(D) of said Decree shall continue to be subject to appropriate adjustment by agreement or decree of this Court in the event that the boundaries of the respective reservations are finally determined.

Id., 439 U.S. at 421.

1983 Opinion and 1984 Second Supplemental Decree

The Special Master held hearings on the pending motions and on August 28, 1979, submitted a preliminary report to the United States Supreme Court that granted the Tribes leave to intervene and participate in subsequent hearings on the merits of the pending claims. The preliminary report also contained findings of fact and conclusions of law on the boundary issues. The States[1] sought to file

[1] The Supreme Court's 1983 Opinion notes that in earlier proceedings the State of Arizona invoked the court's original jurisdiction to file a bill of complaint against the State of California and seven California public agencies, that the State of Nevada intervened, and that the States of Utah and New Mexico were joined as defendants. The court identifies the seven California public agencies as Palo Verde Irrigation District, Imperial Irrigation District, Coachella Valley County Water District, The Metropolitan Water District of Southern California, City of Los Angeles, City of San Diego and County of San Diego. 460 U.S. 608, n.1 (1983). As a general rule neither the Special Master's 1982 report nor the Supreme Court's 1983 Opinion clarifies which of these States or which of these public agencies participated in the resolution of particular issues. Both use general terms such as "State Parties" or "the States," although from context it is apparent the issues were often of most direct concern to the States of Arizona, California, and Nevada. Similarly, the term "Tribes" is often used to connote the five Tribes with reservations along the Colorado River in the Lower Basin, although in context the term may refer to fewer. This chapter adopts the approach of the Special Master and the Supreme Court. Those interested in the details

exceptions to the preliminary report, but the Supreme Court denied their motion on January 7, 1980, at 444 U.S. 1009, and the Special Master subsequently held further hearings on the merits. On February 22, 1982, the Special Master issued his final report and recommended decree, which the court ordered filed at 456 U.S. 912. Concerning the boundary issues and additional practicably irrigable acreage, his findings "were almost entirely consistent with the position of the United States and the Indian Tribes." 1983 Opinion, 460 U.S. at 613. The Special Master agreed with the Tribes and the United States that the 1964 Decree could be modified to include additional practicably irrigable acreage within the boundaries recognized in 1964, and to include additional quantities of water rights appurtenant to those lands. *Id.*, 460 U.S. at 615. The State parties filed exceptions to these findings with the court. They also refiled their exceptions to the Special Master's preliminary findings allowing the five Tribes to intervene in the action.

The Supreme Court decided the disputed issues concerning the Special Master's report and recommended decree in its 1983 Opinion. The court agreed with the Special Master that the Tribes' motions to intervene should be granted, stating that "[t]he Tribes do not seek to bring new claims or issues against the States, but only ask leave to participate in an adjudication of their vital water rights that was commenced by the United States." *Id.*, 460 U.S. at 614. The court then turned to the substantive issues.

The Tribes, in their motions to intervene, made claims for additional Colorado River water rights appurtenant to two types of land. These were:

> (1) the so-called "omitted" lands – irrigable lands, within the recognized 1964 boundaries of the reservations, for which it was said that the United States failed to claim water rights in the earlier litigation; and (2) "boundary" lands – land that was or should have been officially recognized as part of the reservations and that had assertedly been finally determined to lie within the reservation within the meaning of the 1964 decree.

Id., 460 U.S. at 612. On December 22, 1978, the United States joined the Tribes in moving for a supplemental decree to grant additional water rights to the reservations. The Supreme Court considered first the claims for additional water rights for the omitted lands, and then the boundary lands. The omitted lands question addressed by the court was:

> [W]hether the determination of practicably irrigable acreage within recognized reservation boundaries should be reopened to consider claims

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of these proceedings are encouraged to review the underlying pleadings, reports and transcripts to determine which State parties or public agencies participated in which matters and to what extent their positions aligned or differed. Such an effort is beyond the scope of the analysis presented in this chapter.

> for "omitted" lands for which water rights could have been sought in the litigation preceding the 1964 decree.

Id., 460 U.S. at 615. As noted by the Supreme Court, the United States attributed its omission of the additional practicably irrigable acreage from the earlier proceedings to the "complexity of the case." *Id.*, 460 U.S. at 617, n.6.

The United States and the Tribes relied on Article IX of the 1964 Decree to urge the Supreme Court to modify the 1964 Decree to include additional water rights appurtenant to the omitted lands. Article IX provides:

> Any of the parties may apply at the foot of this decree for its amendment or for further relief. The Court retains jurisdiction of this suit for the purpose of any order, direction, or modification of the decree, or any supplementary decree, that may at any time be deemed proper in relation to the subject matter in controversy.

1964 Decree, 373 U.S. at 353. The Supreme Court agreed that Article IX provided it with the "power to correct certain errors, to determine reserved questions, and, if necessary, to make modifications in the decree." 1983 Opinion, 460 U.S. at 618. But the court disagreed that the exercise of that power was appropriate in the circumstances. For a variety of reasons, the court held that "Article IX must be given a narrower reading and should be subject to the general principles of finality and repose, absent changed circumstances or unforeseen issues not previously litigated." *Id.*, 460 U.S. at 619.

First, the Supreme Court cited "a fundamental precept of common-law adjudication … that an issue once determined by a competent court is conclusive." *Id.*, (citations omitted). "Certainty of rights is particularly important with respect to water rights in the Western United States," and the doctrine of prior appropriation "is itself largely a product of the compelling need for certainty in the holding and use of water rights." *Id.*, 460 U.S. at 620 (footnote omitted). In the court's view, "[r]ecalculating the amount of practicably irrigable acreage runs directly counter to the strong interest in finality in this case." *Id.* The court concluded that "Article IX did not contemplate a departure from these fundamental principles so as to permit retrial of factual or legal issues that were fully and fairly litigated 20 years ago." *Id.*, 460 U.S. at 621. Instead, Article IX "was mainly a safety net added to retain jurisdiction" and to ensure that the court was not precluded "from adjusting the decree in light of unforeseeable changes in circumstances." *Id.*, 460 U.S. at 622.

The Supreme Court found that this interpretation of Article IX was consistent with its own history of resolving disputes over boundaries and water rights, which revealed "a simple fact: This Court does not reopen an adjudication in an original action to reconsider whether initial factual determinations were correctly made."

Id., 460 U.S. at 623-624. The court noted that modifications in other cases involving decrees with clauses similar to Article IX were made only in response to changed circumstances. *Id.*

The Supreme Court also expressed "fear that the urge to relitigate, once loosed, will not be easily cabined." *Id.*, 460 U.S. at 625. The court noted that the States had already indicated that they would seek to have the practicably irrigable acreage standard itself reconsidered in light of subsequent Supreme Court decisions in other cases. The court concluded that "[t]hese considerations, combined with the practice in our original cases and the strong res judicata interests involved, lead us to conclude that the irrigable-acreage question should not be relitigated." *Id.*, 460 U.S. at 625-626.[2] The Supreme Court disagreed with the Special Master and sustained the exceptions filed by the States and State agencies to his conclusion. *Id.*, 460 U.S. 615-616.

The Supreme Court then turned to the issue of water rights appurtenant to the disputed boundary lands. Noting that the disputes about the boundaries of the Colorado River and Fort Mojave Indian Reservations left undecided in the 1963 Opinion and 1964 Decree "are still with us," and that disputes about the boundaries of the other three reservations had also emerged since the entry of the 1964 Decree, the court stated that "[i]t is thus necessary to decide whether any or all of these boundary disputes have been 'finally determined' within the meaning of Article II(D)(5), and, if so, whether the Tribes are entitled to an upward adjustment of their water rights." *Id.*, 460 U.S. at 630 and 631. The court briefly summarized the history and status of the boundary disputes and the relevant determinations relating to the boundaries of each of the five reservations. *Id.*, 460 U.S. at 630-634. A detailed discussion of these boundary disputes and determinations may be found in *Updating the Hoover Dam Documents 1978*, Chapter XI.

The relevant determinations affecting the reservation boundary disputes were of two primary types: (1) orders of the Secretary of the Interior (Secretary); and (2) judicial judgments and decrees.[3] The various Secretarial orders concerned the Fort Mojave, Colorado River, Fort Yuma (Quechan), and Chemehuevi Indian Reservations, and the judicial decrees affected the Cocopah and Fort Mojave Indian Reservations (*Cocopah Tribe of Indians* v. *Morton*, No. Civ-70-573-PHX-

[2] *Res judicata* is a preclusion rule that holds that a final judgment on the merits by a court of competent jurisdiction in an action is conclusive as to the rights of the parties to the action, and it bars a subsequent action between the same parties involving the same claim or cause of action.

[3] For the Cocopah Indian Reservation, there was also a statutory provision contained in Section 102(e) of the Colorado River Basin Salinity Control Act, Public Law (Pub. L.) No. 93-320, 88 Stat. 269 (1974), which directed the Secretary of the Interior to cede a tract of Federal land to the Cocopah Tribe as an addition to their reservation. Since the status of these lands as part of the Cocopah Indian Reservation was clearly established by statute, there was no dispute that they would receive water rights, but the Court determined that those rights would date from the statute's effective date of June 24, 1974, and would, therefore, not disturb the prior rights of the States or other parties to the case. 1983 Opinion, 460 U.S. at 641.

WEC (D. Ariz. May 12, 1975) and *Fort Mojave Tribe* v. *LaFollette*, Civ. No. 69-324 MR (D. Ariz. Feb. 7, 1977)).[4] The United States and the Tribes contended that these orders and decrees constituted "final determinations" of the reservation boundaries within the meaning of Article II(D)(5) of the 1964 Decree, and that the Tribes were, therefore, entitled to an upward adjustment in their decreed water rights based on practicably irrigable acreage within the boundary lands. The States and State agencies argued that since they had had no opportunity to participate in any of the proceedings related to either the Secretarial orders or the judicial decrees, these orders and decrees were not "final determinations." The States and State agencies did, however, argue that the boundary disputes were ripe for judicial review and that the Special Master should hear evidence and legal arguments and resolve the disputes for the limited purpose of establishing additional Indian water rights, if any. *Id.*, 460 U.S. at 634.

The Special Master declined to adjudicate the boundary issues. He recognized that the Secretarial orders might, in the future, be set aside following review in an appropriate judicial forum and that the court judgments were not *res judicata* and, therefore, were not binding on the States and State parties since they had not been parties to the judicial proceedings that led to the judgments. The Special Master did, however, conclude in his report that Secretarial orders and court judgments "provided the sort of finality contemplated by the Court" for purposes of Article II(D)(5) of the 1964 Decree. *Id.*, 460 U.S. at 635, *quoting* Special Master Tuttle's report at 64. The Special Master proposed that any remaining concerns could:

> [B]e met by the inclusion in the final decree of the Court of a provision that would reduce the allotment now sought on behalf of the Tribes pro tanto for lands found to be practicably irrigable which subsequent litigation determines not to be Indian land.

Id., 460 U.S. at 635, *quoting* Special Master Tuttle's report at 75.[5] Accordingly, the Special Master accepted almost all the boundary changes set forth by the United States in its December 21, 1978 motion, and the States and State agencies filed exceptions to his findings and conclusions.

The Supreme Court disagreed with the Special Master's conclusion that the reservation boundaries determined by Secretarial order had been "finally determined." The court sustained the States' and State agencies' exceptions and declined to increase the Tribes' water rights based upon those boundary lines. *Id.*, 460 U.S. at 636. This decision affected most of the disputed boundary lands.

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[4] An August 15, 1974, Secretarial order restored some 2,430 acres to the Chemehuevi Indian Reservation. However, neither the United States nor the Chemehuevi Tribe claimed that there was any irrigable acreage within this addition. 1983 Opinion, 460 U.S. at 633.

[5] *Pro tanto* is a legal term from the Latin meaning "as far as it goes" or "for so much," in this context referring to a partial reduction of the decreed water allotment.

With respect to boundaries determined by judicial decree, however, the Supreme Court adopted the Special Master's conclusions and overruled the exceptions. *Id.* Only certain disputed boundary lands in the Fort Mojave and Cocopah Indian Reservations were affected by this decision. The two court judgments recognized by the Supreme Court as having "finally determined" reservation boundaries were a 1977 judgment in favor of the Fort Mojave Tribe against the assignees of a railroad patent grant, which added almost 640 acres of land to the reservation, and a May 12, 1975, decree confirming as part of the Cocopah Indian Reservation an accretion of land approximately 883 acres in size. *Id.*, 460 U.S. at 636, n. 26. While these earlier judgments did not bind the States or State agencies because they had not been parties to the actions, the court noted that the States and State agencies had not asserted that the decrees were erroneous and that they had stated in their briefs to the court that they did not seek to challenge title to land determined in any of the earlier cases.

While the Supreme Court did not express any views concerning the Secretary's authority to issue his orders or the soundness of his determinations on the merits, the court did not regard the Secretarial orders as determinative for purposes of Article II(D)(5) of the 1964 Decree. The court stated that in the 1963 Opinion the court "in no way intended that ex parte secretarial determinations of the boundary issues would constitute 'final determinations' that could adversely affect the States, their agencies, or private water users holding priority rights." *Id.*, 460 U.S. at 636. At the same time, however, the court disagreed with the States' and State agencies' position that the Special Master should adjudicate the boundary issues. Instead, the court stated that "[i]t is clear enough to us, and it should have been clear enough to others, that our 1963 opinion and 1964 decree anticipated that, if at all possible, the boundary disputes would be settled in other forums." *Id.*, 460 U.S. at 638.

As one of the possible "other forums," the Supreme Court specifically pointed to a then-pending action brought by The Metropolitan Water District of Southern California (MWD) and other California State agencies in the United States District Court for the Southern District of California challenging the Secretary's orders with respect to reservation boundaries. The case, *The Metropolitan Water District of Southern California and Coachella Valley Water District* v. *United States, et al.*, Civil No. 81-0678-GT(M) (Apr. 28, 1982) (*The Metropolitan Water District of Southern California* v. *United States*) had been stayed pending the Supreme Court's decision on the issues before it. The Supreme Court stated that:

> At this juncture, we are unconvinced that the United States District Court for the Southern District of California, in which the challenge to the Secretary's actions has been filed, is not an available and suitable forum to settle these disputes.

Id. The court noted, however, that the United States had filed a motion to dismiss the action based on lack of standing, the absence of indispensable parties (the Tribes), sovereign immunity, and the applicable statute of limitations. The

motion to dismiss was still pending in the district court, and the Supreme Court did not comment on it substantively.

The Supreme Court did, however, state that if the grounds for dismissal were sustained by the district court and not overturned on appeal, "[t]here will be time enough … to determine whether the boundary issues foreclosed by such action are nevertheless open for litigation in this Court." *Id.* If, on the other hand, the district court litigation went forward and was concluded, "there will then also be time enough to determine the impact of the judgment on our outstanding decree with respect to Indian reservation water rights." *Id.* (footnote omitted). The Supreme Court stated that:

> [I]n our judgment, the litigation filed in the United States District Court for the Southern District of California should go forward, intervention motions, if any are to be made, should be promptly made, and the litigation expeditiously adjudicated.

Id., 460 U.S. at 639. *The Metropolitan Water District of Southern California* v. *United States* litigation is further discussed later in this chapter.

With respect to the boundary lands claims of the Tribes and the United States, the 1983 Opinion in *Arizona* v. *California* definitively resolved only boundary issues that had been finally determined by court decree. For those parcels added to the reservations by court decree, the court accepted the Special Master's determination of practicably irrigable acreage, and concluded that:

> [T]he decree should be amended by providing to the respective reservations appropriate water rights to service the irrigable acreage the Master found to be contained within the tracts adjudicated by court decree to be reservation lands.

Id., 460 U.S. at 641.

Thus, in its 1983 Opinion, the Supreme Court held that: (1) the motions of the Tribes to intervene should be granted; (2) the Tribes' water rights should not be increased to take into account the "omitted lands" for which the United States failed to claim water rights in litigation preceding the 1964 Decree; (3) the Tribes' water rights should be increased to take into account irrigable acreage adjudicated to be within the reservation boundaries in two actions to quiet title, because those actions had "finally determined" the disputed reservation boundaries within the meaning of the 1964 Decree; and (4) the Tribes' water rights should not be increased to take into account irrigable acreage existing within additional lands determined by the Secretary of the Interior to be within their reservation boundaries, because the Secretarial determinations had not "finally determined" the disputed boundaries within the meaning of the 1964 Decree. The court anticipated that, if possible, the remaining boundary disputes would be settled in other forums.

In accordance with this decision, the Supreme Court entered the 1984 Second Supplemental Decree, 466 U.S. 144, which amended Article II(D)(2) and II(D)(5) of the 1964 Decree to add additional quantities of water for, respectively, the Cocopah Indian Reservation and the Fort Mojave Indian Reservation, and to make corresponding amendments to Paragraph I(A) of the 1979 Supplemental Decree listing present perfected rights.

The 1983 Opinion and 1984 Second Supplemental Decree left unresolved the remaining boundary disputes, which affected the Fort Mojave, Colorado River, and Fort Yuma Indian Reservations. These disputes moved forward, first in the district court, and then before the Supreme Court and Special Master.

The Metropolitan Water District of Southern California v. *United States*

Following the 1983 Opinion, the district court lifted the stay in *The Metropolitan Water District of Southern California* v. *United States*. MWD and the Coachella Valley Water District (CVWD) had brought suit under the provisions of the Administrative Procedure Act, Public Law (Pub. L.) No. 79-404, 60 Stat. 237 (1946) (APA), to challenge the Secretarial orders that determined the disputed boundaries of the Fort Mojave, Colorado River, and Fort Yuma Indian Reservations. In addition to the United States and the Secretary of the Interior, the named defendants included the States of Arizona and California. The Quechan Indian Tribe, Fort Mojave Indian Tribe, and the Colorado River Indian Tribes were intervenors.

Pursuant to a stipulation of the parties, the district court proceedings were initially concerned only with the disputed boundaries of the Fort Mojave Indian Reservation, specifically the area known as the Hay and Wood Reserve, and the 1974 Secretarial order that ordered a resurvey of the Hay and Wood Reserve, resulting in the inclusion of approximately 3,500 acres of additional lands within the Fort Mojave Indian Reservation. The district court issued a decision on motions and cross-motions for summary judgment on February 26, 1986. *The Metropolitan Water District of Southern California* v. *United States*, 628 F. Supp. 1018 (S.D. Cal. 1986).

The district court concluded that the Secretary lacked authority to order a resurvey of the Hay and Wood Reserve and that, even if the Secretary had the authority, the *ex parte* order to resurvey the Hay and Wood Reserve had not provided the plaintiffs and other interested parties with the minimum due process required under the Fifth Amendment, including notice and an opportunity to be heard. The district court ordered that the Secretary's 1974 order was void, granting that portion of MWD's motion for summary judgment. The district court denied all other portions of the plaintiff's motion for summary judgment and the United States' and Fort Mojave Indian Tribe's motions in their entirety. *Id.*, 628 F. Supp.

at 1025. The district court also determined that, under the authority granted by the APA, the district court should make its own *de novo* determination of the boundaries based on the alternative grounds that the 1974 order exceeded the Secretary's authority and that the procedures used by the Secretary to adjudicate the boundary did not comport with due process. *Id.*, 628 F. Supp. at 1024-1025.

The United States, the Quechan Indian Tribe, the Fort Mojave Indian Tribe, and the Colorado River Indian Tribes brought an interlocutory appeal in the Ninth Circuit Court of Appeals challenging the district court's holdings that: (1) the Secretary lacked authority to order a resurvey of the boundaries of the Fort Mojave Indian Reservation; and (2) the district court had authority to conduct a trial *de novo* to determine the boundaries of the Fort Mojave Indian Reservation. On appeal, the States of Arizona and California joined the plaintiffs as appellees. On October 14, 1987, the court of appeals ruled in favor of the United States and the three Tribes and remanded the matter to the district court with direction to dismiss the case for lack of jurisdiction. *The Metropolitan Water District of Southern California* v. *United States*, 830 F.2d 139 (9th Cir. 1987).

The court of appeals concluded that the district court lacked jurisdiction to hear claims challenging the Secretary's orders concerning Indian reservation boundaries because the United States had not waived sovereign immunity with respect to such claims. Although the plaintiffs had brought the action under the APA, which provides a limited waiver of sovereign immunity for suits against Federal officials in which the plaintiff seeks nonmonetary relief, the court of appeals held the APA "does not waive immunity as to any claims which are expressly or impliedly forbidden by 'any other statute that grants consent to suit.'" *Id.*, 830 F.2d at 143. Specifically, the court of appeals held that the United States was immune from suit and plaintiffs' claims were barred under provisions of the Quiet Title Act, 28 U.S.C. § 2409a(a), which states in relevant part:

> The United States may be named as a party defendant in a civil action under this section to adjudicate a disputed title to real property in which the United States claims an interest, other than a security interest or water rights. This section does not apply to trust or restricted Indian lands . . . .

Id., 830 F.2d at 142, n. 4. The court of appeals held that the "Indian lands exception" to the Quiet Title Act's waiver of sovereign immunity is based on "the Federal Government's trust responsibility for Indian lands" as "the result of solemn obligations entered into by the United States Government." *Id.*, 830 F.2d at 144 (quoting H.R. Rep. No. 1539, 92nd Cong., 2nd Sess. (1972)). MWD had asserted that the Quiet Title Act did not apply because MWD's objective in seeking determination of the Fort Mojave Indian Reservation's boundaries was not to quiet title in itself, but to prevent the Tribe from gaining an earlier water priority because of additional lands the survey would include within the Fort Mojave Indian Reservation. *Id.*, 830 F.2d at 143. The court of appeals

rejected this argument because the "effect of a successful challenge would be to quiet title in others than the Tribe." *Id.* The court of appeals concluded that "MWD challenges the fundamental authority of the Secretary to establish reservation boundaries and to protect the property interests of Indian tribes. This it cannot do." *Id.*, 830 F.2d at 144.

