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# United States Department of the Interior

## BUREAU OF RECLAMATION

Upper Colorado Regional Office  
125 South State Street, Room 6107  
Salt Lake City, Utah 84138-1147



UC-410  
ADM-1.10

### MEMORANDUM

To: Director, Policy and Program Services  
Attention: 84-52000 (AMorgan)

From: Larry Walkoviak   
Regional Director, Upper Colorado Region

JUN 23 2009

Lorri Gray-Lee   
Regional Director, Lower Colorado Region

JUN 25 2009

Subject: Transmittal of the Basin Study Proposal – Colorado River Basin States

It is our pleasure to transmit the attached Basin Study Proposal developed collaboratively among the seven Colorado River Basin States and the Bureau of Reclamation. The proposed study will analyze the water supply and demand imbalances throughout the Colorado River Basin and those adjacent areas of the Basin States that receive Colorado River water through 2060, assess options for resolving imbalances, and develop recommendations for future consideration to address current and projected imbalances. Paramount to the Basin Study will be an assessment of the potential impacts of climate variability and climate change on both water supplies and demands.

The study will be cost-shared 50-50 between the seven Colorado River Basin States and Reclamation. The study is widely supported across the Basin, as evidenced by the letters of support attached to the proposal.

The Upper and Lower Colorado Regions and the seven Colorado River Basin States fully endorse this Basin Study effort. Should you have questions, please contact Ms. Deborah L. Lawler at 801-524-3685 or by email at [dlawler@usbr.gov](mailto:dlawler@usbr.gov) or Ms. Amber Cunningham at 702-293-8472 or by email at [azcunningham@usbr.gov](mailto:azcunningham@usbr.gov).

Attachment

# COLORADO RIVER BASIN WATER SUPPLY AND DEMAND STUDY

*A Proposal Submitted for Consideration under the Basin Study Program*  
*June 2009*

## A. Project Information

### 1. Title

Colorado River Basin Water Supply and Demand Study

### 2. Location

The study area for the Colorado River Basin Water Supply and Demand Study (Basin Study) includes the Colorado River Basin as identified in Figure 1 and those adjacent areas of the Basin States that receive Colorado River water.

Figure 1. Study Area of the Colorado River Basin Water Supply and Demand Study



### 3. Total Study Cost

The total study cost is estimated to be \$2 million, to be cost-shared equally (a 50:50 percent split) between Federal and non-Federal Cost-Share Partners. The non-Federal cost-share contribution will consist of both direct (cash) and in-kind services.

### 4. Cost-Share Partners

Primary contacts for each of the non-Federal Cost-Share Partners are listed below:

<b>Organization</b>	<b>Primary Contact</b>	<b>Contact Information</b>
Arizona Department of Water Resources	Perri Benemelis	Colorado River Management 3550 North Central Avenue Phoenix, AZ 85012 (602) 771-8408 <a href="mailto:pfbenemelis@azwater.gov">pfbenemelis@azwater.gov</a>
Central Arizona Project	Tom McCann	Manager, Resource Planning and Analysis P.O. Box 43020 Phoenix, AZ 85080-3020 (623) 869-2343 <a href="mailto:tmccann@cap-az.com">tmccann@cap-az.com</a>
Colorado River Board of California	Jerry Zimmerman	Executive Director 770 Fairmont Avenue, Suite 100 Glendale, CA 91203 (818) 500-1625 x308 <a href="mailto:grzimmerman@crb.ca.gov">grzimmerman@crb.ca.gov</a>
Colorado River Commission of Nevada	George Caan	Executive Director 555 E. Washington Avenue, Suite 3100 Las Vegas, NV 89101-1065 (702) 486-2670 <a href="mailto:gcaan@crc.nv.gov">gcaan@crc.nv.gov</a>
Colorado Water Conservation Board	Randy Seaholm	Chief, Water Supply Protection 1313 Sherman Street, Room 721 Denver, CO 80203 (303) 866-3441 ext. 3233 <a href="mailto:Randy.seaholm@state.co.us">Randy.seaholm@state.co.us</a>
Metropolitan Water District of Southern California	Bill Hasencamp	Manager, Colorado River Resources 700 N. Alameda Avenue Los Angeles, CA 90012 (213) 217-6520 <a href="mailto:whasencamp@mwdh2o.com">whasencamp@mwdh2o.com</a>
New Mexico Interstate Stream Commission	John Whipple	Colorado River Program Manager PO Box 25102 Santa Fe, NM 87504-5102 (505) 827-6172 <a href="mailto:john.whipple@state.nm.us">john.whipple@state.nm.us</a>