Finally, MWD argued that, even if the Quiet Title Act did apply, the suit was nonetheless permitted under the McCarran Amendment, 43 U.S.C. § 666. *Id.* The court of appeals disagreed, stating that while the McCarran Amendment "provides that the United States is deemed to have waived its immunity in any suit for the adjudication of rights to the use of water of a river system or other source, or for the administration of such rights," it applies only to general adjudications that adjudicate the rights of all claimants on a stream, and this suit was not such a general adjudication. *Id.* The court of appeals noted, however, that the ongoing Supreme Court litigation "under the continuing decree may be such a general adjudication." *Id.*, 830 F.2d at 144, n. 7.

Appellees – MWD, CVWD, the State of California, and the State of Arizona filed a petition for writ of certiorari which was granted by the Supreme Court, *California* v. *United States*, 485 U.S. 1020 (1988). In a *per curiam* opinion decided June 12, 1989, the Supreme Court affirmed the court of appeals decision holding that the district court lacked jurisdiction to hear the plaintiff's claims, stating simply "[t]he judgment below is affirmed by an equally divided Court." *California* v. *United States*, 490 U.S. 920 (1989). The court of appeals decision "dispelled any expectation that a 'final determination' of reservation boundaries would occur in [the district court] forum." 2000 Opinion, 530 U.S. at 401.

The 2000 Opinion and 2000 Supplemental Decree

Shortly after affirming the court of appeals decision in *The Metropolitan Water District of Southern California* v. *United States*, the United States Supreme Court on October 10, 1989, granted the motion of the State parties in *Arizona* v. *California* "to reopen the decree to determine disputed boundary claims with respect to the Fort Mojave, Colorado River and Fort Yuma Indian Reservations." 493 U.S. 886 (1989). The United States and the Tribes did not object to the motion. To address these issues, the Supreme Court appointed a new Special Master, Robert McKay, on November 17, 1989. 493 U.S. 970 (1989). As a result of Special Master McKay's death soon thereafter, the court appointed Frank McGarr, a retired Federal judge, as Special Master on November 13, 1990, giving him full authority to direct subsequent proceedings, summon witnesses, issue subpoenas, take evidence, and submit reports to the court as he deemed appropriate. 498 U.S. 964 (1990).

The States of Arizona and California, The Metropolitan Water District of Southern California, and the Coachella Valley Water District engaged in several

years of proceedings before Special Master McGarr, which included the issuance of an opinion and order by the Special Master in September 1991. Settlement discussions among the parties resulted in proposed settlements of the outstanding issues involving two of the three reservations, the Fort Mojave Indian Reservation and the Colorado River Indian Reservation. The Special Master's report recommended that the Supreme Court approve the parties' proposed settlements. The Special Master's proposed supplemental decree included additional quantities of water for both reservations based on the settlement agreements. The Supreme Court received the Special Master's report and proposed supplemental decree on October 4, 1999, and set a schedule for filing exceptions to the report. 528 U.S. 803 (1999). On June 19, 2000, the court issued its 2000 Opinion concerning the Special Master's recommendations, proposed supplemental decree, and all exceptions to them.

The Supreme Court accepted the Special Master's recommendations and approved both settlements. 2000 Opinion, 530 U.S. at 418-419. The court included the proposed supplemental decree as an appendix to its 2000 Opinion, directing the parties to submit any objections by August 22, 2000. *Id.*, 530 U.S. at 420. No objections were filed within the prescribed time, and on October 10, 2000, the court approved and entered the 2000 Supplemental Decree at 531 U.S. 1.

The Supreme Court, in its 2000 Opinion, specified the settlement terms for each of the two settlements, citing the Special Master's report. With respect to the Fort Mojave Indian Reservation, the court stated:

> The parties agreed to resolve the matter through an accord that (1) specifies the location of the disputed boundary; (2) preserves the claims of the parties regarding title to and jurisdiction over the bed of the last natural course of the Colorado River within the agreed-upon boundary; (3) awards the Tribe the lesser of an additional 3,022 acre-feet of water or enough water to supply the needs of 468 acres; (4) precludes the United States and the Tribe from claiming additional water rights from the Colorado River for lands within the Hay and Wood Reserve; and (5) disclaims any intent to affect any private claims to title to or jurisdiction over any lands.

Id., 530 U.S. at 418. With respect to the Colorado River Indian Reservation, the court stated:

> The parties agreed to resolve the matter through an accord that (1) awards the Tribes the lesser of an additional 2,100 acre-feet of water or enough water to irrigate 315 acres; (2) precludes the United States or the Tribe from seeking additional reserved water rights from the Colorado River for lands in California; (3) embodies the parties' intent not to adjudicate in these proceedings the correct location of the disputed boundary; (4) preserves the competing claims of the parties to title to or jurisdiction over the bed of the Colorado River within the reservation;

> and (5) provides that the agreement will become effective only if the Master and the Court approve the settlement.

Id., 530 U.S. at 419. Without additional comment, the court noted both the Special Master's concern that the Colorado River Indian Reservation settlement did not resolve the location of the disputed boundary, and his recognition that the settlement "did achieve the ultimate aim of determining water rights associated with the disputed boundary lands." *Id.* The court's acceptance of the Special Master's recommendations and its approval of the settlements with respect to the Fort Mojave Indian Reservation and the Colorado River Indian Reservation gave final resolution to all issues involving two of the three reservations.

The claims relating to the disputed boundary lands and appurtenant water rights of the Fort Yuma Indian Reservation remained unsettled. The recommendations in the Special Master's report concerning these claims and the exceptions to them were considered by the Supreme Court in its 2000 Opinion. The Quechan Tribe, and the United States on behalf of the Tribe, asserted claims for increased rights to Colorado River water based on "the contention that the Fort Yuma (Quechan) Indian Reservation encompasses some 25,000 acres of disputed boundary lands not attributed to that reservation in earlier stages of the litigation." *Id.*, 530 U.S. at 397. The primary basis for claiming 25,000 additional acres of disputed boundary lands was an order of the Secretary of the Interior dated December 20, 1978. The 25,000 acres in dispute were included as part of the Fort Yuma Indian Reservation in the Executive order that created the reservation in 1884. In 1893, the Quechan Tribe and the United States entered into an agreement under which the Tribe purportedly ceded title to the disputed lands to the United States. In later years, disputes arose concerning the meaning and effect of the 1893 agreement, including whether the effectiveness of the purported cession was conditioned on the occurrence of certain events, and whether those conditions were satisfied.

In 1936, the Solicitor of the United States Department of the Interior issued an opinion that the cession was unconditional and that the Tribe had no claim to the lands. *Id.*, 530 U.S. at 402. This remained the position of the United States Department of the Interior until a 1978 Solicitor's opinion reversed the 1936 opinion. The Secretary's order dated December 20, 1978, adopted the position of the 1978 Solicitor's opinion that the disputed lands were part of the reservation, with certain exceptions. The Secretary's order "both prompted the United States to file a water rights claim [in *Arizona* v. *California*] for the affected boundary lands and provided the basis for the Tribe's intervention to assert a similar, albeit larger, water rights claim." *Id.*, 530 U.S. at 405.

The merits of the claims were not, however, before the Supreme Court for decision. Instead, the issue before the court was a technical one:

> In this decision, we resolve a threshold question regarding these claims to additional water rights: Are the claims precluded by this Court's prior decision in *Arizona* v. *California*, 373 U.S. 546 [1963 Opinion] . . . or by a consent judgment entered by the United States Claims Court in 1983?

Id., 530 U.S. at 397. If the claims were precluded for either reason, they would be dismissed. The Special Master's report recommended that the court reject the first ground for preclusion but accept the second. *Id.* In its 2000 Opinion, the Supreme Court rejected "both grounds for preclusion and remand[ed] the case to the Special Master for consideration of the claims for additional water rights appurtenant to the disputed boundary lands." *Id.*

The State parties argued that "the finality rationale this Court employed in dismissing the 'omitted lands' claims" in the 1983 Opinion should also be applied to preclude the boundary lands claims by the United States and Quechan Tribe because they could have been asserted by the United States prior to the 1963 Opinion and 1964 Decree. *Id.*, 530 U.S. at 406-407. The Special Master had rejected this argument because the 1978 order by the Secretary, recognizing the disputed lands as reservation lands, was a new circumstance, and because "although the U.S. on behalf of the Tribe failed to assert such claims in the proceeding leading to the 1964 decree, a later and then unknown circumstance bars the application of the doctrine of *res judicata* to this issue." *Id.*, 530 U.S. at 407-408 (quoting the Special Master's 1999 report). The Supreme Court held that the Special Master had improperly concluded that the 1978 Secretarial order was a "later and then unknown circumstance" because, while the order was later, the underlying facts were unchanged. *Id.*, 530 U.S. at 408.

Nevertheless, the Supreme Court agreed with the Special Master's conclusion that the United States and the Quechan Tribe were not precluded by the earlier decisions and orders in the case from asserting their claims. This was because the court found that the State parties had failed to raise the preclusion argument at earlier stages of the litigation, raising it for the first time in 1989. The Supreme Court concluded that although the technical rules of preclusion are not strictly applicable because the earlier decisions and opinions were part of a single ongoing original jurisdiction action before the Supreme Court, and could therefore potentially be reconsidered, its decision should be informed by "the principles upon which these rules are founded," and "[t]hose principles rank res judicata an affirmative defense ordinarily lost if not timely raised." *Id.*, 530 U.S. at 410. The court held that:

> In view of the State parties' failure to raise the preclusion argument earlier in the litigation, despite ample opportunity and cause to do so, we hold that the claims of the United States and the Tribe to increased water rights for the disputed boundary lands of the Fort Yuma Reservation are not foreclosed by our decision in [the 1963 Opinion].

Id., 530 U.S. at 413.

The second grounds for preclusion cited by the State parties was the 1983 consent judgment entered by the United States Court of Claims. The 1983 consent judgment concluded litigation filed by the Quechan Tribe in 1951 under the Indian Claims Commission Act adopted by Congress in 1946, Pub. L. No. 79-726, 60 Stat. 1049. The Indian Claims Commission Act established the Indian Claims Commission with the power to decide claims by Indian tribes against the United States. The Quechan Tribe's action, referred to by the parties as Docket No. 320 after its designation by the Indian Claims Commission, challenged the validity of the 1893 agreement between the Tribe and the United States. The Tribe sought money damages from the United States under two alternative theories: either (1) that obligations in the 1893 agreement had not been performed by the United States "rendering the cession void" such that the Tribe still had beneficial title to the land and was therefore entitled to damages for trespass; or (2) that the 1893 agreement was "contractually valid, but constituted an uncompensated taking of tribal lands, an appropriation of lands for unconscionable consideration, and/or a violation of standards of fair and honorable dealing." *Id.*, 530 U.S. at 403.

The Indian Claims Commission conducted a trial on liability, but stayed proceedings for several years in 1970. In 1976, Congress terminated the Indian Claims Commission. Its ongoing cases, including Docket No. 320, were transferred to the United States Court of Claims. Following the 1978 Secretarial order recognizing the 25,000 acres in dispute as part of the Fort Yuma Indian Reservation, the United States no longer opposed the Tribe's claim for trespass in Docket No. 320, and settlement discussions proceeded on the amount of damages. The final judgment entered by the United States Court of Claims on August 11, 1983, approved the settlement, under which the United States paid the Tribe $15 million in full satisfaction of "all rights, claims, or demands which [the Tribe] has asserted or could have asserted with respect to the claims in Docket 320." *Id.*, 530 U.S. at 405 (quoting the final judgment).

The State parties asserted, and Special Master McGarr agreed, that the claims made by the United States and the Tribe for water rights appurtenant to the disputed boundary lands were barred by the 1983 consent judgment because of the provision in the judgment barring the Tribe from asserting further "rights, claims, or demands." *Id.*, 530 U.S. at 413. The Special Master concluded that when the Tribe accepted money in settlement, it relinquished its claim to title. *Id.* The Supreme Court disagreed, holding that issue preclusion required that the issue must have been actually litigated and determined by the court and that the determination of the issue must have been essential to the judgment. *Id.*, 530 U.S. at 414. Where, as in Docket No. 320, there was a settlement and the issue was never determined by the court, the Supreme Court found the rule of issue preclusion did not apply. *Id.* In addition, in Docket No. 320, the Tribe offered alternative theories, both for trespass, where the Tribe asserted it retained title, and for taking. The consent judgment "embraced all of the Tribe's claims"

and the Tribe did not elect, nor was it required to elect, one theory or the other in order to gain approval of the settlement for the consent judgment. *Id.*, 530 U.S. at 417.

For these reasons, the Supreme Court remanded "the outstanding water rights claims associated with the disputed boundary lands of the Fort Yuma Indian Reservation to the Special Master for determination on the merits." *Id.*, 530 U.S. at 419-420. As the court noted, "[t]hose claims are the only ones that remain to be decided in *Arizona* v. *California*; their resolution will enable the Court to enter a final consolidated decree and bring this case to a close." *Id.*, 530 U.S. at 420. Thus, in its 2000 Opinion and 2000 Supplemental Decree, the Supreme Court addressed the remaining claims involving the Fort Mojave, Colorado River, and Fort Yuma Indian Reservations. It accepted the parties' proposed settlements respecting the Fort Mojave and Colorado River Indian Reservations, and remanded the outstanding water rights claims associated with the disputed boundary lands of the Fort Yuma Indian Reservation to the Special Master.

The 2006 Consolidated Decree

With the substantive issues concerning the water rights claims associated with the disputed boundary lands of the Fort Yuma Indian Reservation remanded to the Special Master for decision, the parties turned to the factual investigation, discovery and disclosure necessary to prepare for adjudication of the two primary issues. The issues that required adjudication were: first, the status of the disputed boundary lands; and second, if the disputed boundary lands were within the Reservation, the amount of practicably irrigable acreage and quantity of Federal reserved water rights appurtenant to those lands. The parties conducted research and retained experts to develop the factual information and documentary record necessary to address both issues. The Special Master set a schedule for discovery and disclosure, and for submission of summary judgment motions. The first issue set for consideration by the Special Master was the status of the boundary lands. In December 2003, the Special Master held a hearing on the State parties' motions seeking summary judgment that the disputed lands were not part of the Fort Yuma Indian Reservation. He denied summary judgment, and the matter was set for an evidentiary hearing.

Following the Special Master's denial of summary judgment, the parties engaged in extensive settlement discussions and reached settlement agreements which resolved all outstanding issues.

The Settlement Agreement in *Arizona v. California* By and Among the Quechan Indian Tribe of the Fort Yuma Indian Reservation, the United States of America, The Metropolitan Water District of Southern California, Coachella Valley Water District, and the State of California, dated February 14, 2005, resolved the water

rights claims for the portion of the Fort Yuma Indian Reservation within the State of California. With respect to the water rights, the California settlement agreement agreed to an increase in the Reservation's decreed water right in the amount of 20,000 acre-feet of diversions from the mainstream of the Colorado River, or the amount of Colorado River water necessary to supply the consumptive use required for irrigation of 2,998.50 acres, whichever was less.

The Arizona v. California Settlement Agreement Between the United States, the Quechan Indian Tribe of the Fort Yuma Indian Reservation and the State of Arizona, dated February 17, 2005, resolved the water rights claims for the portion of the Fort Yuma Indian Reservation within the State of Arizona. The Arizona settlement agreement provided for 6,350 acre-feet of diversions, or the amount of water necessary to supply the consumptive use required for irrigation of 952 acres, whichever was less.

The parties submitted the settlements to Special Master McGarr, and on June 14, 2005, he submitted his report to the United States Supreme Court recommending approval of the settlements of the Federal reserved water rights claim with respect to both the Arizona and California lands of the Fort Yuma Indian Reservation and a proposed supplemental decree implementing those settlements. The California settlement is attached as Exhibit A to the Special Master's report. The Arizona settlement is attached as Exhibit B.

Rather than enter another supplemental decree in these proceedings, the Supreme Court requested that the parties draft a final comprehensive decree to embody all previous decrees including the 2005 proposed supplemental decree included in Special Master McGarr's report. Such a decree was submitted for the court's consideration on February 24, 2006.

On March 27, 2006, the Supreme Court entered the Consolidated Decree, 547 U.S. 150 (2006). The court stated that:

> This decree is entered in order to provide a single convenient reference to ascertain the rights and obligations of the parties adjudicated in this original proceeding, and reflects only the incremental changes in the original 1964 decree by subsequent decrees and the settlements of the federal reserved water rights claim for the Fort Yuma Indian Reservation.

Id., 547 U.S. at 152. The court specified that, except where the text of the Consolidated Decree differs from previous decrees, it "does not vacate the previous decrees nor alter any of their substantive provisions, and all mandates, injunctions, obligations, privileges, and requirements of this decree are deemed to remain effective as of the date of their respective entry in the prior decrees." *Id.*, 547 U.S. at 152-153.

Entry of the Consolidated Decree in *Arizona* v. *California* resolved all issues which had been brought before the court in that case prior to March 27, 2006. As of December 31, 2008, no additional proceedings were pending before the court in *Arizona* v. *California*.

Chapter 11: List of References

Federal Court Decisions

Arizona v. *California*:

Arizona v. *California*, 364 U.S. 940 (1961) (Order).

Arizona v. *California*, 373 U.S. 546 (1963) (Opinion). DVD Supplement 2.

Arizona v. *California*, 376 U.S. 340 (1964) (1964 Decree). Appendix 4 and DVD Supplement 3.

Arizona v. *California*, 383 U.S. 268 (1966) (Order).

Arizona v. *California*, 439 U.S. 419 (1979) (Supplemental Decree). DVD Supplement 4.

Arizona v. *California*, 440 U.S. 942 (1979) (Order).

Arizona v. *California*, 444 U.S. 1009 (1980) (Order).

Arizona v. *California*, 456 U.S. 912 (1982) (Order).

Arizona v. *California*, 460 U.S. 605 (1983) (Opinion). DVD Supplement 6.

Arizona v. *California*, 466 U.S. 144 (1984) (Second Supplemental Decree). DVD Supplement 7.

Arizona v. *California*, 493 U.S. 886 (1989) (Order).

Arizona v. *California*, 493 U.S. 970 (1989) (Order).

Arizona v. *California*, 498 U.S. 964 (1990) (Order).

Arizona v. *California*, 528 U.S. 803 (1999) (Order).

Arizona v. *California*, 530 U.S. 392 (2000) (Opinion). DVD Supplement 9.

Arizona v. *California*, 531 U.S. 1 (2000) (Supplemental Decree). DVD Supplement 10.

Arizona v. *California*, 547 U.S. 150 (2006) (Consolidated Decree). Appendix 5 and DVD Supplement 12.

The Metropolitan Water District of Southern California v. *United States*, 628 F. Supp. 1018 (S.D. Cal. 1986).

The Metropolitan Water District of Southern California v. *United States*, 830 F.2d 139 (9th Cir. 1987).

California v. *United States*, 485 U.S. 1020 (1988).

California v. *United States*, 490 U.S. 920 (1989).

Reports

Special Master Simon Rifkind, Report to the Supreme Court, December 5, 1960, *Arizona* v. *California*. DVD Supplement 1.

Special Master Elbert P. Tuttle, Report, February 22, 1982, *Arizona* v. *California*. DVD Supplement 5.

Special Master Frank J. McGarr, Report and Recommendation and Appendix, July 28, 1999, *Arizona* v. *California*. DVD Supplement 8.

Special Master Frank J. McGarr, The Special Master's Approval of Final Settlements and Recommendations to the Court, June 14, 2005, *Arizona* v. *California*. DVD Supplement 11.

CHAPTER 12: MISCELLANEOUS ACTS AND FEDERAL COURT DECISIONS

Introduction

This chapter discusses the implementation of other Federal legislation of interest during the period 1979 through 2008. Included are acts regarding Salton Sea restoration and Federal actions to implement the Colorado River Floodway Protection Act, Public Law (Pub. L.) No. 99-450, 100 Stat. 1129 (1986) and the Act of December 22, 1944, Pub. L. No. 78-534, 58 Stat. 887 (Flood Control Act of 1944). This chapter also discusses Federal court decisions during the period from 1979 through 2008 relating to the Secretary of the Interior's management of the Colorado River and the Federal facilities constructed to store or convey Colorado River water. This chapter brings together often unrelated topics likely to be read independently of each other; for that reason, defined terms are repeated in each section.

Salton Sea

The Salton Sea is the State of California's largest inland terminal lake. Located in Riverside and Imperial Counties, the Salton Sea occupies the lowest part of the Salton Basin. Water has filled the Salton Basin on several occasions in past centuries. The present Salton Sea was formed in 1905, when Colorado River floods breached an early irrigation diversion structure and flowed into the then-dry Salton Basin. In February 1907, the breach was closed by local agricultural interests and the Southern Pacific Railroad.

Subsequently, agricultural development in areas surrounding the Salton Sea expanded. In the 1920s the Federal government designated public lands located in and surrounding the Salton Sea as a repository to receive and store agricultural, surface, and subsurface drainage waters. The construction and completion of the All-American Canal and the Coachella Canal in the 1940s enabled further agricultural development in the area. The Salton Sea now receives the majority of its water from agricultural runoff from the Imperial, Coachella, and Mexicali Valleys, with a very small percentage of inflows derived from tributaries and direct precipitation. The total average annual inflow to the Salton Sea was estimated at 1,343,395 acre-feet in an October 2002 report entitled *Final Environmental Impact Report/Environmental Impact Statement, Imperial Irrigation District Water Conservation and Transfer Project.* This report also projected a decrease in future inflows of up to 300,000 acre-feet annually, due to water transfers from the Imperial Irrigation District (IID) in accordance with the development and potential adoption of a quantification settlement agreement. See

Chapter 6 for a discussion of the Colorado River Water Delivery Agreement: Federal Quantification Settlement Agreement (CRWDA or Federal QSA).

On December 31, 2008, the surface elevation of the Salton Sea was 230 feet below mean sea level (-230 feet msl).[1] At this elevation, the Salton Sea has a maximum depth of about 50 feet, with an estimated surface area of 232,000 acres (362 square miles). In addition to other Federal, State, and tribal ownership of lands in the area, approximately 80,000 acres of land adjacent to and under the Salton Sea are withdrawn for Bureau of Reclamation (Reclamation) project purposes.

Due to the nutrient-rich inflows from agricultural runoff, the Salton Sea became a highly productive fishery in the latter half of the 20th century, providing habitat for hundreds of migratory and resident bird species. Several species of fish were introduced and thrived. Tilapia, inadvertently and unexpectedly introduced in the 1960s from a commercial fish farm, dominated the fish community, providing an abundant forage base for the marine sport fish and fish-eating birds. These popular fisheries were a fundamental driver of the growing recreational use of the Salton Sea in the 1950s and 1960s.

Because the Salton Sea is an inland terminal body of water and has no outlet, inflows carrying approximately 4 million tons of salt annually caused salinity to gradually increase over time. By the late 1980s, increasing nutrient and salinity levels began to result in significant adverse effects to both fish and wildlife. In 1992, over 150,000 eared grebes died on the Salton Sea, capturing national attention. Numerous such events occurred in subsequent years. In 2003, a collapse of the sport fishery occurred, and by 2007, only tilapia had shown any recovery.

As of December 31, 2008, the salinity of the Salton Sea was approximately 50,000 milligrams/liter (mg/L). As water transfers are undertaken in accordance with the CRWDA (the Federal QSA), reductions in inflows are projected to accelerate salinity increases in the Salton Sea. In the absence of additional restoration measures, salinity levels of the Salton Sea are predicted to rise above 60,000 mg/L by 2017, a level at which no fisheries are expected to survive. See Bureau of Reclamation, *Salton Sea Study Status Report*, January 2003.

Studies regarding potential restoration methodologies for the Salton Sea have been conducted since the late 1960s. In October 1992, the Reclamation Projects Authorization and Adjustment Act of 1992, Pub. L. No. 102-575, Title XI, 106 Stat. 4661 (1992) authorized the United States Department of the Interior to conduct research which would lead to the development of methods to reduce and control salinity, provide endangered species habitat, enhance fisheries, and protect recreational values of the Salton Sea. In 1993, IID, the Coachella Valley Water District (CVWD), and Imperial and Riverside Counties formed the Salton Sea

[1] Elevations below sea level are shown as negative numbers.

Authority, which worked with Reclamation and other Federal and California State entities to develop plans to improve water quality, stabilize water elevation, and enhance the Salton Sea's recreational and economic development potential.

In 1994, the Salton Sea Authority, Reclamation, and the California Department of Water Resources entered into an agreement for a cooperative study to assess the Salton Sea's status. A total of 54 salinity and elevation control restoration methods were evaluated and reported in the September 1997 *Salton Sea Alternative Evaluation Final Draft Report*; however, no specific restoration alternative was recommended for implementation due to a lack of sufficient site-specific studies involving location, size, operational details, and additional biological, chemical, and pathogenic information.

Subsequently, the Salton Sea Reclamation Act of 1998, Pub. L. No. 105-372, 112 Stat. 3377 (1998), authorized the Secretary of the Interior (Secretary), in cooperation with the Salton Sea Authority and the State of California, to complete all necessary studies and evaluations of various options that permit the continued use of the Salton Sea as an agricultural drainage repository while reducing and stabilizing the overall salinity and water surface elevation. In addition, the Salton Sea Reclamation Act authorized studies of various options which would reclaim long-term, healthy fish and wildlife resources and their habitats, and enhance the potential for recreational use and economic development. On January 27, 2000, the United States Department of the Interior transmitted to Congress and made available to the public several reports including:

- *Overview and Summary of Salton Sea Restoration Project Draft EIS/EIR*, January 2000, prepared by Reclamation in cooperation with the Salton Sea Authority

- *Draft Salton Sea Restoration Project Environmental Impact Statement/Environmental Impact Report*, January 2000, prepared by Tetra Tech, Inc., for the Salton Sea Authority and Reclamation

- *Strategic Science Plan Salton Sea Restoration Project*, January 2000, prepared by the Salton Sea Science Subcommittee of the Salton Sea Research Management Committee

- *Salton Sea Alternatives Final Preappraisal Report*, November 12, 1998, prepared by Reclamation

These documents provided a detailed description of the scope and results of scientific studies undertaken, analyzed the environmental impacts of various alternatives, and provided a summary of findings and recommendations for future actions.

In January 2003, Reclamation transmitted a status report to Congress entitled *Salton Sea Study Status Report*, examining various restoration proposals that considered future inflow reductions to the Salton Sea of up to 300,000 acre-feet per year. The Water Supply, Reliability and Environmental Improvement Act, Pub. L. No. 108-361, Title II, 118 Stat. 1701 (2004), directed the Secretary, through Reclamation, in coordination with the State of California and the Salton Sea Authority, to complete a feasibility study regarding Salton Sea restoration. Reclamation, in cooperation with the Natural Resources Agency of the State of California (California Natural Resources Agency) and the Salton Sea Authority, studied six restoration alternative concepts which were based on previous studies. The alternatives included dividing the Salton Sea with various barrier and dam designs, creating concentric lakes around the perimeter of the Salton Sea, providing habitat enhancement without marine lakes, and a "no action" alternative. Estimated cost of the alternatives ranged from $3.5 billion to $14 billion in 2006 dollars. The information from these studies was released by Reclamation in two reports: *Restoration of the Salton Sea Summary Report*, published in September 2007; and the more comprehensive *Restoration of the Salton Sea Final Report, Volumes I and II*, dated December 2007.

From 2002 through 2004, the California legislature enacted legislation supporting the implementation of a quantification settlement agreement and expressed its intent that the State of California undertake the restoration of the Salton Sea ecosystem. The California Natural Resources Agency, under the direction of the California Department of Water Resources and the California Department of Fish and Game, released the *Salton Sea Ecosystem Restoration Program Draft Programmatic Environmental Impact Report*, dated October 2006, and submitted to the State legislature the *Salton Sea Ecosystem Restoration Program Preferred Alternative Report and Funding Plan*, dated May 2007, including *Volume I: Final Programmatic Environmental Impact Report*, recommending a preferred restoration plan. The State of California's Legislative Analyst's Office released a report entitled *Restoring the Salton Sea*, dated January 24, 2008, analyzing the alternatives discussed in these reports.

As of December 31, 2008, Reclamation continued to provide technical information and expertise to the State of California, the Salton Sea Authority, and other interested stakeholders concerning potential restoration methods for the Salton Sea.

Colorado River Floodway Protection Act

The Colorado River Floodway Protection Act (Floodway Protection Act), Pub. L. No. 99-450, 100 Stat. 1129 (1986), originated from concerns over damages incurred primarily within the Colorado River flood plain during the high flows of the early 1980s. Congress found it essential to establish and maintain an effective floodway in order to accomplish the multiple purposes of the dams and other

control structures administered by the Secretary of the Interior (Secretary) on the Colorado River, and identified the need for coordinated Federal, State, and local action to limit floodway development.

The Floodway Protection Act established the Colorado River Floodway (Floodway) from Davis Dam to the Southerly International Boundary between the United States and the United Mexican States (Mexico), with the Floodway to be identified and depicted on maps submitted by the Secretary to Congress. The Floodway Protection Act directed the Secretary, in consultation with the seven Colorado River Basin States, the Colorado River Floodway Task Force (discussed below), and other interested parties, to complete a study of the tributary floodflows downstream of Davis Dam and to define the specific boundaries of the Floodway to accommodate either a one-in-one hundred year river flow, consisting of controlled releases and tributary inflow, or a flow of 40,000 cubic feet per second (cfs), whichever is greater. The Floodway Protection Act provides for a periodic review of the Floodway and allows for any required minor and technical modifications to the Floodway boundaries, after appropriate notice and consultations.

The Floodway Protection Act also established the Colorado River Floodway Task Force, which included representatives from other Federal agencies, Native American tribes and communities, States, counties, cities, water districts, and other organizations to advise the Secretary and Congress regarding:

- Means to restore and maintain the Floodway, including but not limited to, land transfers, relocations, or other changes in land management
- The necessity of additional Floodway management legislation at local, tribal, State, and Federal levels
- Development of specific design criteria for the creation of Floodway boundaries
- Review of mapping procedures for Floodway boundaries
- Whether compensation should be recommended in specific cases of hardship resulting from the impacts of the 1983 flood on property outside of the Floodway which could not reasonably have been foreseen
- The potential application of the Floodway on Indian lands and recommended legislation or regulations that might be needed to achieve the purposes of the Floodway, taking into consideration the special Federal status of Indian lands

In 1990, the Secretary filed maps with Congress depicting the Floodway. The final report of the Colorado River Floodway Task Force, entitled, *Final Report of*

the Secretary of the Interior to the Congress of the United States on the Colorado River Floodway Protection Act (October 1986; Public Law 99-450), was published in October 1992.

Coordination with United States Department of the Army, Corps of Engineers, for Flood Control Operations for Hoover Dam, Alamo Dam, and Painted Rock Dam

Hoover Dam

Flood control is one of the purposes of Hoover Dam and Lake Mead identified in the Boulder Canyon Project Act, Pub. L. No. 70-642, 45 Stat. 1057 (1928) (BCPA). The Act of December 22, 1944, Pub. L. No. 78-534, 58 Stat. 887 (1944) (Flood Control Act of 1944), directs the Secretary of War (now the Secretary of the Army) to prescribe regulations for the use of storage allocated for flood control or navigation for reservoirs constructed with Federal funds. These regulations were promulgated on October 13, 1978, and are set forth in 33 CFR § 208.11.

The regulations designate the Chief of Engineers of the United States Army Corps of Engineers (USACE) as the duly authorized representative of the Secretary of the Army, to exercise the authority set out in the Flood Control Act of 1944. In accordance with the regulations, the USACE published the *Water Control Manual for Flood Control, Hoover Dam and Lake Mead, Colorado River* (Water Control Manual) in December 1982. In order to ensure a clear understanding of the flood control regulations and of the information exchange required for the operation of Hoover Dam and Lake Mead, the Field Working Agreement between the Department of the Interior, Bureau of Reclamation, and the Department of the Army, Corps of Engineers, for Flood Control Operation of Hoover Dam and Lake Mead, Colorado River, Nevada-Arizona (Field Working Agreement) was signed by the Regional Director of the Bureau of Reclamation's (Reclamation) Lower Colorado Region and the Brigadier General, Division Engineer, of USACE's South Pacific Division in February 1984. The two parties agreed that the Field Working Agreement consummated the provisions of the Flood Control Act of 1944 and that Hoover Dam and Lake Mead would be operated in the interest of flood control in accordance with the water control plan detailed in the agreement.

Under the Field Working Agreement, the water control plan requires that:

- At all times, a minimum of 1,500,000 acre-feet of storage capacity be maintained at Lake Mead to provide storage space for the control of floods. If, however, the available flood control space diminishes at any

time to less than 1,500,000 acre-feet, minimum flood control releases are prescribed to reduce the water in storage and achieve the minimum flood control space.[2]

- From August 1 through January 1, releases from Lake Mead be scheduled so that available storage space in Lake Mead on the first day of each of those months is no less than the required space specified. The available flood control storage space in Lake Mead may be reduced to a minimum of 1,500,000 acre-feet provided that the additional space is available in specified upstream reservoirs.

- From January 1 through July 31, minimum releases from Lake Mead be made to attain the August 1 flood control space requirement. These minimum releases are determined by a specified computational method using inflow forecasts provided by the National Weather Service's Colorado Basin River Forecasting Center located in Salt Lake City, Utah (originally called the Colorado River Forecasting Service).

After the high flows in the early 1980s, flood control releases from Lake Mead were not necessary until the late 1990s. Flood control releases were made in 1997, 1998, and 1999.

The Field Working Agreement also recognized that "Hoover Dam is but one of three major flood control reservoirs in the Lower Colorado River Basin." The USACE operates Alamo Dam on the Bill Williams River and Painted Rock Dam on the Gila River, and the Field Working Agreement calls for the coordinated operation of the three reservoirs to achieve flood control objectives.

Alamo Dam

Alamo Dam is located in west-central Arizona on the Bill Williams River, approximately 39 miles upstream from the river's confluence with the Colorado River at Lake Havasu. Alamo Dam and Lake is a multiple-purpose facility with a total storage capacity of 1,361,247 acre-feet. Of the total storage capacity, approximately 76 percent (1,039,531 acre-feet) is allocated for flood control and spillway surcharge (the capacity of the reservoir above the spillway

[2]The top of Hoover Dam is 1232 feet above mean sea level (msl). The top of the spillway gates when closed is 1205.40 feet and when fully raised to slow the flow of water is 1221.40 feet. The minimum flood control space required by the Field Working Agreement results in a minimum flood control pool with a base set at elevation 1219.61 feet and a ceiling set at 1229 feet. The base at elevation 1219.61 feet falls between the elevation of the top of the spillway gates in a closed position and the elevation in a fully raised position, and the ceiling at elevation 1229 feet falls above the elevation of the gates in a raised position. Specifically, using the elevation-storage capacity relationship in place in 1982 and elevation 1229.0 feet msl as the maximum design flood pool level as defined in the Water Control Manual, elevation 1221.61 feet msl is specified in the Field Working Agreement as the elevation of the start of the minimum flood control space resulting in approximately 1,218,000 acre-feet of the minimum flood control space being above elevation 1221.40, the top of the raised spillway gates.

gates). Releases from Alamo Dam ultimately enter Lake Havasu, which is formed by Parker Dam on the lower Colorado River.

The USACE coordinates flood control operations of Alamo Dam with Reclamation's Lower Colorado Region. Releases from Alamo, Parker, Davis, and Hoover dams are coordinated to minimize damage due to high flows downstream of Parker Dam. Because flood control releases from Alamo Dam may contribute to meeting water deliveries to water users in the United States and to the United Mexican States (Mexico), releases from these dams are also coordinated to conserve the water released from Alamo Dam for use in the United States and Mexico.

Several agencies with interest in the Bill Williams River and the operation of Alamo Dam formed the Bill Williams River Corridor Steering Committee, a partnership seeking ways to manage reservoir releases to meet human needs and maintain the health and sustainability of the downstream ecosystem. As of December 31, 2008, participating agencies included Arizona Game and Fish, Arizona State Parks, Arizona Department of Water Resources (advisory role), City of Scottsdale, The Nature Conservancy, USACE, Bureau of Land Management, Fish and Wildlife Service, and Reclamation.

Painted Rock Dam

Painted Rock Dam is located on the Gila River approximately 115 miles upstream of the confluence with the Colorado River. Painted Rock Dam and Reservoir is a flood control facility with a total storage capacity of 2,491,700 acre-feet and is operated to provide protection for agricultural lands and communities downstream. Releases from Painted Rock Dam may reach the mainstream of the Colorado River upstream of Yuma, at the confluence of the Gila River and Colorado River.

The USACE coordinates flood control operations of Painted Rock Dam with Reclamation's Lower Colorado Region. Releases from Painted Rock, Imperial, Parker, Davis, and Hoover dams are coordinated to minimize damage due to high flows downstream of Imperial Dam when releases from Painted Rock Dam reach the mainstream of the Colorado River. Since flood control releases from Painted Rock Dam may contribute to meeting Mexico's scheduled water deliveries, releases from these dams are also coordinated to minimize flows in excess of Mexico's scheduled deliveries. See Chapter 4.

Synopses of Miscellaneous Reported Federal Court Decisions

The Federal courts entered numerous decisions during the period from 1979 through 2008 relating to the management of the Colorado River and the Federal facilities constructed to store or convey Colorado River water. The following

brief synopses of reported Federal court decisions are presented in chronological order simply to provide the reader with key elements of these judicial rulings. The descriptions are not an indication of the position of the United States Department of the Interior then or now on any particular issue.

Bryant v. *Yellen*

The Imperial Irrigation District (IID), situated in Imperial Valley, California, obtained a right to the use of Colorado River water under California State law, putting the right to use before June 25, 1929, the effective date of the Boulder Canyon Project Act, Pub. L. No. 70-642, 45 Stat. 1057 (1928) (BCPA) which authorized the construction of Hoover Dam. A right to Colorado River water obtained and put to use under State law as of June 25, 1929, is termed a "present perfected right" in the Decree of the United States Supreme Court in *Arizona* v. *California*, 376 U.S. 340, 341 (1963) and is often referred to as a "PPR." IID's present perfected right is expressly recognized by the Supreme Court in the Supplemental Decree entered in *Arizona* v. *California*, 439 U.S. 419, 429 (1979), and in the Consolidated Decree entered in *Arizona* v. *California*, 547 U.S. 150, 175 (2006).

Individual farmers within IID initially put the State law water right to use by diverting water from the Colorado River within the United States and conveying the water to the Imperial Valley through the Alamo Canal. The Alamo Canal originated within the United States, ran through Mexican territory, and then turned north into the United States and the Imperial Valley. Prior to the construction of Hoover Dam, both the uncontrolled flows of the Colorado River, and the delivery of water through a canal, which ran in part through a foreign country, presented challenges to the farmers within IID.

The Federal reclamation program was authorized by the Reclamation Act of 1902, Pub. L. No. 57-161, 32 Stat. 388 (1902). This act was later amended and supplemented on multiple occasions. One such instance was the Omnibus Adjustment Act of 1926, Pub. L. No. 69-284, 44 Stat. 636 (1926) (1926 Act). Section 46 of the 1926 Act prohibited the delivery of reclamation project water to any irrigable land held in private ownership by one owner in excess of 160 irrigable acres and required such owners to execute recordable contracts for the sale of excess lands before such excess lands could receive project water.[3] In 1928, the BCPA further supplemented Federal reclamation law, authorizing the construction of features now known as Hoover Dam, Imperial Dam, and the All-American Canal, a canal to be situated entirely within the United States through which water would be delivered to Imperial Valley.

In 1932, pursuant to the BCPA, the Secretary of the Interior (Secretary) entered into a contract with IID providing for the construction of Imperial Dam and the All-American Canal, the repayment of construction costs, and the delivery of

[3] Note that other provisions of reclamation law also address acreage limitations, including, for example, Section 5 of the 1902 Act.

Colorado River water to IID. The Secretary took the position in 1933 in a letter to IID that the lands under irrigation within IID at the time the BCPA was passed and having a vested water right under State law were not subject to a Federal 160-acre limitation. This remained the position of the Secretary until 1964.

In 1964, the United States sought to impose the excess lands provision of the 1926 Act on all privately owned lands in IID, whether or not the lands had been irrigated under State law prior to June 25, 1929, the effective date of the BCPA. After unsuccessful attempts to secure an amendment to the 1932 contract, the United States filed suit in 1967 in the Federal district court in southern California against IID, seeking a declaratory judgment that the excess acreage limitation of Section 46 of the 1926 Act applied to all private lands in IID that received Colorado River water through the All-American Canal. The State of California and certain landowners within IID were granted leave to intervene.

The district court ruled against the Federal government in a decision reported at *United States* v. *Imperial Irrigation District*, 322 F. Supp. 11 (S.D. Cal. 1971) in which the district court held that "the land limitation provisions of reclamation law have no application to privately owned lands lying within the Imperial Irrigation District" and held that IID was not bound to observe such limitations in the delivery of Colorado River water to any of the privately owned lands within the boundaries of IID. *Id.* at 27. The United States did not appeal the decision. A group of Imperial Valley residents, who had been given leave to participate as *amici curiae*[4], and who desired to purchase the excess lands which might become available if Section 46 were held applicable, were ultimately granted leave to intervene and to pursue an appeal of the district court's decision to the United States Court of Appeals for the Ninth Circuit.

In a separate but contemporaneous lawsuit, a group of Imperial Valley residents brought suit in 1969 against the United States in the Federal district court in southern California seeking to compel the United States to enforce the residency requirement of Section 5 of the Reclamation Act of 1902 in the deliveries of water to IID. That statutory provision provides that no right to the use of water for land in private ownership may be sold to a landowner "unless he be an actual bona fide resident on such land, or occupant thereof residing in the neighborhood of said land." The district court granted partial summary judgment against the Federal government in a decision reported at *Yellen* v. *Hickel*, 335 F. Supp. 200 (S.D. Cal. 1971). Various landowners in Imperial Valley were granted leave to intervene and, after a full trial, the district court again ruled against the United States in a decision reported at *Yellen* v. *Hickel*, 352 F. Supp. 1300 (S.D. Cal. 1972) in which the district court held:

[4] A Latin term meaning literally "friend of the court" in the singular or "friends of the court" in the plural. The term refers to a person affected by or interested in a pending case, but not a party to it, who is permitted to file pleadings or participate in oral argument.

> The requirement of residency of Section 5 of the Reclamation Act of June 17, 1902, is a prerequisite to the receipt of Boulder Canyon project water in the Imperial Valley and imposes a condition on the receipt of such water.

Id. at 1318. Both the United States and intervening landowners appealed to the Ninth Circuit.

The Ninth Circuit consolidated the two appeals and entered a decision reported at *United States v. Imperial Irrigation District*, 559 F.2d 509 (9th Cir. 1977). With respect to the district court decision in the residency case, the Ninth Circuit reversed the decision and held that the plaintiffs seeking to enforce the residency requirement of Section 5 of the Reclamation Act of 1902 lacked standing to bring the suit against the United States, vacated the judgment, and directed the district court to dismiss the complaint. With respect to the district court decision in the excess lands case, the Ninth Circuit reversed the decision and upheld the application of the excess lands provision of the 1926 Act to deliveries to IID.[5] Review of the Ninth Circuit's decision with respect to the excess lands provision of the 1926 Act was sought from and granted by the United States Supreme Court.