Six Agency Committee (representing the following agencies)	Bart Fisher	Chairman 770 Fairmont Avenue, Suite 100 Glendale, CA 91203 (818) 500-1625 <a href="mailto:bart@fisherwireless.com">bart@fisherwireless.com</a>
Coachella Valley Water District	Steve Robbins	General Manager P.O. Box 1058 Coachella, CA 92236 (760) 398-2651 <a href="mailto:srobbins@cvwd.org">srobbins@cvwd.org</a>
Imperial Irrigation District	Brian Brady	General Manager P.O. Box 937 Imperial, CA 92251 (760) 339-9477 <a href="mailto:bjbrady@iid.com">bjbrady@iid.com</a>
Los Angeles Department of Water and Power	James McDaniel	Senior Assistant General Manager, Water Systems P.O. Box 51111 Los Angeles, CA 90051 (213) 367-1022 <a href="mailto:james.mcdaniel@ladwp.com">james.mcdaniel@ladwp.com</a>
Metropolitan Water District of Southern California	Bill Hasencamp	Manager, Colorado River Resources 700 N. Alameda Avenue Los Angeles, CA 90012 (213) 217-6520 <a href="mailto:whasencamp@mwdh2o.com">whasencamp@mwdh2o.com</a>
Palo Verde Irrigation District	Ed Smith	General Manager 180 West 14 <sup>th</sup> Avenue Blythe, CA 92225 (760) 922-3144 <a href="mailto:ed.smith@pvid.org">ed.smith@pvid.org</a>
San Diego County Water Authority	Maureen Stapleton	General Manager 4677 Overland Avenue San Diego, CA 92123 (858) 522-6781 <a href="mailto:mstapleton@sdcwa.org">mstapleton@sdcwa.org</a>

Southern Nevada Water Authority	Bill Rinne	Director of Surface Water Resources 100 City Parkway, Suite 700 Las Vegas, NV 89193-9956 (702) 691-5255 <a href="mailto:Bill.rinne@snwa.com">Bill.rinne@snwa.com</a>
Upper Colorado River Commission	Don Ostler	Executive Director 355 South, 400 East Salt Lake City, UT 84111 (801) 531-1150 <a href="mailto:dostler@usbr.gov">dostler@usbr.gov</a>
Utah Division of Water Resources	Robert King	Chief, Interstate Streams 1594 West, North Temple Street Salt Lake City, UT 84114-6201 (801) 538-7259 <a href="mailto:robertking@utah.gov">robertking@utah.gov</a>
Wyoming State Engineer's Office	John Shields	Interstate Streams Engineer Herschler Building, 4 <sup>th</sup> East Cheyenne, WY 82002-0370 (307) 777-6151 <a href="mailto:jshiel@seo.wyo.gov">jshiel@seo.wyo.gov</a>

## 5. Reclamation Regional Contacts

The Colorado River Basin spans two Reclamation regions, the Upper Colorado Region and Lower Colorado Region. Both regions will be heavily involved in the proposed Basin Study. Primary contacts are listed below:

Region	Primary Contact	Contact Information
Lower Colorado Region	Terry Fulp	Deputy Regional Director Lower Colorado Region Boulder City, NV 89006 (702) 293-8411 <a href="mailto:tfulp@usbr.gov">tfulp@usbr.gov</a>
Upper Colorado Region	Dave Trueman	Director, Resources Management 125 South State Street Salt Lake City, UT 84138 (801) 524-3759 <a href="mailto:dtrueman@usbr.gov">dtrueman@usbr.gov</a>

## 6. Supporting Stakeholders

The following Colorado River Basin stakeholders have expressed their support of the proposed Basin Study (see Section C.6 and Attachment 1):

- Arizona Municipal Water Users Association
- Arizona Public Service Company, Four Corners Power Plant
- Black & Veatch Corporation
- Bloomfield Irrigation District
- City of Farmington, New Mexico
- City of Los Angeles, California, Department of Water and Power
- City of Phoenix, Arizona
- Colorado River District
- Denver Board of Water Commissioners
- Environmental Defense Fund
- Hammond Conservancy District
- Imperial Irrigation District
- LaPlata Conservancy District
- Lower Valley Water Users Cooperative Association
- Mohave County Water Authority
- North Gila Valley Irrigation District
- Northern Colorado Water Conservancy District
- Northern Colorado Water Conservancy District, Municipal Subdistrict
- PNM Resources
- San Juan Agricultural Water Users Association
- San Juan Water Commission
- San Diego County Water Authority
- Southern California Water Committee Incorporated
- State of Colorado, Department of Natural Resources, Division of Water Resources
- State of Nevada Office of the Governor
- The Jicarilla Apache Nation
- The Nature Conservancy
- The Navajo Nation, Department of Water Resources
- The Southwestern Water Conservation District
- The State of Arizona, Game and Fish Department
- Trout Unlimited
- Unit “B” Irrigation District
- United States Department of the Interior, Fish and Wildlife Service
- United States Fish and Wildlife Service, Arizona Ecological Services Field Office
- Water Utility Authority, Albuquerque Bernalillo County
- Wellton-Mohawk Irrigation and Drainage District
- Western Water Assessment
- Yuma Irrigation District