The Supreme Court, in a decision reported at *Bryant* v. *Yellen*, 447 U.S. 352 (1980), began its analysis of the excess lands issue by observing that:

> On June 25, 1929, when the Project Act became effective, the District was diverting, transporting, and delivering water to 424,145 acres of privately owned and very productive farmland in Imperial Valley. Under neither state law nor private irrigation arrangements in existence in Imperial Valley prior to 1929 was there any restriction on the number of acres that a single landholder could own and irrigate.

Id. at 356 (footnotes omitted). The Supreme Court then reviewed the provisions of the BCPA, in particular, Section 6, which requires that the works authorized by the BCPA be used, among other purposes, for the "satisfaction of present perfected rights in pursuance of Article VIII of said Colorado River compact [of 1922]." *Id.* at 359. The court also reviewed section 14 which provides that the BCPA should be deemed supplemental to the reclamation law "which said reclamation law shall govern the construction, operation, and management of the works herein authorized, except as otherwise herein provided." *Id.* at 359-360.

The Supreme Court recognized that the 1926 Act was a statute amendatory of, or supplemental to, the Reclamation Act of 1902 and that Section 46 of the 1926 Act "forbade delivery of reclamation project water to any irrigable land held in private

[5] The Ninth Circuit subsequently entered an order modifying this ruling to recognize the stipulation of the parties that the acreage limitation provisions of the reclamation law have no application to land owned by the State of California in its Imperial Water Fowl Management Area. *United States* v. *Imperial Irrigation District*, 595 F.2d 524 (9th Cir. 1979).

ownership by one owner in excess of 160 acres . . . ." *Id.* at 360 (footnote omitted). But, in considering the applicability of Section 46 to IID, the Supreme Court found that "the Court of Appeals failed to take adequate account of § 6 of the Project Act and its implementation in our opinion and decrees filed in the Arizona v California litigation." *Id.* at 370. In reaching this result, the Supreme Court looked to the 1963 decision in *Arizona* v. *California*:

> Arizona v California recognized that "one of the most significant limitations" on the Secretary's power under the Project Act was the requirement that he satisfy present perfected rights, a matter of great significance to those who had reduced their water rights to beneficial use prior to 1929.

Id. at 369 (citation omitted). The Supreme Court noted that:

> In the first place, it bears emphasizing that the § 6 perfected right is a water right originating under state law. In Arizona v California, we held that the Project Act vested in the Secretary the power to contract for project water deliveries independent of the direction of § 8 of the Reclamation Act to proceed in accordance with state law and of the admonition of § 18 of the Project Act not to interfere with state law. We nevertheless clearly recognized that § 6 of the Project Act, requiring satisfaction of present perfected rights, was an unavoidable limitation on the Secretary's power and that in providing for these rights the Secretary must take account of state law. In this respect, state law was not displaced by the Project Act and must be consulted in determining the content and characteristics of the water right that was adjudicated to the District by our decree.

Id. at 370-371 (citation and footnote omitted). The Supreme Court further noted that:

> Indeed, as a matter of state law, not only did the District's water right entitle it to deliver water to the farms in the District regardless of size, but also the right was equitably owned by the beneficiaries to whom the District was obligated to deliver water.

Id. at 371 (footnote omitted). The Supreme Court found that:

> These were important characteristics of the District's water right as of the effective date of the Project Act, and the question is whether Congress intended to effect serious changes in the nature of the water right by doing away with the District's privilege and duty to service farms regardless of their size. We are quite sure that Congress did not so intend and that to hold otherwise is to misunderstand the Project Act and the substantive meaning of "present perfected rights" as defined by this Court's decree.
>
> * * *

> Here, we are dealing with perfected rights protected by the Project Act; and because its water rights are to be interpreted in the light of state law, the District should now be as free of land limitations with respect to the land it was irrigating in 1929 as it was prior to the passage of the Project Act. To apply § 46 would go far toward emasculating the substance, under state law, of the water right decreed to the District, as well as substantially limiting its duties to, and the rights of, the farmer-beneficiaries in the District.
>
> * * *
>
> We consequently hold that the perfected water right decreed to the District may be exercised by it without regard to the land limitation provisions of § 46 of the 1926 Act or to any similar provisions of the reclamation laws.

Id. at 372-374 (footnotes omitted).

The Supreme Court declined to address the applicability of the excess lands provision of the 1926 Act to the approximately 14,000 acres of irrigated land within IID which were not under irrigation in 1929, noting that the record had yet to be developed with respect to these lands. *Id.* at 378-379. The judgment of the Ninth Circuit was reversed "with respect to those lands [within IID] that were irrigated on June 25, 1929 and with respect to which the District has been adjudicated to have a perfected water right as of that date." *Id.* at 379.

Uncompahgre Valley Water Users Association v. *Federal Energy Regulatory Commission*

In 1982, the Uncompahgre Water Users Association and Montrose Partners filed applications with the Federal Energy Regulatory Commission (FERC) for license to develop six small-scale hydroelectric power projects along the South Canal and the Montrose and Delta Canal of the Uncompahgre Valley Water System in the Uncompahgre Project, a Federal Reclamation project in Montrose County, Colorado. FERC dismissed the applications in 1984, and the petitioners appealed to the United States Court of Appeals for the Tenth Circuit in accordance with provisions of the Federal Power Act, Pub. L. No. 66-280, 41 Stat. 1067 (1920), as amended.

During the pendency of the appeal, the United States Department of the Interior, which had not been party to the proceedings before FERC, filed a letter on May 6, 1985, with FERC asserting that under the Act of June 22, 1938, Pub. L. No. 75-698, 52 Stat. 941 (1938 Act), the United States Department of the Interior has sole authority to develop the power potential on the Uncompahgre Project.

The 1938 Act states in pertinent part:

> That whenever a development of power is necessary for the irrigation of lands under the Uncompahgre Valley reclamation project, Colorado, or an opportunity is afforded for the development of power under said project, the Secretary of the Interior is authorized to enter into a contract

> for a period not exceeding forty years for the sale and development of any surplus power. The provisions of such contract shall be such as the said Secretary may deem to be equitable….

The question of whether the 1938 Act divested FERC's general licensing jurisdiction over hydropower development under the Federal Power Act with respect to the Uncompahgre Valley Reclamation Project was presented to the Tenth Circuit with the United States Department of the Interior participating as an *amicus curiae*[6]. In a decision reported at *Uncompahgre Valley Water Users Ass'n* v. *Federal Energy Regulatory Commission*, 785 F.2d 269 (10th Cir. 1986), the Tenth Circuit began its analysis with a review of pertinent Federal reclamation law:

> [T]he Act of 1938 is a Congressional enactment which covers a specific reclamation project established pursuant to the Reclamation Acts of 1902 and 1906. Indeed, the general language of the Act of June 22, 1938 is substantially similar to that of Section 5 of the amendatory Reclamation Act of April 16, 1906. Both of them authorize the Secretary of the Interior to engage in an effort to utilize the hydropower resources as an incidental activity on reclamation.

Id. at 273-274. In light of the substantial similarity between the 1938 Act and Section 5 of the Reclamation Act of April 16, 1906 (1906 Act), the Tenth Circuit further reviewed the language and legislative history of the 1906 Act and found:

> The language of Section 5 [of the 1906 Act] itself does not expressly authorize the Secretary of the Interior to undertake the construction of hydroelectric facilities in an irrigation project. The legislative history of the Act, however, demonstrates that Congress intended to confer upon the Secretary such authority in those situations where "the development of power is necessary and feasible for the pumping of water for irrigation" in the implementation of the reclamation projects.

Id. at 274 (footnote and citation omitted). The Tenth Circuit then reviewed the authorities bearing on FERC's jurisdiction, holding:

> However encompassing the general language of the Federal Power Act may be, it is equally clear that the 1938 Act is a specially-purposed enactment which contains provisions applicable only to a specific situation. When it is read in conjunction with the Act of 1906, the 1938 Act authorizes the Secretary of the Interior to contract with private entities for the development and sale of surplus water power when a development of such power facilities is essential for irrigation purposes at the Uncompahgre Valley Water System. Given the specific and circumscribed role in which the Secretary of the Interior may exercise to

[6] A Latin term meaning literally "friend of the court" in the singular or "friends of the court" in the plural. The term refers to a person affected by or interested in a pending case, but not a party to it, who is permitted to file pleadings or participate in oral argument.

> dispose of surplus water power, we believe that our conclusion is supported by the principle of construction that the more specific legislation covering the given subject-matter will take precedence "over the general language of the same or another statute which might otherwise prove controlling." A different conclusion in sustaining the position urged by FERC here would eviscerate the vitality of the Act of 1938, rendering it a meaningless statute. We hold that FERC does not have the licensing jurisdiction to entertain an application for the development of the hydropower facilities at the Uncompahgre Valley Reclamation Project. Such function lies within the jurisdiction of the Department of the Interior, as provided by the Act of June 22, 1938, 52 Stat. 941, when a development of such power facilities is necessary for irrigation purposes, or an opportunity is afforded for the development of power at this Reclamation Project.

Id. at 275-276 (footnote and citation omitted). The Tenth Circuit vacated FERC's orders and dismissed the appeal. The Town of Norwood, which had been granted leave to intervene, sought and was denied review of the Tenth Circuit decision by the United States Supreme Court at *Town of Norwood* v. *Uncompahgre Valley Water Users Ass'n*, 479 U.S. 829 (1986).

This decision of the Tenth Circuit is also discussed in Chapter 13.

Laughlin River Tours, Inc. v. *Bureau of Reclamation*

In 1987, Laughlin River Tours, Inc. (Laughlin) filed suit in the Federal district court in Nevada against the Bureau of Reclamation (Reclamation), challenging Reclamation's operation of Hoover and Davis Dams and seeking injunctive relief to compel Reclamation to release a minimum of 10,000 cubic feet per second (cfs) to meet the specific navigational requirements of the plaintiff. The district court ordered Laughlin to exhaust administrative remedies by applying to Reclamation's Regional Director for the Lower Colorado Region for an administrative determination in connection with the relief sought. Laughlin filed a request with the Regional Director for the release of 10,000 cfs, and the request was denied in an Administrative Decision dated September 19, 1988. The Administrative Decision was appealed to the Commissioner of Reclamation. The Commissioner denied the appeal in an Administrative Decision dated January 9, 1989. Laughlin then applied to the district court for review of the Administrative Decision, modifying the request for injunctive relief to seek the release of a minimum of 7,500 cfs.

Laughlin relied on Section 6 of the Boulder Canyon Project Act, Pub. L. No. 70-642, 45 Stat. 1057 (1928) (BCPA) which provides in pertinent part:

> That the dam and reservoir provided for by section 1 hereof shall be used: First, for river regulation, improvement of navigation, and flood control; second, for irrigation and domestic uses and satisfaction of present perfected rights in pursuance of Article VIII of said Colorado River compact; and third, for power.

Laughlin contended that Reclamation's fluctuating releases were intended to accommodate the demands of peaking power operations and not navigation.

In a decision reported at *Laughlin River Tours, Inc.* v. *Bureau of Reclamation*, 730 F. Supp. 1522 (D. Nev. 1990), the district court reviewed the language of Section 6 of the BCPA and observed that: "Under the express provisions of the Act, controlling floods, improving navigation, and regulating the flow are the first priorities. The generation of energy as a means of financial support for the project is a lower priority." *Id.* at 1524.

The district court then analyzed the significance of the prioritization of purposes in Section 6, holding that:

> [T]he Bureau does not misconstrue the provisions of the Act when it does not read these priorities as requiring the Secretary to maximize the first set of purposes before establishing criteria to meet the second and third priorities. In short, each of the priorities is interdependent on the others, and the Secretary has broad discretion in meeting the needs of the second and third priorities as long as the Secretary continues to use the dam to improve navigation and does not place an undue burden on navigation along the river.

Id. at 1524. The district court further found that:

> The construction of Hoover, Davis, and Parker Dams substantially improved navigation throughout the course of the lower Colorado River as is reflected in the extensive historical analysis of navigation on the lower Colorado River set forth in the administrative decision.

Id. at 1525. The district court declined to find that the release of water to raise the depth of the river at one specific point in the river in order to improve navigation is required by the BCPA. *Id.* at 1525.

Central Arizona Irrigation and Drainage District v. *Lujan*

On December 15, 1972, the Secretary of the Interior (Secretary) entered into a water service and repayment contract with the Central Arizona Water Conservation District (CAWCD) entitled Contract Between the United States and the Central Arizona Water Conservation District for Delivery of Water and Repayment of Costs of the Central Arizona Project (Master Repayment Contract). In 1983, the Secretary allocated water from the Central Arizona Project (CAP) and the Secretary and CAWCD thereafter entered into subcontracts with third parties for the use of CAP water. On December 1, 1988, the Secretary and CAWCD entered into Amendment No. 1 of the Master Repayment Contract to increase the ceiling for CAWCD's repayment obligation and for other purposes. The Master Repayment Contract, its Amendment No. 1, and the CAP water allocations are discussed in Chapter 5.

The Central Arizona Irrigation and Drainage District, the Maricopa-Stanfield Irrigation & Drainage District, and the New Magma Irrigation & Drainage District, each holding a CAP subcontract for non-Indian agricultural priority water under the Secretary's 1983 CAP allocations, filed suit in 1989 against the United States and CAWCD in Federal district court in Arizona. These irrigation districts challenged a provision in the Master Repayment Contract, as amended in 1988, which provided that CAP municipal and industrial (M&I) subcontractors could use their CAP M&I entitlements for ground water recharge to the extent the ground water recharge was consistent with Arizona law.

In a decision reported at *Central Arizona Irrigation and Drainage District* v. *Lujan*, 764 F. Supp. 582 (D. Ariz. 1991), the district court concluded that the irrigation districts lacked standing to assert the claim challenging the ground water recharge provision (*id.* at 586) but observed that, even if the plaintiffs had standing, summary judgment would still properly be granted, because "if M & I users are recharging their water allocations, they are *using* their water and there is simply none left over for agricultural users to take." *Id.* at 588 (emphasis in original).

Examining the interplay between Federal and State law, the district court noted:

> The allocation and preferences given to CAP water seems to be within the exclusive province of the Secretary of the Interior; once the preferences are already established, the possible *uses* of that water are governed by state law. Consequently, the Secretary of the Interior is authorized to allocate CAP water to M & I users. Then M & I users may use their water for any use authorized by Arizona law, including recharge.

Id. at 591 (emphasis in original).

The district court considered whether the inclusion of the recharge provision in the 1988 amendment to the Master Repayment Contract constituted a major Federal action under the National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (1970) (NEPA) and concluded it did not. The district court found:

> The only federal action in the addition of the recharge provision is the federal government allowing its M & I users to recharge their water allocations consistent with Arizona law. The federal government is not doing the actual recharge. The subcontractors are doing the recharge pursuant to Arizona law. Whether or not any of the users will actually recharge their allocations is now out of the hands of the federal government. … Recharge is accomplished once the water has been diverted from the water supply system. The federal government has nothing to do with the recharge activities of its subcontractors.

Id. at 596. The district court further noted that the Federal Government was neither funding nor supervising the recharge projects. *Id.* at 597. The district court found that, under these circumstances, NEPA did not require a supplemental environmental impact statement or an environmental assessment. *Id.*

Southwest Center for Biological Diversity* v. *United States Bureau of Reclamation

The Lake Mead delta is located at the north end of Lake Mead below the Grand Canyon in Mohave County, Arizona. Due to the relatively high flows of the Colorado River in the 1980s (see Chapter 2), this area was under water during routine operations of the lower Colorado River under the Law of the River until the late 1980s and early 1990s when, due to relatively dry years, the elevation level at Lake Mead dropped. With lower lake elevations, willow trees and other habitat grew in portions of the previously inundated area, and the southwestern willow flycatcher (Flycatcher) used this habitat for nesting purposes. In the mid-1990s, the elevation level of the water in Lake Mead began to rise, with an extended inundation of the Lake Mead delta in the late 1990s causing a loss of willows used by the Flycatcher for nesting. The Flycatcher was listed as an endangered species by the United States Fish and Wildlife Service (USFWS) in 1995 under the provisions of the Endangered Species Act of 1973, Pub. L. No. 93-205, 87 Stat. 884 (1973) (ESA).

The Bureau of Reclamation (Reclamation) is responsible for certain activities in connection with the management of the lower Colorado River, including operation of Hoover Dam which regulates the elevation of Lake Mead. In 1995, Reclamation initiated informal consultation with the USFWS to determine whether its discretionary operations on the lower Colorado River over the next 5 years "may affect" the Flycatcher and several other endangered species. Reclamation issued a biological assessment in August 1996 and initiated formal consultation with the USFWS.

In January 1997, the USFWS issued a Draft Biological Opinion (1997 Draft BO) which proposed a reasonable and prudent alternative (RPA) that would require Reclamation to use the full scope of its authority and discretion to immediately protect and maintain the Lake Mead delta habitat (by maintaining certain Lake Mead elevations). If Reclamation were unable to implement this provision, Reclamation would be required to defer use of conservation space above elevation 2136 at Roosevelt Lake, Arizona, in order to maintain Flycatcher habitat there until suitable Flycatcher habitat could be developed elsewhere.

In response to the 1997 Draft BO, Reclamation advised the USFWS, which administers the ESA on behalf of the Secretary of the Interior (Secretary), that under existing law Reclamation lacked the discretion to reduce the level of Lake Mead, except for these specific purposes: river regulation, improvement of navigation, and flood control; irrigation and domestic uses, including the satisfaction of present perfected rights; and power generation.

The USFWS issued a Final Biological Opinion (1997 Final BO) in April 1997, concluding that Reclamation's operation of the lower Colorado River would jeopardize the Flycatcher. The 1997 Final BO did not require the protection of the Lake Mead delta habitat (or maintenance of a specific Lake Mead elevation), nor did it require Reclamation to defer use of conservation space at Roosevelt Lake. The RPA in the 1997 Final BO did require that Reclamation take actions to avoid jeopardy, including the immediate initiation of a program for the protection and restoration of approximately 1,400 acres of currently unprotected riparian habitat. If insufficient occupied habitat could be identified, Reclamation was to procure and protect high-value unoccupied habitat. The RPA further required the continued development of a 50-year Multi-Species Conservation Program (MSCP), with the goal of benefitting multiple species. The Lower Colorado River MSCP is discussed in Chapter 3.

The Southwest Center for Biological Diversity brought suit against Reclamation and the Secretary in Federal district court in Arizona in 1997, contending that the Secretary had failed to comply with the requirements of the ESA with respect to the Flycatcher. In particular, plaintiffs contended that the USFWS failed to set forth an RPA which would avoid jeopardy to the Flycatcher population in the Lake Mead delta.

Plaintiff sought injunctive relief, asking that the district court order Reclamation to lower Lake Mead to approximately 1178 feet above mean sea level (msl) in order to preserve the Lake Mead delta habitat. Plaintiff later amended the complaint to include a claim under the Administrative Procedure Act, Pub. L. No. 79-404, 60 Stat. 237 (1946), challenging the RPA as arbitrary, capricious, and contrary to the ESA.

The district court dismissed the claims against Reclamation for lack of subject matter jurisdiction based on plaintiff's failure to comply with the notice requirements under the citizen suit provision of the ESA and denied the motion for preliminary injunction seeking to force Reclamation to lower the level of Lake Mead.

The seven Colorado River Basin States entered special appearances, expressly reserving their sovereign immunity under the Eleventh Amendment of the United States Constitution. The Basin States argued that they were necessary parties to the extent plaintiff sought to compel the release of water from Lake Mead to the detriment of the States' interests, that they could not be joined because of their Eleventh Amendment immunity, and, therefore, their absence would preclude judicial consideration of the drawdown of Lake Mead.

The district court, having dismissed the claims against Reclamation and denied the motion seeking to force Reclamation to lower Lake Mead, denied the Basin States' indispensable party motions as moot. The district court addressed the remaining claims against the Secretary relating to the Flycatcher population at

the Lake Mead delta in a decision reported at *Southwest Center for Biological Diversity* v. *United States Bureau of Reclamation*, 6 F. Supp. 2d 1119 (D. Ariz. 1997).

The district court noted that plaintiffs were contending that the USFWS failed to set forth an RPA which is likely to alleviate jeopardy to the Lake Mead Flycatcher population, that the RPA proposes "only studies and totally speculative off-site future habitat protection, with no changes to the operation of Lake Mead," and that "the RPA is arbitrary and capricious because it fails to protect the Lake Mead habitat." *Id.* at 1129 (citation omitted).

In analyzing plaintiff's claims, the district court observed that:

> Plaintiff cites no authority supporting that the Service must propose an RPA which alleviates jeopardy as to each and every location that an endangered species is found and upon which Federal action impinges rather than proposing an RPA which, while not removing jeopardy as to a particular location, is reasonably likely to alleviate jeopardy to the species generally. … The Court does not conclude that the RPA was arbitrary merely because it does not protect the Lake Mead Flycatcher population.

Id. at 1129 (footnote omitted). The district court further stated that:

> The Court is mindful of the Flycatcher's precarious status as documented in the Final BO. Nevertheless, the Service has concluded that the loss of the Lake Mead habitat, although significant, will not jeopardize the Flycatcher if Reclamation complies with the RPA and the incidental take statement. Nor does the Service conclude that the loss of the Lake Mead habitat requires the immediate substitution of replacement habitat to successfully alleviate jeopardy to the Flycatcher. The RPA is not rendered arbitrary and capricious merely because it does not contemplate the preservation of the Lake Mead habitat or the replacement of that habitat before [lower Colorado River] operations continue.