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## **B. Abstract**

Spanning parts of the seven states of Arizona, California, Colorado, New Mexico, Nevada, Utah, and Wyoming (Basin States), the Colorado River Basin (Basin) is one of the most critical sources of water in the West. The Colorado River and its tributaries provide water to over 30 million people for municipal use, supplies water used to irrigate nearly 4 million acres of land, and is also the lifeblood for at least 15 Native American tribes, 7 National Wildlife Refuges, 4 National Recreation Areas and 5 National Parks. Hydropower facilities along the Colorado River provide more than 4,200 MW of generating capacity, helping to meet the power needs of the West and offset the use of fossil fuels. The Colorado River is also vital to Mexico to meet both agricultural and municipal water needs.

Water supply and demand imbalances already exist in some geographic areas in the Basin and are projected to increase in both magnitude and spatial extent in the future. Basin-wide inflow has averaged about 16.4 million acre-feet (maf) annually over the past 100 years while water use has averaged 15.3 maf since 2000. Storage capacity of approximately four times the average inflow has provided the ability to meet most demands even over periods of sustained drought, such as is currently being experienced. However, paleoclimatic studies indicate that droughts of greater severity have occurred in the past and climate experts and scientists suggest that such droughts are likely to occur in the future. Furthermore, studies have postulated that the average yield of the Colorado River could be reduced by as much as 30 percent due to climate change. Meanwhile, the Basin States include some of the fastest growing urban and industrial areas in the United States. Demand for water for other uses including the environment, recreation, and Native American water rights settlements also continues to increase. Potential future increases in temperatures in the Basin, as have been observed in most of the Basin over the past 30 to 40 years, would increase evaporation-transpiration from vegetation, leading to further increases in water use and water lost from evaporation from reservoirs. Increasing demands coupled with decreasing supplies will exacerbate imbalances throughout the Basin.

The proposed Basin Study will: analyze water supply and demand imbalances throughout the study area through 2060; assess options for resolving such imbalances; and develop recommendations to address current and projected imbalances. Paramount to the Basin Study will be an assessment of the potential impacts of climate variability and climate change on both water supplies and demands.

A large amount of high-quality data and widely-accepted, credible models exist on the Basin for assessing current and future demands and water supplies, providing the framework for the quantitative assessment of consequences of the potential imbalances.

Reclamation's Upper and Lower Colorado Regions operate and maintain most of the major dams and the associated water delivery and hydropower facilities in the Basin and will be heavily involved in the proposed study. Non-Federal Cost-Share Partners include the water management authorities and irrigation and water districts in each of the Basin States. Broad support for the study exists among stakeholders throughout the Basin and their input and participation will be sought throughout the study. The study is proposed to be conducted over a period of two years beginning at the start of fiscal year 2010 and is estimated to cost \$2 million, with an equal cost-share of 50 percent by the non-Federal Cost-Share Partners.