Id. at 1131. The district court reviewed language in the 1997 Final BO which described the type of habitat to be acquired and concluded that the USFWS had "sufficiently identified the type of replacement habitat to be acquired and that the Service did not abuse its discretion in concluding that 1,400 acres of habitat suitable for Flycatchers could be acquired." *Id.* at 1132.

Finally, the district court concluded:

> With respect to Reclamation conferring with the Service, the implementing regulations provides [sic] that "[t]he Service will utilize the expertise of the Federal agency … in identifying [reasonable and prudent] alternatives." 50 C.F.R. §402.14(g)(5). In response to the Draft BO, Reclamation advised the Service that it lacked discretion to reduce the level of Lake Mead under the Law of the River. (Final BO

> at 8-10). The Final BO reflects that the change from the RPA in the Draft BO to that in the Final BO was the result of a clarification of Reclamation's discretion to decrease the level of Lake Mead. Although Plaintiff argues that the Service failed to independently determine the extent of Reclamation's discretion, even if Reclamation has complete discretion in the management of Lake Mead, the relevant inquiry is whether the RPA in the Final BO alleviates jeopardy. Although the RPA in the Final BO does not require the preservation of the Delta habitat, that does not *per se* render it arbitrary or capricious and this Court has concluded that the RPA is not otherwise arbitrary and capricious.

Id. at 1134. The district court granted summary judgment in favor of the Secretary. *Id.* at 1134. The Southwest Center for Biological Diversity filed an appeal with the United States Court of Appeals for the Ninth Circuit.

The district court's order was affirmed in a decision reported at *Southwest Center for Biological Diversity* v. *United States Bureau of Reclamation*, 143 F.3d 515 (9th Cir. 1998), in which the Ninth Circuit held that:

> First of all, under the ESA, the Secretary was not required to pick the first reasonable alternative the FWS came up with in formulating the RPA. The Secretary was not even required to pick the best alternative or the one that would most effectively protect the Flycatcher from jeopardy. … The Secretary need only have adopted a final RPA which complied with the jeopardy standard and which could be implemented by the agency.
>
> Secondly, under the ESA, the Secretary was not required to explain why he chose one RPA over another, or to justify his decision based solely on apolitical factors. Accordingly, the district court had no reason to address the possible factors that might have motivated the Secretary in rejecting the draft RPA or to address the merits of Southwest's argument that the Secretary improperly rejected the draft RPA based on Reclamation's bare assertion that it lacked the discretion to lower the water level at Lake Mead.
>
> The district court correctly held that the only relevant question before it for review was whether the Secretary acted arbitrarily and capriciously or abused his discretion in adopting the final RPA. In answering this question, the court had only to determine if the final RPA met the standards and requirements of the ESA. The court was not in a position to determine if the draft RPA should have been adopted or if it would have afforded the Flycatcher better protection.

Id. at 522-523 (citation and footnotes omitted).

A decision that also addresses the application of the ESA to Colorado River operations, *Defenders of Wildlife* v. *Norton*, 257 F. Supp. 2d 53 (D.D.C. 2003), appeal dismissed, 74 F. App'x 63 (D. C. Cir. 2003), is discussed later in this chapter.

Maricopa-Stanfield Irrigation and Drainage District v. *United States*

The Maricopa-Stanfield Irrigation & Drainage District, the Central Arizona Irrigation and Drainage District, and the New Magma Irrigation & Drainage District, each holding a Central Arizona Project (CAP) subcontract for specified percentages of non-Indian agricultural priority water under the Secretary of the Interior's (Secretary) 1983 CAP allocations (see Chapter 5), filed suit against the United States in 1994 in Federal district court in Arizona.

The suit alleged that the irrigation districts had rights to certain water in excess of the needs of the Ak-Chin Indian Community's water rights settlement as a result of the Act of October 19, 1984, Public Law (Pub. L.) No. 98-530, 98 Stat. 2698 (1984) (1984 Ak-Chin Act) and the 1983 CAP allocations, and further alleged that Congress in the San Carlos Apache Tribe Water Rights Settlement Act of 1992, Pub. L. No. 102-575, Title XXXVII, 106 Stat. 4740 (1992) (SCAT Act), had taken the irrigation districts' rights to excess Ak-Chin water without just compensation. The Ak-Chin Indian Community water rights settlement, excess Ak-Chin water, and the San Carlos Apache Tribe water rights settlement are discussed in Chapter 10.

The district court ruled in favor of the irrigation districts on a motion for summary judgment. The United States appealed. The United States Court of Appeals for the Ninth Circuit reversed the district court in an opinion dated July 7, 1998, reported at *Maricopa-Stanfield Irrigation and Drainage District* v. *United States*, 147 F.3d 1168 (9th Cir. 1998), later withdrawn by order dated October 14, 1998. In a substantially rewritten substitute opinion, also dated October 14, 1998, reported at *Maricopa-Stanfield Irrigation and Drainage District* v. *United States*, 158 F.3d 428 (9th Cir. 1998), the Ninth Circuit again reversed the district court. In the October 1998 opinion, the Ninth Circuit observed that:

> The Boulder Canyon Project Act of 1928 parceled water among the Lower Basin states, allotting Arizona 2.8 million AF annually. This Act also gave the Secretary of the Interior broad administrative authority over the water, including the power to apportion water within the states. The Supreme Court confirmed the Lower Basin apportionment in 1963 and recognized the breadth of the Secretary's discretion to allocate Colorado River water.

Id. at 430-431 (citations and footnote omitted). The Ninth Circuit then reviewed the process under which CAP entitlements were obtained:

> The Secretary was left to devise and implement a system for determining how and to whom CAP water would be sold. The Secretary settled upon

> an allocation-contract mechanism for distributing CAP water. First, in 1983, the Secretary apportioned the right to purchase CAP water by way of general allocations to three priority pools, in descending order of priority: Indian tribes, municipal and industrial users, and non-Indian agricultural users. *See* CAP Water Allocations, [48] Fed. Reg. 12446-49 (1993 [sic]) (the "1983 notice"). Within those pools, the Secretary allotted CAP water to specific users. Second, after the CAP water was allocated, the allottees could purchase CAP water by way of subcontracts with the United States and the CAWCD. These contracts—and not the allocations themselves—determined how much water CAP allottees actually were entitled to receive.

Id. at 431 (footnotes omitted).

The Ninth Circuit then observed that the 1984 Ak-Chin Act identified sources of water that, in the aggregate, exceeded the Ak-Chin Indian Community's entitlement under the settlement and required the Secretary to allocate the excess Ak-Chin water "on an interim basis to the Central Arizona Project." *Id.* at 432. The Ninth Circuit found that the excess Ak-Chin water had remained in the CAP for 8 years and that, in 1992 in the SCAT Act, Congress provided for the excess Ak-Chin water to be reallocated to the San Carlos Apache Tribe as part of the Tribe's water settlement. *Id.* at 432.

The Ninth Circuit considered the irrigation districts' allegation that "by reallocating the excess Ak-Chin water to the CAP, the 1984 Ak-Chin Act automatically reallocated that water to the non-Indian agricultural pool, which water the Districts had purchased under their 1984 subcontracts" (*id.* at 434) and the districts' allegation that "Congress abrogated their subcontracts with the CAWCD by directing the Secretary to reallocate the excess Ak-Chin water to the San Carlos Apache Tribe in the SCAT Act" (*id.* at 435).

The Ninth Circuit reviewed the 1983 allocation, the irrigation districts' 1983 CAP subcontracts, and the 1984 Ak-Chin Act and determined that the 1984 statute's requirement that the Secretary allocate the excess Ak-Chin water to the CAP did not, given the lack of additional specificity, support an interpretation that the water was to be made available to the irrigation districts:

> Neither Congress nor the Secretary ever equated the CAP with one priority pool or a particular user. Whenever Congress has wished to allot water to a specific CAP priority pool or CAP user, it has used clear language to do so. Congress's failure to designate a specific user or user class convinces us that, even if the excess Ak-Chin water generally was available to the [irrigation] Districts before 1992, the Ak-Chin Settlement Act conferred upon them no protectable property interest.

Id. at 436 (footnote and citation omitted). The Ninth Circuit reviewed the statutory objectives of the CAP and the policies underlying the 1983 allocation, noting that "[a]nticipating urban growth and a concomitant decline in agriculture

in Arizona, the Secretary gave cities and tribes more secure water entitlements than those possessed by the non-Indian agricultural users" (*id.* at 436-437) and finding that:

> These [CAP] purposes are best served by cycling CAP water allocations rights through the whole priority structure rather than by vesting them at the lowest level of that structure, particularly because the non-Indian agricultural pool historically has underutilized its allotments, and has been able to pay less than the other pools for the water that it has utilized.

Id. at 437 (citation omitted). The Ninth Circuit held that: "The Districts' interpretation of the Ak-Chin Settlement Act as giving them a permanent priority entitlement to the excess Ak-Chin water is simply untenable in light of these [CAP] objectives." *Id.* at 437.

The Ninth Circuit further held that nothing in the 1984 Ak-Chin Act prevented the Secretary from reallocating CAP water from the CAP to a particular CAP user or demonstrated that Congress relinquished its own prerogative to order a reallocation:

> [E]ven if the Districts somehow did acquire a provisional right to the excess Ak-Chin water allotment, they have not demonstrated that Congress intended for that right to be irrevocable. Congress did not foreclose the Secretary's discretion, and it did not relinquish its own legislative prerogative. For these reasons, we conclude that the Districts have demonstrated no protected property interest in the excess Ak-Chin water allocation.

Id. at 439.

The irrigation districts sought and were denied review of the Ninth Circuit decision by the United States Supreme Court. *Maricopa-Stanfield Irrigation and Drainage District* v. *United States*, 526 U.S. 1130 (1999).

Central Arizona Water Conservation District v. *United States*

The decision of the Federal district court in Arizona reported at *Central Arizona Water Conservation District* v. *United States,* 32 F. Supp. 2d 1117 (D. Ariz. 1998), is discussed in Chapter 5.

Mohave Valley Irrigation & Drainage District v. *Norton*

The Mohave Valley Irrigation & Drainage District (MVIDD) entered into a water delivery contract with the Secretary of the Interior (Secretary) in 1968 for the delivery of up to 51,000 acre-feet per year of Colorado River water, later reduced in 1979 in accordance with the terms of the contract to a 41,000 acre-feet per year entitlement. The Bureau of Reclamation interpreted the language of the 1968 contract to mean the 41,000 acre-feet entitlement was inclusive of water pumped within MVIDD by holders of present perfected rights (PPRs) to Colorado River

water. MVIDD interpreted the contract to mean the 41,000 acre-feet entitlement was exclusive of the PPRs. MVIDD brought suit against the Secretary in 1995 in the Federal district court in Arizona. The district court ruled in favor of the Secretary and MVIDD appealed to the United States Court of Appeals for the Ninth Circuit.

In a decision reported at *Mohave Valley Irrigation & Drainage District* v. *Norton*, 244 F.3d 1164 (9th Cir. 2001), the Ninth Circuit noted that the United States Supreme Court in *Arizona* v. *California*, 376 U.S. 340, 341 (1964) had defined present perfected rights as follows:

> [Any water right] acquired in accordance with state law, which right has been exercised by the actual diversion of a specific quantity of water that has been applied to a defined area of land or to definite municipal or industrial works …[as well as] rights created by the reservation of mainstream water for the use of federal establishments under federal law whether or not the water has been applied to beneficial use.

Id. at 1165. The Ninth Circuit noted that: "The [District's 1968] contract does not explicitly mention the impact of water deliveries to holders of PPRs located within the District's boundaries." *Id.* The Ninth Circuit considered "whether a reasonable person would find the contract's terms to be ambiguous" (*id.* at 1165-1166) and found that "[o]n its face, the contract language supports Interior's interpretation" (*id.* at 1166). In support of this conclusion, the Ninth Circuit noted that the 1968 water delivery contract "broadly defines the District" as follows:

> [T]hat area of land in Mohave County, formally included within the Mohave Valley Irrigation and Drainage District … [except] those lands that are within the external boundaries of the District but which have been excluded from the District pursuant to resolution or any order of a court of proper jurisdiction….

Id. The Ninth Circuit further noted that:

> There is no judicial decision excluding the areas belonging to holders of PPRs from the scope of the definition of water delivered to the District, nor does the contract language itself make any exceptions for holders of PPRs.

Id. The Ninth Circuit then noted that the 1968 water delivery contract defined "water delivered" to be:

> [A]ll water pumped by the District or by any other person, firm, or Corporation, from wells located within or outside the District for use within the District or from wells located within the District for use outside the District….

Id. The Ninth Circuit observed that "[t]he breadth of the definitions of 'water delivered' and 'District' lends support to the view that the contract's allocation of water makes no exception for water delivered to PPR holders." *Id.* The Ninth Circuit affirmed the district court's decision, and MVIDD sought and was denied review by the United States Supreme Court. *Mohave Valley Irrigation and Drainage District* v. *Norton*, 534 U.S. 1041 (2001).

Defenders of Wildlife v. *Norton*

As discussed in the synopsis of *Southwest Center for Biological Diversity* v. *United States Bureau of Reclamation* earlier in this chapter, in 1995, the Bureau of Reclamation (Reclamation) began to evaluate whether its routine, ongoing discretionary operations "may affect" listed species and designated critical habitats along the lower Colorado River. Reclamation initiated informal consultation with the United States Fish and Wildlife Service (USFWS) with respect to these operations and initiated negotiations with the States of Arizona, California, and Nevada and other interested parties over a comprehensive, long-term Multi-Species Conservation Program (MSCP). The Lower Colorado River MSCP is discussed in Chapter 3.

Reclamation, in a March 1996 Draft Biological Assessment (Draft BA) developed under the Endangered Species Act of 1973, Pub. L. No. 93-205, 87 Stat. 884 (1973) (ESA), initially defined the action area for its lower Colorado River operations as extending from the full pool elevation level of Lake Mead to the Southerly International Border with the United Mexican States (Mexico), analyzing the effect of its operations on protected species within that area for the next 5 years or until the adoption of an MSCP, whichever occurred first.

The USFWS responded to the Draft BA by directing Reclamation to analyze impacts on Mexican populations of the yuma clapper rail, the southwestern willow flycatcher (Flycatcher), and the desert pupfish and to seek consultation with the National Marine Fisheries Service (NMFS) with respect to two marine species in the Gulf of California, the totoaba bass and vaquita harbor porpoise because, from the perspective of the USFWS, these species were found within the project area or within the area of effects from the action under consultation.

The August 1996 Final Biological Assessment (Final BA) analyzed the effects of Reclamation's operations on species in both the United States and parts of Mexico. Reclamation described its discretionary operations and its nondiscretionary operations in the Final BA. Reclamation found that its discretionary operations would have no effect on the vaquita harbor porpoise and desert pupfish, and that the yuma clapper rail was not likely to be adversely affected. Among the species that the Final BA concluded might be affected by discretionary operations were the totoaba bass and the Flycatcher, the former of which is classified as endemic to Mexico and the latter classified as migrant. Reclamation requested formal consultation for the Flycatcher. The Final BA did not request consultation for the totoaba bass, concluding that no formal

consultation was required in light of Reclamation's lack of discretion over water deliveries to or within Mexico such that Reclamation had virtually no ability to reverse conditions in the Colorado River delta. The NMFS concurred.

In January 1997, the USFWS issued a draft biological opinion and, in April 1997, issued a Final Biological Opinion (1997 Final BO) with respect to the nonmarine species, concluding that Reclamation's operations over the next 5 years could jeopardize species within the United States but not in Mexico. The 1997 Final BO concluded that the operations could jeopardize the Flycatcher, but not the yuma clapper rail, and that the risk to the Flycatcher was not in Mexico but in the United States relating to Reclamation's plans to allow Lake Mead to rise to predrought lake levels, inundating Lake Mead Flycatcher habitat which had developed during the drought (see discussion of the effect of varying Lake Mead elevations on flycatcher habitat earlier in this chapter under *Southwest Center for Biological Diversity* v. *United States Bureau of Reclamation*).

The 1997 Final BO was challenged in Federal district court in Arizona with respect to the reasonable and prudent alternative (RPA) relating to the Flycatcher population in the Lake Mead delta. The RPA was upheld in *Southwest Center for Biological Diversity* v. *United States Bureau of Reclamation*, 6 F. Supp. 2d 1119 (D. Ariz. 1997), *aff'd*, 143 F.3d 515 (9th Cir. 1998), discussed earlier in this chapter.

In June 2000, four American and four Mexican environmental groups brought suit against Reclamation, the USFWS, and the NMFS in Federal district court in the District of Columbia challenging the 1997 Final BO on the basis that a long-term recovery plan for the Flycatcher had not been adopted and on the basis that these Federal agencies had failed to comply with the consultation requirements of the ESA with regard to effects to ESA-protected species located in the Colorado River delta in Mexico. The Colorado River delta is located in Mexico at the mouth of the Colorado River where the river flows into the Gulf of Mexico. Several entities sought and were denied leave to intervene as of right. Many entities filed briefs in the case as *amici curiae*[7].

During the pendency of the proceedings before the United States District Court, the 5-year period of coverage under the 1997 consultation expired. In May 2002, Reclamation informed the court it had reinitiated consultation with the USFWS concerning its lower Colorado River operations. The consultation resulted in a Supplemental Biological Assessment (Supplemental BA), which incorporated the same distinctions between discretionary and nondiscretionary activities as the Final BA, and further resulted in a Supplemental Biological Opinion (Supplemental BO). The Supplemental BO concluded that Reclamation's operations were not likely to jeopardize the continued existence of the Flycatcher

[7] A Latin term meaning literally "friend of the court" in the singular or "friends of the court" in the plural. The term refers to a person affected by or interested in a pending case, but not a party to it, who is permitted to file pleadings or participate in oral argument.

or yuma clapper rail. The District Court referred to this process as the "reinitiated consultation" in its 2003 decision described below.

In the 2003 decision reported at *Defenders of Wildlife* v. *Norton*, 257 F. Supp. 2d 53 (D.D.C. 2003), the district court began by noting:

> During the pendency of this suit, defendants completed a recovery plan for the Southwestern Willow Flycatcher, mooting plaintiffs' claim that the defendants had failed to issue the recovery plan and leaving just one claim -- that the defendants failed to satisfy the consultation requirements of the ESA with regard to protected species in the Colorado River Delta in Mexico.

Id. at 57. In its analysis of the remaining claim, the district court began with a review of the Law of the River, holding that:

> The Bureau of Reclamation, which built and/or operates all of the American dams in the lower basin and serves as custodian of the river for the Secretary of the Interior, is responsible for delivering water to the lower basin states and to Mexico in accordance with the Compact, the Treaty, the Supreme Court injunction, and contracts with recipients. After all those obligations are fulfilled, little if any water actually reaches the Gulf of California in a normal year. River flows generally reach the delta only in years of flooding, although, in the 1980's, even those sporadic amounts helped to restore significant habitat.

Id. at 58. The district court then focused on the extent of Reclamation's discretionary control over river flows in light of the Law of the River, observing that:

> [B]oth the reinitiated consultation and the previous one in 1995-1997 defined the action area for analysis as Lake Mead to the Southerly International Border and examined the effects on species primarily in the parts of Mexico that received river flows subject to Reclamation's discretionary control. Thus, the issue presented here is whether Reclamation's duty of consultation under the ESA extends to operations affecting extra-territorial species in parts of the delta that are downstream from river flows over which Reclamation has no discretionary control.

Id. at 61-62. In considering whether Reclamation's duty of consultation extended to operations affecting species in the Colorado River delta in Mexico, the district court reviewed numerous authorities bearing on the issue, concluding that:

> The record contains no suggestion of a way, with or without consultation, for Reclamation to ensure that more water reaches the listed species in the delta. The formulas established by the Law of the River strictly limit Reclamation's authority to release additional waters to Mexico, and Section 7(a)(2) of the ESA does not loosen those limitations or expand Reclamation's authority.

Id. at 67-68. The district court held that: "Reclamation does not have the discretion to manipulate water delivery in the United States in order to create excess releases for the delta." *Id.* at 68.

The district court concluded with this observation:

> The parties have not addressed the question of deference to the agency's interpretation of the Law of the River, but at the very least, *Skidmore* deference should be accorded to Reclamation's interpretation of its duties and its scope of discretion in carrying out those duties under the Law of the River. Acknowledging such deference in this case may give rise to a concern that agencies will increasingly rely on 50 C.F.R. § 402.03 to avoid ESA consultation duties, but it seems unlikely that any case will present facts that more clearly make any agency's actions nondiscretionary than this one: a Supreme Court injunction, an international treaty, federal statutes, and contracts between the government and water users that account for every acre foot of lower Colorado River water.

Id. at 69 (citations omitted).

Entities which had sought and been denied leave to intervene as of right in the district court proceedings filed an appeal from the order denying their motion to intervene. The United States Court of Appeals for the District of Columbia Circuit dismissed the appeal as moot when the plaintiff environmental groups did not appeal the district court's decision on the merits. *Defenders of Wildlife* v. *Norton*, 74 F. App'x 63 (D. C. Cir. 2003).

Consejo de Desarrollo Economico de Mexicali, AC v. *United States*

The All-American Canal (AAC), authorized under the Boulder Canyon Project Act, Pub. L. No. 70-642, 45 Stat. 1057 (1928), delivers Colorado River water to the Imperial Valley in California. The Act of November 17, 1988, Pub. L. No. 100-675, 102 Stat. 4000 (1988) (1988 Act) authorized the lining of portions of the AAC to reduce seepage. The AAC Lining Project is discussed in Chapter 5.

The Bureau of Reclamation (Reclamation) conducted environmental studies and, in accordance with the National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852 (1970) (NEPA), in 1994, issued a Final Environmental Impact Statement (FEIS) relating to the proposed lining. Reclamation approved the Record of Decision authorizing the AAC Lining Project on July 29, 1994. In 1999, Reclamation conducted a reexamination of the FEIS and determined that no new significant information changed the initial analysis, so that a Supplemental Environmental Impact Statement (SEIS) was not required. Contracts were entered into in 2003 among the United States, California water agencies, and

Indian Bands relating to the financing and construction of the AAC Lining Project and the allocation of the conserved water. See discussion of California agreements in Chapter 6.

Reclamation also undertook compliance activities under the Endangered Species Act of 1973, Pub. L. No. 93-205, 87 Stat. 884 (1973) (ESA). In 1996, Reclamation obtained a conference opinion from the United States Fish and Wildlife Service (USFWS) regarding the effects of the AAC Lining Project on the Peirson's milk-vetch. In 2004, Reclamation requested that the USFWS confirm the 1996 conference opinion as a biological opinion.

In July 2005, suit was filed against the United States, the Secretary of the Interior and the Commissioner of Reclamation in Federal district court in Nevada asserting multiple claims. The plaintiffs in this lawsuit were: the Consejo de Desarrollo Economico de Mexicali, A.C. (CDEM), a nonprofit organization of business and civic leaders in the Mexicali Valley, Baja California, Mexico; the Citizens United for Resources and the Environment (CURE), a California nonprofit organization; and the Desert Citizens Against Pollution, a California nonprofit organization. Additional parties, including Upper and Lower Basin States, participated in the litigation as intervenors and as *amici curiae*[8]. The suit alleged that recharge from the AAC was necessary to sustain the Mexicali Aquifer which underlies the Imperial Valley in California and the Mexicali Valley in the United Mexican States (Mexico). Plaintiffs sought to enjoin the United States from lining portions of the AAC in Imperial Valley, California.

Plaintiffs alleged: (1) that water users in Mexico acquired rights to AAC seepage through various prescriptive theories, (2) that the AAC seepage is not a part of Mexico's Colorado River water allotment under the 1944 Mexican Water Treaty; (3) that Reclamation's approval of the AAC Lining Project constituted an unconstitutional deprivation of rights without due process of law; and (4) that Reclamation's approval of the AAC Lining Project violated environmental statutes of the United States. With respect to ESA, the plaintiffs contended that Reclamation failed to properly evaluate the effects of the canal lining project on listed species, failed to reinitiate formal consultation because of new information that lining the canal will affect listed species and habitats, and failed to authorize a take of endangered fish and wildlife species within the United States. With respect to NEPA, the plaintiffs contended that Reclamation violated NEPA because new information and circumstances concerning the lining project's environmental impacts require Reclamation to prepare a supplement to the 1994 FEIS.

In November 2005, Reclamation issued a Biological Analysis for the All-American Canal Lining Project, Potential Species Impact in the Republic of

[8] A Latin term meaning literally "friend of the court" in the singular or "friends of the court" in the plural. The term refers to a person affected by or interested in a pending case, but not a party to it, who is permitted to file pleadings or participate in oral argument.

Mexico. By memorandum dated January 10, 2006, the USFWS confirmed the 1996 conference opinion regarding the effects of the AAC Lining Project on the Peirson's milk-vetch as a biological opinion, on the basis that no significant new information or changes existed that would alter the prior opinion. By memorandum to Reclamation dated January 11, 2006, after review of the November 2005 Biological Analysis, the USFWS concluded that Reclamation was not required to undergo ESA Section 7 consultation with the USFWS regarding transboundary effects (that is, effects to ESA-listed species beyond the border of the United States). On January 12, 2006, Reclamation issued a Supplemental Information Report (SIR) regarding the lining project. Reclamation concluded that no significant new circumstances or information relevant to environmental concerns and bearing on the lining project or its impacts had occurred since completion of the 1994 FEIS.

The district court thereafter disposed of the claims alleged in the *Consejo de Desarrollo Economico de Mexicali AC* litigation in three decisions issued February 8, June 23, and July 3, 2006.

In the February 8, 2006, decision reported at *Consejo de Desarrollo Economico de Mexicali, AC* v. *United States*, 417 F. Supp. 2d 1176 (D. Nev. 2006), the district court first addressed whether the plaintiffs had standing to meet the legal requirements for subject matter jurisdiction to enable the court to consider their claims against the United States. With respect to CDEM's due process claims under the United States Constitution, the district court ruled that CDEM did not have standing because "Fifth Amendment protections do not extend to aliens outside of United States territory." *Id.* at 1183. In particular, the court held:

> Because the source of Counts 1 through 4 is the Fifth Amendment of the United States Constitution and CDEM and its members reside outside the territory of the United States, the Court does not have jurisdiction over those claims. The Fifth Amendment does not grant persons in CDEM and its members' position a right to judicial relief as they are aliens outside the United States sovereign territory. Therefore, CDEM lacks standing to assert Counts 1 through 4.

Id. at 1184. With respect to CDEM's claims to Colorado River seepage water, the district court held that CDEM lacked standing to enforce such claims because rights to the seepage water from the AAC are governed by the Treaty between the United States of America and Mexico, Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande, signed on February 3, 1944, 59 Stat. 1219 (Mexican Water Treaty), and because the court lacked power to enforce the claims of individuals under an international treaty.

With respect to whether the Mexican Water Treaty governed Colorado River seepage water from the AAC, the district court held that:

> The Treaty's allotment to Mexico of water from the Colorado River includes sub-surface waters derived from the Colorado River. Because the Colorado River feeds the All-American Canal, the Canal is part of the Colorado River System. Thus, the Treaty governs the Defendants' obligation vís-a-vís seepage water from the All-American Canal.

Id. at 1184 (citation to record omitted). The district court held that CDEM as an individual entity did not have standing in that "the 1944 Water Treaty allocates all water derived from the Colorado River and the Court cannot enforce individual rights under the Treaty because individuals do not have standing to bring suit under the Treaty." *Id.* at 1183. The district court further held that because "[o]nly parties to a treaty may seek enforcement of the treaty and may do so only through diplomatic means" the district court lacked jurisdiction to hear the claims. *Id.* at 1184.

The district court further held that neither CDEM nor CURE had either the organizational standing or the associational standing required under Federal law to pursue claims under the ESA, under the Migratory Bird Treaty Act, Pub. L. No. 65-186, 40 Stat. 755 (1918), or under the 1988 Act authorizing the lining of the canal. *Id.* at 1186-1188.

The district court dismissed the claims associated with the Fifth Amendment, the Mexican Water Treaty, the ESA, the Migratory Bird Treaty Act, and the 1988 Act for lack of standing. Plaintiffs filed an amended complaint.

In the June 23, 2006, decision reported at *Consejo de Desarrollo Economico de Mexicali, AC* v. *United States*, 438 F. Supp. 2d 1194 (D. Nev. 2006), the district court dismissed the claims set forth in the amended complaint with the exception of those claims in which all plaintiffs asserted violations of NEPA for failure to issue an SEIS and plaintiff CURE asserted a violation of the ESA.

In the July 3, 2006, decision reported at *Consejo de Desarrollo Economico de Mexicali, AC* v. *United States*, 438 F. Supp. 2d 1207 (D. Nev. 2006), the district court disposed of procedural and evidentiary matters and then addressed the remaining claims. With respect to NEPA, the district court addressed the contentions that the Federal agencies violated NEPA by failing to issue a SEIS in light of alleged significant new information, circumstances, and substantial changes, holding:

> Based on the facts here and absent a clear statutory intent to the contrary, NEPA does not apply to the All-American Canal lining project's environmental impacts in Mexico. Although the agency action of constructing and lining a new section of the All-American Canal will occur within the United States, the projects' effects on the Andrade Mesa Wetlands, the Mexican Yuma Clapper Rail population, the socio-economic situation in Mexico, groundwater in the Mexicali Valley, seepage flow to the New River in Mexico, and air quality in Mexico will occur outside United States territory in Mexico, a sovereign nation over

> which Congress lacks legislative control. Nor will the loss of seepage water from the canal, result in impacts within the United States directly traceable to agency action, as discussed below. Additionally, Reclamation assessed impacts in Mexico and so Reclamation has not failed completely to undertake an environmental assessment. Accordingly, NEPA does not require Reclamation to issue a SEIS examining the All-American Canal project's impacts in Mexico.

Id. at 1235-1236 (citation to administrative record and footnote omitted).

With respect to transboundary and domestic impacts, the district court further held:

> That Mexico may choose to divert its share of Colorado River water to areas other than the Andrade Mesa Wetlands or the Mexicali Aquifer, or that Mexico may choose to accelerate the rate at which it pumps water from the aquifer, is outside of Defendants' control. Moreover, Defendants do not have any authority to force Mexico to implement mitigation measures that would alleviate the increased salinity, decreased groundwater, or loss of wetlands in Mexico that might occur because of the lining project. Therefore, any impacts the loss of the seepage water may have on Mexico and resulting impacts in the United States are not within agency control but are within the control of Mexico pursuant to decisions it makes regarding its own water resources.

Id. at 1238. The district court then held that "because the impacts in Mexico are beyond agency control and their impacts within the United States are too speculative, NEPA's 'rule of reason' does not require Reclamation to prepare a SEIS regarding those impacts." *Id.*

With respect to domestic impacts, the district court reviewed the administrative record to determine whether Reclamation's conclusion in the 2006 SIR that there were no significant new circumstances or information bearing on the AAC Lining Project was arbitrary or capricious. The district court concluded that "Reclamation did not act arbitrarily or capriciously when it concluded no significant new information or circumstances existed concerning the project's Salton Sea impacts" (*id.* at 1241), that "Reclamation's conclusion that the substitution of escape-ladders for the escape ridges is not a substantial change impacting human safety is not arbitrary or capricious" (*id.* at 1243), and that:

> Reclamation articulated a rational conclusion that the [reclassification] of the Imperial Valley [from a moderate to serious nonattainment area for certain air particulates] was not a significant new circumstance or information related to environmental concerns.

Id. at 1245.

Addressing plaintiff CURE's ESA claims, the district court examined statutory and regulatory provisions and the decisions of other courts to determine whether, in the present case, Congress intended the ESA's formal consultation requirement to apply extraterritorially and held that:

> Plaintiff CURE asserts the lining project will threaten the Yuma Clapper Rail because lining the canal will divert seepage water from the Andrade Mesa Wetlands. The impact to the listed species or its habitat will occur outside of United States territory. Furthermore, for the same reasons Reclamation lacks control over extraterritorial impacts and their rebounding effects in the United States under NEPA, Reclamation and FWS lack control over impacts to the Andrade Mesa Wetlands and the Yuma Clapper Rail under the ESA. The situation here is similar to that in *Defenders of Wildlife v. Norton*, where the district court held section 7(a) did not require consultation because "[t]he record contain[ed] no suggestion of a way, with or without consultation, for Reclamation to ensure that more water reaches the listed species in the delta. The formulas established by the Law of the River strictly limit Reclamation's authority to release additional waters to Mexico, and Section 7(a)(2) of the ESA does not loosen those restrictions or expand Reclamation's authority." As discussed previously, the 1944 Water Treaty limits Mexico's share of Colorado River water. Therefore, even with consultation, Reclamation has no authority to ensure more water reaches the Andrade Mesa Wetlands and the Yuma Clapper Rail. Accordingly, Section 7(a) of the ESA, 16 U.S.C. § 1536(a), does not require Reclamation to consult with the FWS regarding the lining project's impacts on listed species and their habitat located outside of the United States, including the Yuma Clapper Rail and the Andrade Mesa Wetlands.

Id. at 1247 (citation omitted).

Plaintiffs appealed the district court's decisions to the United States Court of Appeals for the Ninth Circuit and obtained an injunction from the Ninth Circuit pending appeal. After the merits of the appeal were briefed and argued, Congress enacted the Tax Relief and Health Care Act of 2006, Pub. L. No. 109-432, Subtitle J – All American Canal Projects, 120 Stat. 3046 (2006) (2006 Act). Section 395 of the 2006 Act states, in pertinent part, that:

> Notwithstanding any other provision of law, upon the date of enactment of this Act, the Secretary shall, without delay, carry out the All American Canal Lining Project identified – (1) as the preferred alternative in the record of decision for that project, dated July 29, 1994; and (2) in the allocation agreement allocating water from the All American Canal Lining Project, entered into as of October 10 2003.

Section 397 of the 2006 Act states that:

> The Treaty between the United States of America and Mexico relating to the utilization of waters of the Colorado and Tijuana Rivers and of the Rio Grande, and supplementary protocol signed November 14, 1944, signed at Washington February 3, 1944 (59 Stat. 1219) is the exclusive authority for identifying, considering, analyzing, or addressing impacts occurring outside the boundary of the United States of works constructed, acquired, or used within the territorial limits of the United States.

Both Sections 395 and 397 are appended to this volume.

In a decision reported at *Consejo de Desarrollo Economico de Mexicali, A.C.* v. *United States*, 482 F.3d 1157 (2007), the Ninth Circuit analyzed the language of Sections 395 and 397 and considered plaintiff's objections to the application of these sections to the instant case, concluding that "the 2006 Act renders the claims based on past violations of NEPA, the Endangered Species Act, the Migratory Bird Treaty Act, and the Settlement Act [1988 Act] moot." *Id.* at 1174.

This litigation is further discussed in Chapter 5.

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CHAPTER 13: POWER

Introduction

Prior to 1977, the Bureau of Reclamation (Reclamation) managed the generation of power at Federal Reclamation projects to provide power for project purposes and marketed surplus power excess to project requirements. This chapter begins with a discussion of the transfer of the power marketing function from Reclamation to the Department of Energy's (DOE) Western Area Power Administration (Western) after the creation of the Department of Energy in 1977. This chapter then addresses power-related matters of interest throughout the Colorado River Basin, and describes actions taken by Reclamation's Upper Colorado Region and Lower Colorado Region to carry out Reclamation's power responsibilities.

Reclamation continues to be responsible for power generation and for matters relating to project use power. Project use power is power generated as part of a Federal Reclamation project to serve project use requirements, as for example, the pumping needs of the project. Reclamation's responsibilities relating to project use power include determination of project use power requirements, and development of project use power rates.

Due to the interrelated nature of power generation and marketing, Reclamation and Western are both party to numerous contracts entered into during the period from 1979 through 2008. Many of the contracts discussed in this chapter have been assigned different contract numbers by the respective agencies. The contract numbers referenced in this chapter are those assigned by Reclamation.

Western Area Power Administration

The Department of Energy Organization Act, Public Law (Pub. L.) No. 95-91, 91 Stat. 565 (1977) (DOE Act), established DOE by the reorganization of energy functions within the Federal government to ensure a coordinated national energy policy. Section 302(a)(1)(E) of the DOE Act transfers to the Secretary of Energy "the power marketing functions of the Bureau of Reclamation, including the construction, operation, and maintenance of transmission lines and attendant facilities." Since 1977, power generated by Reclamation that is surplus to project needs has been marketed by DOE under rates set by DOE.

Western was created under Section 302(a)(3) of the DOE Act. In accordance with Section 302(a)(3), Western, acting through its Administrator and on behalf of the Secretary of Energy, exercises the power marketing functions transferred to DOE from the Upper and Lower Colorado Regions of Reclamation. Reclamation

entered into several agreements with Western to implement the transfer of functions and to define the responsibilities of the agencies. Two of these agreements are described in more detail below.

Master Agreement and Finance Working Agreement

By memorandum dated November 26, 1979, the Commissioner of Reclamation (then temporarily named the Water and Power Resources Service) and the Administrator of Western agreed to guidelines that would govern the transfer of functions and property pursuant to the DOE Act. The memorandum provided that certain property would be excepted from the transfer, stating that "Western and Service agree that Service should retain ownership of the CAP transmission lines and the Navajo power entitlement." On March 26, 1980, the two agencies entered into the Agreement Between Water and Power Resources Service [now Bureau of Reclamation], Department of the Interior, and Western Area Power Administration, Department of Energy, later designated as Reclamation Contract No. 0-AG-30-P1037 (Master Agreement). The Master Agreement implemented the guidelines agreed to in the November 1979 memorandum and formalized the transfer of functions and property from Reclamation to Western. Specific details to coordinate operations between Reclamation and Western have been developed as the need arises.

After 1977, with Reclamation retaining project oversight and power generating functions and with the power marketing function transferred to Western, the agencies developed interagency procedures to ensure the appropriate disposition of power revenues. Reclamation and Western entered into the Informal Working Agreement Between the Bureau of Reclamation and Western Area Power Administration for Budget and Finance and Accounting Matters in 1983 (Finance Working Agreement), and agreed to maintain, to the extent practicable, separate books of account for each project or, at each agency's option, to maintain accounts at a lower level which could be consolidated to the project level. The Finance Working Agreement addressed Western's disposition of power marketing revenues into the Treasury for Federal Reclamation projects and the allocation of such revenues for Reclamation and Western program requirements.

Memorandum of Understanding Between the Bureau of Reclamation and the Federal Energy Regulatory Commission

Reclamation is authorized under the Act of April 16, 1906, Pub. L. No. 59-103, 34 Stat. 116 (1906) (Town Sites and Power Development Act), and the Reclamation Project Act of 1939, Pub. L. No. 76-260, 53 Stat. 1187 (1939), to grant leases of power privilege to non-Federal entities for the development of hydroelectric power on Reclamation projects. The Federal Energy Regulatory

Commission (FERC) is authorized under Title IV of the DOE Act to issue permits and licenses to non-Federal entities for the development of hydroelectric power projects under its jurisdiction.

A dispute regarding the respective roles of the two agencies with respect to jurisdiction over hydropower development came before the Tenth Circuit Court of Appeals in *Uncompahgre Valley Water Users Ass'n* v. *Federal Energy Regulatory Commission*, 785 F.2d 269 (10th Cir. 1986), *cert. denied sub nom. Town of Norwood* v. *Uncompahgre Valley Water Users Ass'n*, 479 U.S. 829 (1986). The *Uncompahgre* decision, which held in favor of Reclamation under the particular circumstances of *Uncompahgre*, is discussed in Chapter 12. Following the *Uncompahgre* decision, FERC and Reclamation developed the Memorandum of Understanding between the Federal Energy Regulatory Commission and the Bureau of Reclamation, Department of the Interior, for Establishment of Processes for the Early Resolution of Issues Related to the Timely Development of Non-Federal Hydroelectric Power at Bureau of Reclamation Facilities (MOU), dated November 6, 1992, to address jurisdictional issues. The MOU is published in the *Federal Register* at 58 Fed. Reg. 3269 (January 8, 1993).

The MOU sets forth a process for the agencies to resolve differences with respect to jurisdiction over either applications for a permit or license or requests for a lease of power privilege.

Upper Basin Power

The Colorado River Storage Project (CRSP) was authorized by the Colorado River Storage Project Act, Pub. L. No. 84-485, 70 Stat. 105 (1956) (CRSPA). A discussion of CRSPA is located in *Updating the Hoover Dam Documents 1978*, Chapters I(H) and V. CRSPA's text is set forth in Appendix 1 H.1 of the same volume.

The CRSPA authorized four initial storage units: (1) Glen Canyon Unit, consisting of a dam, reservoir, and powerplant on the Colorado River in the States of Arizona and Utah; (2) Navajo Unit, consisting of a dam and reservoir on the San Juan River in the States of Colorado and New Mexico; (3) Flaming Gorge Unit, consisting of a dam, reservoir, and powerplant on the Green River in the States of Utah and Wyoming; and (4) the Curecanti Unit, consisting of Blue Mesa, Morrow Point, and Crystal dams, reservoirs, and powerplants on the Gunnison River in the State of Colorado. The Curecanti Unit was renamed the Wayne N. Aspinall Unit in 1980 in honor of United States Representative Wayne N. Aspinall from Colorado.

Colorado River Storage Project Powerplant Capacity

Since 1979, the generating capacity of the CRSP powerplants has increased through the replacement of the original windings in the generators and other work. As of December 31, 2008, the generating capacities are as follows:

- The Glen Canyon Powerplant capacity for eight generators is 1,320 megawatts (MW).

- The Flaming Gorge Powerplant capacity for three generators is 151.5 MW.

- The combined powerplant capacity on the Aspinall Unit is 282.9 MW and includes two generators at Blue Mesa with a combined capacity of 86.4 MW, two generators at Morrow Point with a combined capacity of 165 MW, and one generator at Crystal with a capacity of 31.5 MW.

In addition, Federal powerplants were also constructed at some of the CRSP participating projects. A 10-MW powerplant was constructed at Fontanelle Dam of the Seedskadee Project in Wyoming. Two powerplants (McPhee, at 1.3 MW; and Towaoc, at 11.5 MW) were included in the Dolores Project in Colorado.

Generating capacity has also been increased through the construction of additional non-Federal hydrogeneration facilities. In general, a non-Federal entity must obtain a lease of power privilege from Reclamation to operate any hydrogeneration facilities at a CRSP facility. An exception to this requirement is at Navajo Dam where, under the CRSP Act, the authorization was limited to "dam and reservoir only." Instead, a powerplant with a capacity of 30 MW was constructed at Navajo Dam under a license issued by FERC on October 15, 1985. The powerplant is owned and operated by the City of Farmington, New Mexico.

Other non-Federal development includes a 0.12-MW powerplant added to the Lemon Dam on the Florida Project in Colorado, under a lease of power privilege granted by Reclamation to the Florida Water Conservancy District on July 15, 1988. The 10.5-MW Olmsted Powerplant and water rights were acquired under condemnation for the Central Utah Project, Utah. A private 13-MW powerplant has been constructed at Jordanelle Dam on the Central Utah Project under a 40-year lease of power privilege granted by Reclamation to the Central Utah Water Conservancy District and Heber Light and Power on July 19, 2005.

Colorado River Storage Project Transmission

The CRSPA, as amended, provides that project powerplants and transmission facilities shall be operated in conjunction with other Federal powerplants, present and potential, so as to produce the greatest practicable amount of power and energy that can be sold at firm power and energy rates. Pursuant to these statutory provisions, a high-voltage transmission grid was constructed, which interconnected the CRSP powerplants and participating projects with other

Reclamation projects and with public and private utilities in the CRSP power marketing area, which includes the States of Arizona, Nevada, Colorado, New Mexico, Utah, Wyoming, and Nebraska.