## **C. Proposal**

### **1. The extent and consequences of existing or anticipated imbalances in water supply and demand**

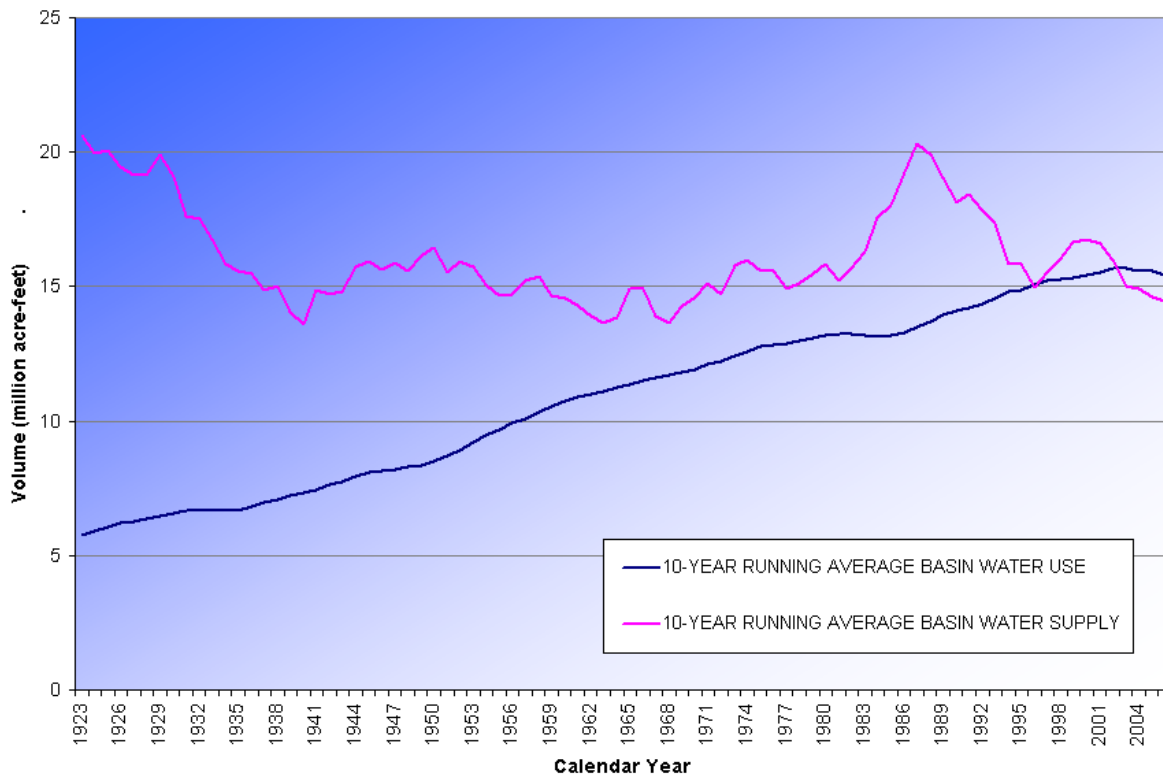
Current Imbalance between Supply and Demand. Today, more than 30 million people in the seven western states of Arizona, California, Nevada (Lower Division States) and Colorado, New Mexico, Utah and Wyoming (Upper Division States), collectively referred to as the Basin States, rely on the Colorado River and its tributaries to provide some, if not all, of their municipal water needs. That same water source irrigates nearly 4 million acres of land in the Colorado River Basin (Basin)—producing some 15 percent of the nation's crops and about 13 percent of its livestock, which combined generate more than \$3 billion a year in agricultural benefits. The Colorado River is also the lifeblood for at least 15 Native American tribes, 7 National Wildlife Refuges, 4 National Recreation Areas and 5 National Parks. Hydropower facilities along the Colorado River provide more than 4,200 MW of capacity providing vitally important electricity to help meet the power needs of the West and offset the use of fossil fuels. The Colorado River is also vital to Mexico. The river supports a thriving agricultural industry in the Mexicali Valley and provides municipal supplies for communities as far away as Tijuana.

Based on historical records from the last 100 years, the natural inflow into the Basin, which represents the Basin-wide water supply, has averaged about 16.4 million acre-feet (maf). This value is comprised of approximately 15.0 maf of natural flow into the Upper Basin and approximately 1.4 maf of natural flow into the Lower Basin. However, recent paleoclimatic studies have indicated that the long-term average natural flow at Lees Ferry may be closer to 14.7 maf. The period from 2000 through 2008 represents the lowest nine-year average natural flow at Lees Ferry in recorded history, averaging 11.7 maf per year. Although a drought of this magnitude is unprecedented in the modern history of the river, the same paleoclimatic studies show that droughts of this severity have occurred in the past.

Based on the inflows over the last century, the Colorado River is over-allocated. The Colorado River Compact of 1922 apportioned 7.5 maf each to the Upper and Lower Division States and the 1944 Treaty with Mexico allotted 1.5 maf to Mexico. Total Basin use for municipal, industrial, agricultural, tribal, recreational and environmental purposes in the United States and Mexico (including system losses such as reservoir evaporation) has averaged 15.3 maf since 2000 and the average Basin use is quickly approaching the average Basin water supply.

Figure 2 presents the 10-year running average of Colorado River water supply and water use over the past century. Since 2003, the 10-year average use has exceeded the 10-year average supply indicating that currently, an overall supply and demand imbalance exists.

**Figure 2. Colorado River Basin Historical Supply and Use**



Projected Imbalance between Supply and Demand. The Basin States include some of the fastest growing urban and industrial areas in the United States. Nevada, Arizona, and Utah are each ranked among the five fastest growing states in the country. The continued growth and sustainability of the communities and economies of metropolitan areas such as Albuquerque, Denver, Las Vegas, Los Angeles, Phoenix, Salt Lake City and San Diego is tied to future water availability from the Colorado River. Based on a compilation of population projections from various water districts throughout the Basin States, the population dependent on the Colorado River and its tributaries could grow by 25 million over the next 40 years, leading to an increase in water demand of as much as 5 maf annually. Demand for water for other uses including the environment, recreation, and Native American water rights settlements also continues to increase. Potential future increases in temperatures in the Basin, as have been observed in most of the Basin over the past 30 to 40 years, would increase evaporation-transpiration from vegetation, leading to further increases in water use and water lost from evaporation from reservoirs.

How climate change and variability might affect the Basin water supply has been the focus of many scientific studies. Climate experts suggest that droughts of even greater severity may occur in the future. The Southwest, including Nevada, Arizona, Utah, New Mexico and Wyoming which already rank as the five driest states in the nation, is expected to be even drier in the future. Recent studies have postulated that the average yield of the Colorado River could be

reduced by as much as 30 percent due to climate change, a reduction that would be catastrophic to the region without additional water supplies. Increasing demands coupled with decreasing supplies will certainly exacerbate imbalances throughout the Basin.

Consequences of Current and Projected Imbalances between Supply and Demand. Although a shortage to the Lower Division States (i.e., insufficient water available to satisfy annual consumptive use of 7.5 maf) has not been declared to date, some water agencies are experiencing shortages in water deliveries to their customers today. In California, drought conditions, along with increased regulatory restrictions, have caused the Metropolitan Water District of Southern California (Metropolitan) to ration water to its customers in 2009 for the first time in nearly 20 years. These water shortages increase costs to businesses already stressed by the current economic downturn. In addition, to help meet critical water supply needs in the urban areas, programs have been implemented to fallow land in agricultural areas and transfer the conserved water to urban areas. Although this has helped to meet the water needs of the urban areas, it has also reduced the food and fiber production from the region.

Absent the development of additional water supplies, the Upper Basin likely cannot realize full development of its Colorado River Compact apportionment with any level of certainty. Shortages in the Upper Basin are a reality today. Unlike the Lower Basin, which draws its supply from storage in Lake Mead, the Upper Basin is more dependent on annual stream flow to meet its needs. Over the past nine years, average annual Upper Basin water use has decreased by approximately 400,000 acre-feet (a decrease of approximately 11 percent) due in large part to water shortages caused by the current drought.

Currently, Lake Mead is at approximately 43 percent capacity, a water surface elevation of approximately 1,096 feet. If the current drought continues and water levels in Lake Mead fall below 1,025 feet, pursuant to the *Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead* (Interim Guidelines), the Central Arizona Project (CAP), which delivers Colorado River water to the Phoenix and Tucson metropolitan areas, would see its supply cut by nearly a third. Under the same circumstance, the Southern Nevada Water Authority's supplies, of which 90 percent come from the Colorado River and serve about 2 million people in the Las Vegas area, would be curtailed by 20,000 acre-feet annually, nearly 7 percent of Nevada's annual apportionment. If Lake Mead drops even further in the next few years, more dire consequences would result. Nevada would be unable to withdraw any water due to its current intake location if water levels in Lake Mead were to fall below 1,000 feet. If water levels continued to decline, the CAP could see its entire 1.5 maf supply disappear.

Summary. Supply and demand imbalances currently exist in the Basin and will grow in the future if the potential effects of climate change and variability are realized and demands continue to increase. A combination of options including conservation and reuse, development of local groundwater supplies, desalination, augmentation and the transfer of water from agricultural to urban uses will likely be needed. The proposed Basin Study will assess these and other options for resolving the projected imbalances in both the Upper and Lower Basins, and develop recommendations to sustain the environment, people and economy of this region.

## 2. The extent to which Federal involvement is needed due to the nature and complexity of the issues involved

The Colorado River Basin is one of the most highly regulated basins in the country. Federal involvement in the Basin dates back to the 1870s, when John Wesley Powell recommended using major river basins as administrative units in the western United States. Federal geographic and engineering investigations into the potential for irrigated agriculture throughout the Basin and ways and means to divert and convey river water to such areas were conducted over several decades in the late 1880s and early 1900s. These investigations ultimately led to the development of an extensive system of Federal dams and reservoirs, touching almost every aspect of water use in the Basin. Most of these facilities are operated and maintained by Reclamation's Upper and Lower Colorado Regions.

Issues surrounding the Colorado River and its resources are complex. Management of the Colorado River is multi-objective in order to:

- *provide water for agricultural and urban use*

Agricultural products from this region are marketed throughout the United States, and as noted in Section C.1, the fallowing of farmland to supply water to urban areas has reduced the production and distribution of these products.