After the transmission and power marketing functions of Reclamation were transferred to Western, the initial CRSP transmission system constructed by Reclamation was extended by Western. The CRSP transmission system now includes major transmission lines consisting of approximately 869 miles of 345-kilovolt (kV) transmission lines, 944 miles of 230-kV transmission lines, 307 miles of 138-kV transmission lines, and 135 miles of 115-kV transmission lines. The CRSP transmission system also includes 31 substations. The CRSP transmission system is operated and maintained by Western, and Western enters into contracts covering interconnection and transmission service with utilities in the CRSP power marketing area.

Colorado River Storage Project Power Marketing

Western's Colorado River Storage Project Management Center markets CRSP power with power from Reclamation's Collbran Project (Upper and Lower Molina Powerplants, respectively, located on Bonham Reservoir and Plateau Creek in Colorado) and the Rio Grande Project (Elephant Butte Powerplant on the Rio Grande River in New Mexico). The combined projects are marketed together by Western as the Salt Lake City Area Integrated Projects. The rates are evaluated each year, utilizing Reclamation and Western data, to ensure that revenues are adequate to meet the projects' operation, maintenance, replacement, and repayment obligations and to maintain an adequate balance in the Upper Colorado River Basin Fund authorized in CRSPA.

Lower Basin Power

The actions of Reclamation's Lower Colorado Region to carry out power-related responsibilities for Hoover Dam (the Boulder Canyon Project) and for Parker and Davis Dams (the Parker-Davis Project) are discussed in this chapter. The authorizations for these dams are described in *The Hoover Dam Documents 1948*, Chapters IV and XII, respectively. Reclamation's actions in connection with Headgate Rock Dam, authorized under the same statutory provisions as Parker Dam, and Reclamation's actions in connection with the Siphon Drop Powerplant are also discussed in this chapter. Reclamation is responsible for the Federal interest in the Navajo Project and for the Central Arizona Project (CAP) transmission system, both authorized under the Colorado River Basin Project Act, Pub. L. No. 90-537, 82 Stat. 885 (1968) (CRBPA or Basin Project Act). Reclamation's actions to carry out power-related responsibilities under the Basin Project Act are discussed in this chapter. The discussion of Reclamation's Lower Colorado Region power-related actions concludes with a description of actions in the Yuma, Arizona, area.

Hoover Power Operations

The Los Angeles Department of Water and Power (LADWP) and Southern California Edison Company operated the Hoover Powerplant from 1937 until the late 1980s under Contract Ilr-1333, dated May 29, 1941. See *The Hoover Dam Documents 1948*, Appendix 902. When the contract with the California agencies terminated, Reclamation took over operations. Letter Agreement No. 6-07-30-P1011 between Reclamation and LADWP, effective June 1, 1985, through May 31, 1989, provided for LADWP to train Reclamation personnel in the specifics of operating and maintaining the Hoover Powerplant. Reclamation, Western, and LADWP later entered into Contract No. 1-CS-30-P1100, dated June 16, 1992, which provided for the sale and consolidation of the LADWP facilities and the consolidation of Federal switchyards to deliver power from the Hoover Powerplant to Western's Mead 230-kV substation.

Reclamation and Western also entered into Interagency Agreement No. 7-07-30-P1015, dated May 28, 1987, to improve the efficiency of Hoover Powerplant and Mead Substation operations, and Interagency Agreement No. 3-AG-30-P1177, dated April 26, 2004, for Western to maintain and replace, as necessary, the Hoover Dam 230-kV electrical facilities.

Hoover Power Generation and Marketing Regulations

In 1986, the Secretary of the Interior (Secretary) terminated the General Regulations for Lease of Power, adopted April 25, 1930, and amended November 16, 1931, and the General Regulations for Generation and Sale of Power, adopted May 20, 1941, and replaced these with new regulations that reflected the 1977 separation of the power generation and marketing functions between Reclamation and Western. The 1931 regulations, as amended, are set forth as Appendix 601 to *The Hoover Dam Documents 1948*, and are discussed in Chapter VI of that volume. The 1941 regulations are set forth as Appendix 901 to that volume, and are discussed in Chapter IX of that volume.

The Secretary adopted the General Regulations for Power Generation, Operation, Maintenance, and Replacement at the Boulder Canyon Project, Arizona/Nevada on June 3, 1986, published in the *Federal Register* at 51 Fed. Reg. 23960 (July 1, 1986) and effective July 31, 1986. The 1986 regulations, set forth at 43 CFR Part 431, address Reclamation's power generation responsibilities, define the procedures to be used by Reclamation to provide contractors and Western with cost data and power generation estimates associated with operation of the project, set forth procedures relating to administration and management of the Colorado River Dam Fund established under the Boulder Canyon Project Act, Pub. L. No. 70-642, 45 Stat. 1057 (1928), and provide dispute resolution procedures.

The Hoover Power Plant Act of 1984

Title I of the Hoover Power Plant Act of 1984, Pub. L. No. 98-381, 98 Stat. 1333 (1984) (Hoover Power Plant Act), authorized the Secretary to increase the

capacity of existing Hoover Powerplant generating equipment and appurtenances in an uprating program to provide an additional 503 MW of capacity. Section 105 of the Hoover Power Plant Act required that the uprating program be undertaken with funds advanced to the Secretary of the Interior by the non-Federal entities that contracted with the Secretary of Energy to purchase the additional capacity. The initial advance funding for the uprating program was provided by Interim Contract No. 6-07-30-P1009, dated March 11, 1986, among Reclamation, Western, the Arizona Power Authority, the California cities of Anaheim, Azusa, Banning, Burbank, Colton, Glendale, Pasadena, Riverside, and Vernon, and the Colorado River Commission of Nevada. This contract was superseded by individual contracts between the electric service contractors and Reclamation for the advancement of funds.

The Hoover Power Plant Act further authorized a Hoover Dam and Powerplant visitor facilities program to include improved parking, visitor facilities, elevators, and roadways, which, as part of the Boulder Canyon Project, would ultimately be funded by the electric service contractors. The Secretary was also authorized under the Hoover Power Plant Act to construct a Colorado River bridge crossing immediately downstream from Hoover Dam to alleviate traffic congestion and reduce safety hazards. The Hoover Power Plant Act provided that the bridge would not be part of the Boulder Canyon Project and would not be funded or repaid from the Colorado River Dam Fund established under the Boulder Canyon Project Act, or from the Lower Colorado River Basin Development Fund (Development Fund) established under the Basin Project Act.

The original Boulder Canyon Project electric service contracts were to expire on May 31, 1987. The Hoover Power Plant Act directed the Secretary of Energy to enter into renewal contracts to replace these contracts and to place under contract the additional capacity resulting from the uprating program. Western issued the General Consolidated Power Marketing Criteria or Regulations for Boulder City Area Projects on May 3, 1983, published in the *Federal Register* at 48 Fed. Reg. 20872 (May 9, 1983). These criteria were amended to conform to the Hoover Power Plant Act and, as amended, were published in the *Federal Register* at 49 Fed. Reg. 50582 (December 28, 1984). Western adopted the General Regulations for the Charges for the Sale of Power from the Boulder Canyon Project on November 14, 1986. These regulations are published in the *Federal Register* at 51 Fed. Reg. 43124 (November 28, 1986) and set forth at 10 Code of Federal Regulations (CFR) Part 904. The regulations became effective June 1, 1987. Western then entered into new electric service contracts, as provided for in the Hoover Power Plant Act, to expire on September 30, 2017.

As a means to resolve financial and oversight issues relating to the administration of the new Boulder Canyon Project electric service contracts, Reclamation, Western, and the Boulder Canyon Project electric service contractors entered into the Implementation Agreement, Contract No. 5-CU-30-P1128, effective

February 17, 1995. This agreement primarily addressed principal payments, uprating credits, annual rate adjustments, and billing and payment procedures.

Title II of the Hoover Power Plant Act required that each long-term firm power service contract entered into or amended by Western after August 17, 1985, require the purchaser to develop and implement an energy conservation program. Title II was amended by the Energy Policy Act of 1992, Pub. L. No. 102-486, Section 114, 106 Stat. 2799 (1992) to require purchasers of electric energy under long-term firm power service contracts to implement integrated resource planning as defined in that statute.

Parker-Davis Project

In a memorandum dated October 5, 1995, Reclamation's Lower Colorado Region informed the Parker-Davis Project electric service and transmission service contractors that Reclamation intended to reduce its request for fiscal year 1997 Federal appropriations for the operation, maintenance, and replacement of Reclamation's portion of Parker-Davis Project generation facilities, and to eliminate appropriation requests for Parker-Davis Project funding beginning in fiscal year 1998. Reclamation and Western then sought and received advance funding for such activities directly from the contractors for project use power and for firm electric service. (Project use power is power generated as part of a Federal Reclamation project to serve project use requirements. The firm electric service contractors contract with Western for the Parker-Davis Project power that is surplus to project requirements.)

Reclamation's and Western's actions resulted in several Parker-Davis Project contracts relating to project use power, including:[1]

- An Agreement in Principle for Parker-Davis Project Priority Use Power, Contract No. 6-CU-30-P1135, among Reclamation, Western, Wellton-Mohawk Irrigation and Drainage District (WMIDD), Yuma County Water Users' Association (YCWUA), Yuma Mesa Irrigation and Drainage District (YMIDD), Yuma Irrigation District (YID) and Unit "B" Irrigation and Drainage District (Unit "B"), effective July 2, 1996. This contract recognized project use power as having first priority with respect to Parker-Davis Project generation and transmission. The Agreement in Principle terminated upon execution of Contract No. 6-CU-30-P1136.

- The Joint Participation Contract for Parker-Davis Project Priority Use Power, Contract No. 6-CU-30-P1136 (Joint Participation Contract), dated October 18, 1996, among Reclamation, Western, WMIDD, YCWUA, YMIDD, YID, and Unit "B." This contract appointed WMIDD and YCWUA as Aggregate Power Managers with the responsibility for the aggregation of resources and loads to permit efficient scheduling, use, and

[1] In these contracts, project use power is referred to as priority use power, and the amount of project use power available was increased from 39 MW to 40.5 MW.

delivery. The Aggregate Power Managers participate in the development of Reclamation's and Western's annual work plans, 10-year plans, and decisionmaking regarding the extent to which the work plans will be advance funded.

- Amendment No. 1 to the Joint Participation Contract, effective October 1, 1998, which superseded and replaced the 1996 Joint Participation Contract, specified the authority and duties of the Aggregate Power Managers, other districts, Reclamation, and Western and involves the parties more fully in the planning and participative process.

- Amendment No. 2 to the Joint Participation Contract, dated May 27, 2005, which restated and superseded Amendment No. 1, requires the Aggregate Power Managers to serve a pumping load relating to a San Luis Rey Indian water rights settlement (see discussion in Chapter 6 and Chapter 10) and allows the Aggregate Power Mangers to use project use power for their "full range of purposes." The San Luis Rey Indian Water Rights Settlement Act, Pub. L. No. 100-675, Title I, 102 Stat. 4000 (1988), provided for the settlement of the water rights claims of the La Jolla, Rincon, San Pasqual, Pauma, and Pala Bands of Mission Indians in San Diego County, California. See Chapter 10. This statute was amended by the Act of October 27, 2000, Pub. L. No. 106-377, Appendix B, 114 Stat. 1441A-70 (2000) (Packard Amendment), to permit the Aggregate Power Managers to use project use power for their "full range of purposes" in exchange for annually supplying the power capacity and energy for a San Luis Rey Indian water rights settlement in amounts sufficient to convey up to 16,000 acre-feet per year of water conserved from the All-American Canal and Coachella Canal lining projects. Letter Agreement No. 3-CU-30-P1175, among Reclamation, WMIDD, and YCWUA, dated April 8, 2004, implements the Packard Amendment and is attached as a coterminous exhibit to Amendment No. 2 to the Joint Participation Contract.

- The Operating Contract for Parker-Davis Project Priority Use Power, Contract No. 6-CU-30-P1138, dated October 18, 1996, which was restated and superseded by Amendment No. 1, dated May 27, 2005 (Operating Contract), among Reclamation, Western, WMIDD, and YCWUA. This contract provides a partnership program to define, protect, and more efficiently and effectively utilize project use power. The Operating Contract was amended to comply with the Packard Amendment and to conform to other changes made to the Joint Participation Contract. Exhibits were added to identify the nonproject loads for WMIDD and YCWUA and to identify the San Luis Rey Indian water settlement load.

- Advancement of Funds Contract for Parker-Davis Project Priority Use Power, Contract No. 6-CU-30-P1137, among Reclamation, Western, and the Aggregate Power Managers (WMIDD and YCWUA), dated October 18, 1996, and superseded and replaced on October 1, 1998, by Amendment No. 1 to the Advancement of Funds Contract For Parker-Davis Project Generation Facilities, and as further amended by Amendment No. 2, which restated and superseded Amendment No. 1 on May 27, 2005. This contract sets forth an advance funding process for the Aggregate Power Managers and makes corrections and clarifications to be consistent with the Joint Participation Contract and the Operating Contract.

- Advancement of Funds Contract for Parker-Davis Project Generation Facilities, Contract No. 8-CU-30-P1148, among Reclamation, Western, and certain Parker-Davis Project Firm Electric Service Contractors, effective October 1, 1998. This contract provides for an advance funding process to ensure the availability and reliability of the Parker-Davis Project facilities and to maximize the benefits from those facilities. This contract superseded an interim advance funding agreement for fiscal year 1998. The contract does not have a termination date. The contract remains in effect until it terminates in accordance with its own terms, unless, with respect to an individual firm electric service contractor, that contractor's firm electric service contract for Parker-Davis Project power terminates first.

Headgate Rock Dam and Powerplant

Headgate Rock Dam, located on the Colorado River within the Colorado River Indian Reservation, about 15 miles downstream from Parker Dam, was completed in 1941. The original purpose of Headgate Rock Dam was to provide a water surface elevation sufficient to allow diversion into the Colorado River Indian Tribes' canal works. In 1984, under the authority of the Act of November 2, 1921, Pub. L. No. 67-85, 42 Stat. 208 (1921) (Snyder Act), $11 million was appropriated for Reclamation to design and construct the Headgate Rock Hydroelectric Project for the Bureau of Indian Affairs (BIA). Construction proceeded under Interagency Agreement No. 6-AA-30-04110, dated July 15, 1986, between Reclamation and BIA. The project has a total capacity of 19,500 kW provided by three 6,500-kW turbines operating at a net head of 13 to 20 feet with an average head of 15 feet.

Interagency Agreement No. 9-AA-30-07220, dated March 28, 1988, between Reclamation and BIA, provides that Reclamation, on behalf of BIA, will operate and maintain Headgate Rock Dam, the control gates, and the Headgate Rock Powerplant.

Interagency Agreement No. 1-AA-30-P1097, dated January 6, 1992, between Reclamation and BIA, coordinates and establishes consistent procedures for the

safe and reliable operation and maintenance of Headgate Rock Powerplant, dam, and diversion facilities, switchyard, and associated transmission facilities. By memorandum dated May 20, 1997, Reclamation transferred the Headgate Rock Hydroelectric Project, including the powerplant, switchyard, and transmission line, from construction to operation and maintenance status and transferred the operation and maintenance responsibility to BIA. Reclamation provided training to BIA in the operation and maintenance of the project. At the request of BIA, Reclamation continued to provide occasional assistance to BIA in the operation and maintenance of the facility under Interagency Agreement No. 9-AA-30-07220 and was doing so as of December 31, 2008.

In October 1998, a penstock failure resulted in flooding of the powerhouse. All three units were rewound, equipment was repaired, and new digital governors were installed. The powerplant was put back online in stages and was fully back online in September 2000.

Siphon Drop Powerplant

Construction of the original Siphon Drop Powerplant is discussed in Chapter XII of *The Hoover Dam Documents 1948* (referred to as Syphon Drop Powerplant). The original Siphon Drop Powerplant was constructed as a feature of the Yuma Project in 1926 and was located at Siphon Drop on the Yuma Main Canal, just south of the All-American Canal. The Yuma Project was authorized under the Reclamation Act of 1902, Pub. L. No. 57-161, 32 Stat. 388 (1902). The powerplant had two units with a total capacity of 1,600 kW and was operated by YCWUA. The plant ceased operation in 1972 due to safety concerns.

In a letter agreement dated August 23, 1985, Reclamation and YCWUA agreed to the replacement of the Siphon Drop Powerplant in accordance with the designs and specifications approved by the United States. The replacement was constructed in a new location, along the All-American Canal, and came online in the latter part of 1987. The United States holds title to the Siphon Drop Powerplant. YCWUA operates, maintains, and repairs the replaced Siphon Drop Powerplant, which as of December 31, 2008, has a total nameplate rating of 4,500 kW.

Navajo Project

In accordance with the Basin Project Act, the Secretary of the Interior acquired an interest in capacity and energy from the Navajo Generating Station, a non-Federal thermal generating powerplant, and capacity in associated transmission facilities for the benefit of the CAP. See Chapter 5 for discussion of the CAP. The Navajo Project consists of the 24.3 percent Federal interest in the Navajo Generating Station and the Federal interest in associated transmission facilities. The Navajo Project transmission facilities include the Federal interest in the Western Transmission System, which runs from the Navajo Generating Station westward and then south to the McCullough Substation, and the Federal interest in the Southern Transmission System, which runs from the Navajo Generating

Station southward to the Westwing Substation. The physical features of the Navajo Project, including the western and southern transmission systems, are described in *Updating the Hoover Dam Documents 1978*, Chapter III, as are the early contracts associated with the project.

Additional Navajo Project agreements were executed between 1979 and 2008:

- The Navajo Project Navajo Generating Station Operating Agreement (No. 14-06-300-2539) was executed among the United States of America acting through the Secretary of Interior and Reclamation, Arizona Public Service Company (APS), LADWP, Nevada Power Company (NPC), Salt River Project Agricultural Improvement and Power District (SRP), and Tucson Gas & Electric Company (TG&E), on July 23, 1979, establishing the terms and conditions for operation and maintenance of the Navajo Generating Station and appointing SRP as Operating Agent of the Navajo Generating Station.

- The Navajo Project Western Transmission System Operating Agreement (No. 7-07-30-P0015) was executed among the United States of America acting through the Secretary of Interior and Reclamation, APS, LADWP, NPC, SRP, and TG&E, on July 23, 1979, establishing the terms and conditions for the operation and maintenance of the Navajo Project Western Transmission System. NPC was appointed Operating Agent of the Navajo Project western line facilities and is responsible for the line patrols and emergency repairs to the Navajo-McCullough 500-kV transmission line and for the maintenance of the Navajo Project western transmission microwave system. LADWP was appointed Operating Agent of the McCullough facilities and is responsible for switching, line loading, voltage levels, and operation of capacitors and reactors.

- The Navajo Project Southern Transmission System Operating Agreement (No. 14-06-300-2538) was executed among the United States of America acting through the Secretary of Interior and Reclamation, APS, LADWP, NPC, SRP, and TG&E, on July 23, 1979, establishing the terms and conditions for the operation and maintenance of the Navajo Project Southern Transmission System and appointing APS as Operating Agent.

- The McCullough 287 kV and 230 kV Switchyards Agreement (No. 5-07-30-P1005) was executed among the United States of America acting through the Secretary of Interior and Reclamation (then the Water and Power Resources Service), LADWP, and NPC, on August 18, 1981, establishing the terms under which LADWP, as Operating Agent of McCullough Substation, would coordinate construction of the 230-kV switchyard and transformer facilities necessary to accommodate the McCullough to Davis line constructed as part of the CAP.

Navajo Surplus

Section 303 of the Basin Project Act authorized the Secretary of the Interior to sell the power and energy acquired, but not needed, for the operation of the CAP at such prices as the Secretary may determine. Revenue from these sales is deposited to the Development Fund. As noted earlier, the Secretary's marketing functions were transferred to Western in 1977 with the creation of the United States Department of Energy.

The Hoover Power Plant Act, Section 107, provided additional guidance with respect to such sales, as discussed below, defining "Navajo surplus" as follows and expressly placing the marketing of Navajo surplus under the control of the Secretary of Energy:

> Subject to the provisions of any existing layoff contracts, electrical capacity and energy associated with the United States' interest in the Navajo generating station which is in excess of the pumping requirements of the Central Arizona project and any such needs for desalting and protective pumping facilities as may be required under section 101(b)(2)(B) of the Colorado River Basin Salinity Control Act of 1974 as amended (hereinafter in this Act referred to as "Navajo surplus") shall be marketed and exchanged by the Secretary of Energy pursuant to this section.

The statutory references to "desalting and protective pumping facilities" are to the Yuma Desalting Plant and the 242 Wellfield discussed in Chapter 4.

Navajo Power Marketing Plan

Section 107 of the Hoover Power Plant Act requires the Secretary of the Interior to adopt a plan, after consultation with representatives of the Secretary of Energy, the Governor of Arizona, and the Central Arizona Water Conservation District (CAWCD), "for the purposes of optimizing the availability of Navajo surplus and providing financial assistance in the timely construction and repayment of construction costs of authorized features of the Central Arizona project." Section 107 directs the Secretary of Energy to market Navajo surplus in accordance with the plan.

The Hoover Power Plant Act further provides that the revenues from the sale of Navajo surplus will be deposited to the Development Fund to be used to provide financial assistance in the repayment of construction costs for authorized features of the CAP. An additional rate component was also authorized to be collected for the purpose of repaying bonds issued by CAWCD to advance fund, among other things, the construction of New Waddell Dam.