- *generate hydropower*

Reductions in hydropower production stemming from reduced system water deliveries also affect other parts of the United States because shortfalls need to be made up by other power sources from those areas. Furthermore, the ability to generate hydropower at specific times and magnitudes is often constrained in order to minimize habitat disturbance downstream.

- *provide flood control*

Reservoirs are managed to provide flood control protection in addition to water supply storage. Balancing these different objectives is complex as sufficient reservoir space must be ensured while providing water in storage for future use.

- *provide recreation*

Maintaining recreational infrastructure is challenging and expensive as declining reservoir levels, particularly at Lake Powell and Lake Mead, make boat ramps unusable and often require re-location or abandonment of marinas.

- *provide water for environmental purposes, including enhancement of fish and wildlife habitat and the preservation and recovery of endangered species*

The Federal government is involved in several environmental compliance programs throughout the Basin including the Upper Colorado River Endangered Fish Recovery Program and the San Juan River Basin Recovery Implementation Program, the Glen Canyon Adaptive Management Program, and the Lower Colorado River Multi-Species Conservation Program. The management of these programs will be more difficult under additional pressures stemming from future water supply and demand imbalances.

Reclamation has developed and maintains models capable of representing the operational complexities described above and uses these models to project future river and reservoir conditions in the Basin. Specifically, the Colorado River Simulation System (CRSS) is used by Reclamation, the Basin States and water agencies in their planning processes regarding future water availability.

Additional Federal responsibility stems from the government's role in protecting Native American water rights along the river. These water rights are Native American assets held in trust by the Federal government and, as trustee, the United States is responsible for protecting these rights.

Reclamation (in cooperation with the U.S. Department of Agriculture and the Bureau of Land Management) is involved with the Colorado River Basin Salinity Control Program authorized by the 1974 Colorado River Basin Salinity Control Act. In consultation with water users and the Basin States through the Basin Salinity Control Forum, Reclamation implements projects to reduce the amount of salt in Colorado River water to meet water quality criteria and reduce salinity damages in the Basin. Meeting these criteria will become more difficult and salinity damages will be exacerbated as a result of reduced water supply.

In addition to the complexity of issues discussed above, the Colorado River is an international river. The United States Federal government has both a water quantity and water quality obligation to Mexico in accordance with the 1944 Treaty with Mexico and subsequent agreements between the two countries. In Mexico, the population and water demand continue to grow as in the rest of the region. A cooperative process that includes the International Boundary and Water Commission, Reclamation, the Basin States and Mexico is currently underway to explore conservation opportunities, improvements to system operations, and other water efficiency improvements.

In summary, Reclamation's operation and management of the facilities in the Basin involves a complex interaction among stakeholders that include cities, districts, water users, tribes, the Basin States, Mexico and other Federal agencies. The proposed Basin Study will play an important role in furthering the continued collaboration among these groups that is essential to successfully addressing the complex issues facing the Basin.

### **3. The existence and quality of data and models available and applicable to the proposed study**

High-quality data and widely-accepted, credible models exist for analyzing existing and projected water supplies and demands in the Basin and the potential effects on supply and demand due to climate change and variability. Consequently, no major efforts regarding data collection or model development will be required for the proposed Basin Study.

The tables below describe the data and models in terms of type, source, availability and their interaction. All data and models listed below are high quality and undergo a rigorous peer-review process annually or more often as updates or modification occur.

**Table 1. Summary of Available Water Supply Data Relevant to the Proposed Basin Study**

<i>Data Type</i>	<i>Source</i>	<i>Availability/Description</i>	<i>Interaction/Applicability</i>
<b>Analysis of Existing Water Supplies</b>			
Historic Streamflow	USGS	Daily for all streamflow gauges in the Basin	Used to compute natural flow
	Reclamation	Monthly natural flow for 29 inflow points Basin-wide from 1906-2007	Used as base data to develop streamflow projections to drive planning model
	Reclamation	Monthly paleo-reconstructed natural flow into Lake Powell from 762-2005	
Historic Precipitation & Temperature	NOAA	Three daily gridded data sets from about 1950-1999; also data from state climatologists	Used to bias-correct climate projections and calibrate hydrologic models that generate streamflow
Snotel & Weather Climate Stations	NRCS, NOAA, NDMC	Available at numerous sites in the Basin	Used for streamflow forecasting and calibration of hydrologic models
<b>Projections of Future Water Supplies</b>			
Downscaled Climate Projections	Reclamation/ SCU/LLNL	Daily downscaled and bias-corrected climate driven precipitation and temperature projections to 2099	Used to drive hydrologic models that generate streamflow
	NOAA		
Streamflow Projections	Reclamation	Basin-wide climate-based projections under development in an on-going study due Dec 2009	Used in combination with demand projections to drive planning model
	Reclamation	Basin-wide paleo-based projections	

Note: LLNL = Lawrence Livermore National Laboratory; LCRAS = Lower Colorado River Accounting System; NDMC = National Drought Mitigation Center; NOAA = National Oceanic and Atmospheric Administration; NRCS = Natural Resources Conservation Service; SCU = Santa Clara University; SWSI = Statewide Water Supply Initiative; UCRC = Upper Colorado River Commission; USGS = U.S. Geological Survey

**Table 2. Summary of Available Water Demand Data Relevant to the Proposed Basin Study**

<i>Data Type</i>	<i>Source</i>	<i>Availability/Description</i>	<i>Interaction/Applicability</i>
<b>Analysis of Existing Water Demands</b>			
Historic Consumptive Use	Reclamation	Basin-wide water use reports available from 1971-2006	Used to develop demand projections and compute natural flows
	By State	e.g. CO's SWSI covers current level of consumptive use state-wide for all sectors	
Crop Irrigation Requirements	Reclamation By State	LCRAS e.g. CO for the San Juan Basin	Used to develop demand projections and compute natural flows
Population	By State	Current population estimates available through U.S. Census Bureau or state demographers	Used to develop demand projections
<b>Projections of Future Water Demands</b>			
Demand Projections	UCRC	Demand projections for Upper Basin to 2060	Used in combination with streamflow projections to drive planning model
	By State	e.g. CO state-wide by type of water-use sector through 2050	
Population Projections	By State	e.g. as prepared by state demographers	Used to develop demand projections primarily for municipal uses

Note: CO = Colorado; LCRAS = Lower Colorado River Accounting System; SWSI = Statewide Water Supply Initiative; UCRC = Upper Colorado River Commission

Table 3 describes the relevant models available for the proposed Basin Study. The interaction with the data listed above is also described.

**Table 3. Summary of Available Models Relevant to the Proposed Basin Study**

<i>Model Type</i>	<i>Source</i>	<i>Availability/Description</i>	<i>Interaction/Applicability</i>
Planning	Reclamation	CRSS is a basin-wide planning model and widely accepted, used for hydrologic analysis in recent Environmental Impact Statement	Project future water supply conditions given demand and streamflow projections, CRSS will be used to analyze the operational, environmental and recreational impacts of climate change and variability
Shortage Allocation	Reclamation	Allocates a defined amount of shortage to specific users in AZ, CA and NV	Used to distribute shortages to individual users to assess consequences
Hydrologic	University of Washington	VIC solves full water and energy balances; currently being used in an on-going Reclamation study	Used to generate streamflow based on climate driven projections of precipitation and temperature

Note: AZ = Arizona, CA = California, CRSS = Colorado River Simulation System; NV = Nevada; VIC = Variable Infiltration Capacity

In addition, there are many other state or agency models that will be provided by the non-Federal Cost-Share Partners as appropriate to assess supply and demand relationships and quantify imbalances at specific locations with the Basin, e.g. Colorado's Colorado River Decision Support System and Metropolitan's Integrated Resources Planning Model.

Studies dating back decades identified potential supply and demand imbalances in the Basin and some proposed further investigations of these imbalances including identifying options for additional water supplies. These studies include:

- *Upper Colorado Region Comprehensive Framework Study*; Upper Region State-Federal Inter-Agency Group / Pacific Southwest Inter-Agency Committee / Water Resources Council; June 1971
- *Critical Water Problems Facing the Eleven Western States*; Reclamation; April 1975
- *Colorado River Basin Water Problems: How To Reduce Their Impact*; A Report to Congress by the GAO; CED-79-11; May 1979
- *Colorado River Basin Water Management: Evaluating and Adjusting to Hydroclimatic Variability*; National Research Council; 2007
- *Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead Final Environmental Impact Statement*; Reclamation; November 2007 (Shortage EIS)
- *Study of Long-Term Augmentation Options for the Water Supply of the Colorado River System*; Colorado River Water Consultants; March 2008

#### **4. The strength of any nexus between the Basin Study and a Reclamation project or activity**

The proposed Basin Study is strongly aligned with Reclamation projects in both the Upper and Lower Colorado Regions by virtue of the fact that the United States owns and, through the Secretary and Reclamation, operates the major dams and water delivery facilities throughout the Basin. The Secretary is also vested with the responsibility of managing the mainstream waters of the Lower Colorado River. These responsibilities are carried out consistent with the Law of the River, a longstanding and complex body of federal statutes, court decrees, contracts, regulations and other legal agreements regarding the allocation, appropriation, development, exportation, and management of the waters of the Basin.