The Secretary, acting through the Commissioner of Reclamation, adopted an Interim Navajo Power Marketing Plan on March 17, 1986, which was superseded by the Navajo Power Marketing Plan adopted on December 1, 1987. The 1987 plan was published in the *Federal Register* at 52 Fed. Reg. 48328

(December 21, 1987). Under this plan, contractors entering into long-term sales contracts for Navajo surplus were to be given a first opportunity when those contracts expired to enter into new long-term contracts for Navajo surplus.

Reclamation, CAWCD, and Western entered into an agreement titled Administration of the Contracts for Long-Term Sale and Exchange of Navajo Surplus Power, Agreement No. 0-CS-30-P1076, on May 15, 1990, to define the responsibilities of each agency with respect to the contracts for the sale or exchange of Navajo surplus. Navajo surplus was marketed to SRP under the 1987 plan through a series of three contracts, known as the Four-Party Agreements, as follows:

- Long-Term Sale of Navajo Surplus Power Central Arizona Project/Navajo Generating Station, Contract No. 0-CS-300-P1080, among Reclamation, Western, CAWCD, and SRP, executed on May 15, 1990, marketed 200 MW of Navajo surplus capacity and associated transmission to SRP, with annual deliveries of energy equal to 152,000 megawatt-hours (MWh).

- Long-Term Sale of Navajo Surplus Power Central Arizona Project/Navajo Generating Station, Contract No. 1-CS-30-P1102, among Reclamation, Western, CAWCD, and SRP, executed on August 27, 1991, marketed 150 MW of Navajo surplus capacity and associated transmission to SRP, with annual deliveries of energy equal to 114,000 MWh.

- Long-Term Sale of Remaining Navajo Surplus Power and Coordinated Operation of Power Systems Central Arizona Project, Contract No. 4-CS-300-P1125, among Reclamation, Western, CAWCD, and SRP, executed March 15, 1994, marketed the remaining Federal interest in Navajo Generating Station generation and the Federal interest in the Navajo Project western and southern transmission systems to SRP. This contract also provides for the operational integration of Navajo power with CAP's other power resources and provides for the coordinated operation of the SRP electric system with the CAP electric system, including transmission rights acquired by Reclamation to serve CAP needs.

The Four-Party Agreements each terminate on September 30, 2011. Western entered into a letter agreement with SRP on September 28, 2007, to market to SRP up to 220,800 MWh per year of the Navajo surplus power available during certain peak hours from June through August for the period from October 1, 2011, to September 30, 2031. Reclamation, Western, CAWCD, and SRP, in a letter agreement dated September 28, 2007, recognized this as an appropriate sale of Navajo surplus under the Hoover Power Plant Act of 1984. In this letter agreement, CAWCD concurred that this sale optimized the financial assistance available "for the purposes set forth in 43 United States Code 1543(f), as amended by the Arizona Water Settlements Act of 2004, Public Law 108-451."

Amended Navajo Power Marketing Plan

The Amended Navajo Power Marketing Plan was adopted by the Secretary of the Interior, acting through the Commissioner of Reclamation, on September 18, 2007, and was published in the *Federal Register* at 72 Fed. Reg. 54286 (September 24, 2007). The amended plan was developed by Reclamation in consultation with representatives of the Secretary of Energy (specifically, with Western), the Governor of Arizona (specifically, with the Arizona Department of Water Resources), and CAWCD to maximize revenues from the sale of Navajo surplus. Amending the plan to maximize revenues for deposit into the Development Fund was a precondition of the Stipulation for Judgment in the CAP repayment litigation. See Chapter 5. The entry of final judgment in accordance with the Stipulation for Judgment in the CAP repayment litigation was an enforceability requirement of Section 207(c)(1)(K) of the Arizona Water Settlements Act of 2004, Pub. L. No. 108-451, 118 Stat. 3478 (2004), which expanded the authorized uses of revenues deposited into the Development Fund.

The Navajo surplus which becomes available when the Four Party Agreements terminate on September 30, 2011, will be marketed under the Amended Navajo Power Marketing Plan.

Central Arizona Project Transmission System

The CAP transmission system is by design interconnected with other Federal transmission systems; in particular, those of the Navajo Project, the Parker-Davis Project, and Pacific Northwest-Pacific Southwest Intertie Project, as an economical means to deliver power from the Navajo Generating Station to the CAP pumping plants. See Figure 13-1. The CAP has 15 pumping plants, each using varying amounts of power to move Colorado River water through the approximately 330-mile CAP aqueduct.

Currently, the CAP pumps run, on average, about 50 percent of the time and consume energy on the order of 2,500,000 MWh annually. As of 2008, the power requirements of the CAP pumps were primarily met by three Federal sources: the Navajo Generating Station, the Hoover Powerplant, and the New Waddell Pump-Generating Plant, with remaining demand met by power acquired by CAWCD. A breakdown of the Federal resources supporting the CAP is as follows:

- Navajo Generating Station - About a quarter of the capacity and energy of the Navajo Generating Station (24.3 percent) was acquired by the United States for the benefit of the CAP. This percentage converts to approximately 547 MW of capacity and 4,300,000 MWh of energy per year.

- Hoover Powerplant - CAWCD's Hoover allocation of capacity and energy under contract with the Arizona Power Authority for the CAP is up to 161.6 MW of capacity and up to 182,235 MWh of energy resulting from the Hoover Powerplant uprating program (known as Hoover Schedule B

capacity and energy). The Arizona Power Authority, also through a contract with CAWCD, reserves a portion of the energy resulting from the release of surplus Colorado River water (known as Hoover Schedule C energy) for the CAP. The contracts between Arizona Power Authority and CAWCD for Hoover Schedule B and Hoover Schedule C expire September 30, 2017.

- New Waddell Pump-Generating Plant - Located near the base of New Waddell Dam, the New Waddell Pump-Generating Plant went into operation in 1994. It has eight units, of which four are adjustable speed pumps and four are two-speed pump-generators. The maximum capacity of the New Waddell Pump-Generating Plant is 45 MW.

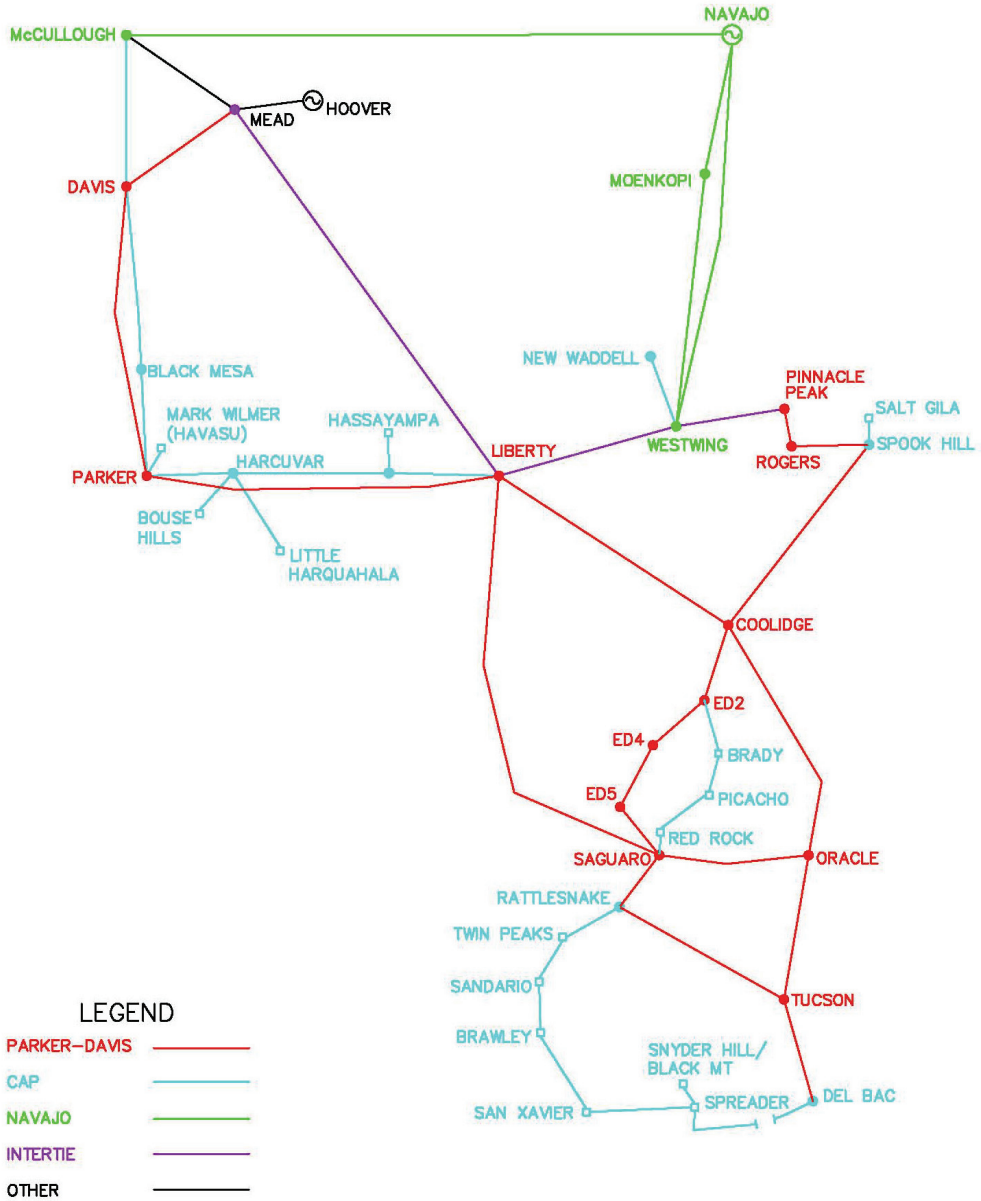

Figure 13-1. Navajo, CAP, and supporting interconnected transmission systems.

Transmission capacity rights were acquired by the United States for the benefit of the CAP in the following Navajo Project transmission systems:

- **Navajo Project - Southern Transmission System**
  Two separate 500-kV transmission lines routed side by side between Navajo Generating Station and Westwing Substation, located just northwest of Sun City West, Arizona. As of December 31, 2008, the lines are operated and maintained by the APS. The United States' share of these lines is approximately 550 MW as of December 31, 2008. The United States acquired this transmission capacity under Contract No. 14-06-300-2538.

- **Navajo Project - Western Transmission System**
  A single 500-kV transmission line routed from Navajo Generating Station to McCullough Substation, located near Boulder City, Nevada. As of December 31, 2008, this line is operated and maintained by Nevada Power Company. The United States' share of this line is approximately 356 MW as of December 31, 2008. The United States acquired this transmission capacity under Contract No. 7-07-30-P0015.

- **McCullough Substation to Mead Substation**
  122-MW transmission capacity acquired by the United States under Contract No. 1-CS-30-P1100 for the Sale and Consolidation of the Department of Water and Power of the City of Los Angeles Facilities Between Hoover Dam and Mead Substation and the Exchange of Capacity Between Reclamation, Western, and LADWP executed June 16, 1992. This contract also provides 122 MW of transformer capacity to LADWP.

Transmission lines were constructed by the United States for the benefit of the CAP in the following CAP transmission systems in which title is held by the United States:

- McCullough to Davis Dam to Parker Dam (230-kV capacity)

- Parker Dam to Mark Wilmer Pumping Plant (formerly Havasu Pumping Plant) (230-kV capacity)

- Parker Dam to Liberty Substation (230-kV capacity)

- Harcuvar Substation to Bouse Hills Pumping Plant (115-kV capacity)

- Harcuvar Substation to Little Harquahala Pumping Plant (115-kV capacity)

- Hassayampa Tap to Hassayampa Pumping Plant (230-kV capacity)

- Westwing Substation to Raceway Substation to New Waddell Dam (230-kV capacity)

- Spook Hill Substation to Salt Gila Pumping Plant (69-kV capacity)

- Electrical District No. 2 Substation to Saguaro Switchyard (115-kV capacity)

- Rattlesnake Tap to Del Bac Switchyard (115-kV capacity) (incomplete section remaining near Del Bac as of December 31, 2008)

Other transmission lines constructed by the United States, in particular for the Parker-Davis Project and Pacific Northwest-Pacific Southwest Intertie Project, provide support to meet the power requirements of the CAP. Title to these transmission systems is held by the United States.

Numerous contracts were entered into between 1979 and 2008 relating to the CAP transmission system, including:

- Letter Agreement No. 8-CU-30-P1055 between Reclamation and Western, dated January 24, 1983, establishes policies for control, operation, maintenance, design, and construction of CAP transmission facilities, including budget, billing, and payment procedures.

- Agreement for Operation, Maintenance, and Replacement of Facilities, Agreement No. 5-AG-30-P1046 between Reclamation and Western, dated June 11, 1985, provides for improving the operation efficiency of the CAP transmission facilities and sets forth more specifically the operation, maintenance, replacement, management, budget, and financial responsibilities of the agencies for the CAP transmission facilities.

- Letter Agreement No. 8-AG-30-P1043 between Reclamation and Western, dated October 30, 1985, provided that Reclamation plan, design, and construct the transmission lines necessary to operate the New Waddell Pump-Generating Facility.

- Letter Agreement No. 7-AG-30-P1017 between Reclamation and Western, addressed responsibilities relating to the procurement, installation, operation, maintenance, and sharing of certain CAP and Western communications facilities. The agreement was executed on January 5, 1984, and expired September 30, 2003.

- Shared Use Agreement No. 7-CU-30-P1139 among Reclamation, Western, and IXC Carrier, Inc. (now Broadwing Communications, LLC) dated October 17, 1996, provides for the funding, construction, operation, maintenance, and replacement of optical fiber ground wire and

communication system electronics supporting remote monitoring and control needs of Federal projects.

- Contract No. 3-CU-30-P1171 among Reclamation, CAWCD, and Western, dated April 14, 2003, became effective October 1, 2002, and expires September 30, 2017, unless Western's Contract No. 94-PAO-10602 terminates first. The contract is to reimburse Western for its operation and maintenance costs relating to CAP transmission.

- Letter Agreement No. 6-CU-30-P1188 among Reclamation, CAWCD, and Western, effective October 1, 2005, provides for reimbursement of Western's costs associated with the operation and maintenance of the CAP transmission system. As of December 31, 2008, Western was billing under this letter agreement and not under Contract No. 3-CU-30-P1171.

Yuma Area Power Contracts

The construction of the Yuma Desalting Plant (YDP) and the Protective and Regulatory Pumping Unit (also known as the PRPU or the 242 Wellfield) are described in Chapter 4. In the Act of September 4, 1980, Pub. L. No. 96-336, 94 Stat. 1063 (1980), which amended and supplemented the Colorado River Basin Salinity Control Act, Pub. L. No. 93-320, 88 Stat. 266 (1974), Congress authorized the use of power from the Navajo Generating Station to operate the YDP and the 242 Wellfield, subject to the pumping requirements of the CAP. The statute provided, however, that such use could not reduce revenues credited to the Development Fund and further provided that the Secretary of the Interior undertake an analysis of alternative sources of supply to operate the YDP and the 242 Wellfield. As of December 31, 2008, other power resources were being used for the YDP and the 242 Wellfield.

Reclamation and Western entered into Interagency Agreement No. 6-AG-30-P1018 for Firm Transmission Service (Yuma Desalting Plant) (Protective and Regulatory Pumping Unit), on December 12, 1991, to secure 27 MW of Parker-Davis Project and Pacific Northwest-Pacific Southwest Intertie Project transmission system capacity for electric power for the YDP and the 242 Wellfield. Since 1994, Parker-Davis Project and Pacific Northwest-Pacific Southwest Intertie Project transmission system capacity in excess of YDP and 242 Wellfield load have been temporarily reallocated to Western by Reclamation.

Contract No. 7-CU-30-P1141 among Reclamation, Yuma County, and YCWUA, dated September 2, 1998, and retroactively effective on October 1, 1997, provides for construction, operation, and maintenance of the wells of the Yuma Valley Drainage Well Project and established the terms and conditions for providing Federal power to operate the wells.

Chapter 13: List of References

Treaties, Interstate Compacts, and Federal Statutes

The Reclamation Act of 1902, Pub. L. No. 57-161, 32 Stat. 388 (1902).

Act of April 16, 1906, Pub. L. No. 59-103, 34 Stat. 116 (1906) (Town Sites and Power Development Act).

Act of November 2, 1921, Pub. L. No. 67-85, 42 Stat. 208 (1921) (Snyder Act).

Boulder Canyon Project Act, Pub. L. No. 70-642, 45 Stat. 1057 (1928). On DVD in *Updating the Hoover Dam Documents 1978* at I-13.

Reclamation Project Act of 1939, Pub. L. No. 76-260, 53 Stat. 1187 (1939).

Colorado River Storage Project Act, Pub. L. No. 84-485, 70 Stat. 105 (1956). On DVD in *Updating the Hoover Dam Documents 1978* at I-99.

Colorado River Basin Project Act of 1968, Pub. L. No. 90-537, 82 Stat. 885 (1968). On DVD in *Updating the Hoover Dam Documents 1978* at XII-9.

Department of Energy Organization Act, Pub. L. No. 95-91, 91 Stat. 565 (1977).

Act of September 4, 1980, Pub. L. No. 96-336, 94 Stat. 1063 (1980), amending and supplementing:

> Colorado River Basin Salinity Control Act, Pub. L. No. 93-320, 88 Stat. 266 (1974). On DVD in *Updating the Hoover Dam Documents 1978* at XIV-14.

Hoover Power Plant Act of 1984, Pub. L. No. 98-381, 98 Stat. 1333 (1984) (Appendix 46), later amended and supplemented by:

> Energy Policy Act of 1992, Pub. L. No. 102-486, Section 114, 106 Stat. 2799 (1992).

San Luis Rey Indian Water Rights Settlement Act, Pub. L. No. 100-675, Title I, 102 Stat. 4000 (1988) (Appendix 18), later amended and supplemented by:

> Act of October 27, 2000, Pub. L. No. 106-377 Appendix B, 114 Stat. 1441A-70 (2000). Appendix 19.

Arizona Water Settlements Act of 2004, Pub. L. No. 108-451, 118 Stat. 3478 (2004). DVD Supplement 48.

Federal Court Decisions

Uncompahgre Valley Water Users Ass'n v. *Federal Energy Regulatory Commission*:

785 F.2d 269 (10th Cir. 1986).

479 U.S. 829 (1986) (*sub nom. Town of Norwood* v. *Uncompahgre Valley Water Users Ass'n.*)

Federal Regulations

Bureau of Reclamation, General Regulations for Lease of Power, April 25, 1930.

Bureau of Reclamation, General Regulations for Generation and Sale of Power, May 20, 1941.

Western Area Power Administration, General Consolidated Power Marketing Criteria or Regulations for Boulder City Area Projects, May 3, 1983.

43 CFR Part 431, General Regulations for Power Generation, Operation, Maintenance, and Replacement at the Boulder Canyon Project, Arizona/Nevada (Bureau of Reclamation). Appendix 47.

10 CFR Part 904, General Regulations for the Charges for the Sale of Power from the Boulder Canyon Project (Western Area Power Administration).

Federal Register Notices

48 Fed. Reg. 20872 (May 9, 1983), General Consolidated Power Marketing Criteria or Regulations for Boulder City Area Projects.

49 Fed. Reg. 50582 (December 28, 1984), Conformed Consolidated Power Marketing Criteria or Regulations for Boulder City Area Projects. Conformance of Power Marketing Criteria in Accordance with Hoover Power Plant Act of 1984 (Pub. L. 98-381).

51 Fed. Reg. 23960 (July 1, 1986), General Regulations for Power Generation, Operation, Maintenance, and Replacement at the Boulder Canyon Project, Arizona/Nevada. Final Rule.

51 Fed. Reg. 43124 (November 28, 1986), General Regulations for the Charges for the Sale of Power from the Boulder Canyon Project. Final Rule.

52 Fed. Reg. 48328 (December 21, 1987), Adoption of Navajo Power Marketing Plan. Notice of adoption.

58 Fed. Reg. 3269 (January 8, 1993), Memorandum of Understanding Between the Federal Energy Regulatory Commission and the Department of the Interior, Bureau of Reclamation. Notice of Memorandum of Understanding.

72 Fed. Reg. 54286 (September 24, 2007), Adoption of Amended Navajo Power Marketing Plan. Notice of adoption.

Contracts and Agreements

Reclamation Contract No. 0-AG-30-P1037, Agreement Between Water and Power Resources Service [now Bureau of Reclamation] and Western Area Power Administration, March 26, 1980 (Master Agreement).

Informal Working Agreement Between the Bureau of Reclamation and Western Area Power Administration for Budget and Finance and Accounting Matters, March 14, 1983.

United States Department of the Interior Bureau of Reclamation Florida Project Lease of Power Privilege for the Lemon Dam Hydroelectric Project, Contract No. 8-07-40-P0140, July 15, 1988, between the United States and the Florida Water Conservancy District.

United States Department of the Interior Bureau of Reclamation Central Utah Project, Utah Lease of Power Privilege Among the United States of America, Central Utah Water Conservancy District, and Heber Light & Power Company for the Development of Hydroelectric Power at Jordanelle Dam, July 19, 2005, Contract No. 5-07-40-P0270.

Central Arizona Project Power-Related Contracts.

Headgate Rock Dam and Powerplant Interagency Agreements.

Hoover Power Operations Contracts.

Hoover Uprating and Electrical Service Contracts.

Navajo Project Contracts.

Navajo Surplus Contracts.

Parker-Davis Project Contracts.

Siphon Drop Powerplant Letter Agreement.

Yuma Area Contracts.

Letters

Director, Colorado River Water and Power Management Office to Parker-Davis Project Electric Service and Transmission Service Contractors, Parker Dam and Powerplant and Davis Dam and Powerplant Financing, October 5, 1995.

Memoranda

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Interim Navajo Power Marketing Plan, March 17, 1986. DVD Supplement 166.

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