Included in the Law of the River are numerous laws authorizing Reclamation projects that will be considered in the proposed Basin Study including the:

- Boulder Canyon Project Act of 1928 which authorized construction of Hoover Dam and the All-American Canal, required that Colorado River water users in the Lower Basin have a contract with the Secretary, and established the responsibilities of the Secretary to



direct, manage, and coordinate the operation of Colorado River dams, and related works in the Lower Basin

- Colorado River Storage Project Act of 1956 which authorized a comprehensive water development plan for the Upper Basin that included the construction of Glen Canyon Dam, Flaming Gorge Dam, Navajo Dam, Curecanti Project (now called the Aspinall Unit, consisting of Blue Mesa, Morrow Point, and Crystal dams) and other facilities
- Colorado River Basin Project Act of 1968 which authorized construction of a number of water development projects throughout the Basin, including the CAP, required the Secretary to develop long-range operating criteria for the major reservoirs and to issue an Annual Operating Plan for mainstream reservoirs, and directed the Secretary to conduct reconnaissance investigations for the purpose of developing a general plan to meet the future water needs of the western United States

Reclamation's Upper and Lower Colorado Regions administer the operation and maintenance of these and other projects and issue annual operating plans in close coordination with the Basin States and other stakeholders.

A key element of the proposed Basin Study will be projections of water supplies and demands throughout the Basin, particularly in light of the potential impacts of drought and climate change and variability. This information will be used to determine how the existing water and power infrastructure and operations of Reclamation projects will perform under these future scenarios. For example, the two largest reservoirs in the Basin, Lake Powell and Lake Mead provide over 50 maf of storage capacity, or about 83 percent of the total storage capacity in the Basin. The annual operation of these reservoirs is currently specified through 2026 under the Interim Guidelines. During the interim period, operation under the Interim Guidelines will provide the opportunity to gain valuable operating experience for the future coordinated management of Lake Powell and Lake Mead. That experience, coupled with options for resolving supply and demand imbalances, will improve the basis for making future operational decisions.

## **5. The level of Stakeholders interest in and support for the Basin Study**

Stakeholders throughout the Basin recognize the need to address current and future water supply and demand imbalances. Interest is broad and includes: agricultural users concerned with preserving the agricultural economy and their water rights; environmental groups concerned about the preservation of aquatic and riparian habitat; purveyors of municipal and industrial water concerned about providing adequate and reliable water resources for customers in their service areas; power users concerned about hydropower generating capacity and the availability of Colorado River water for thermal power generation; and Native American tribes and communities concerned about the preservation of their water rights. Rising concerns about the possibility of severe and persistent drought, climate change and variability, continued growth of urban areas using Colorado River water, and increased water demands for environmental and recreational purposes add urgency to stakeholder interest in Basin-wide planning. Competition and conflict over Colorado River water is occurring now and is expected to increase as the gap between supply and demand widens.

For many years, the Cost-Share Partners and other stakeholders within the Basin have been working to plan and implement actions to improve management and use of water throughout the Basin as evidenced by the recent public process that led to the development of the Interim Guidelines. There is broad support for the proposed Basin Study among Colorado River water users and other stakeholders throughout the Basin. Attachment 1 contains the letters of support from various entities that were received as of June 26, 2009. Additional letters of support are anticipated and will be forwarded upon receipt.

A more inclusive list of potentially interested stakeholders will be prepared based on interest in other recent planning efforts in the Basin and an organization plan will be developed for working with and allowing input from these and other interested parties throughout the study. All input received will be carefully considered and incorporated in the study as appropriate. The plan will include meetings where stakeholders will be provided information about the study and be invited and encouraged to provide input. Reclamation will also create a website to keep stakeholders informed on the status of the Basin Study and provide opportunity for their input. Working groups may also be formed to assist in different aspects of the study.

#### **6. Whether the non-Federal cost-share contribution exceeds the required 50 percent**

The non-Federal cost-share contribution, consisting of both direct (cash) and in-kind services, will match the Federal cost-share contribution (a 50:50 percent split) of the proposed Basin Study cost. Attachment 2 contains letters from the non-Federal Cost-Share Partners.

## **D. Study Outline and Schedule**

### **1. Study Purpose**

The purpose of the proposed Basin Study is to analyze water supply and demand imbalances throughout the study area through 2060, to assess options for resolving such imbalances, and to develop recommendations that will address current and projected imbalances. Options to resolve such imbalances in both the Upper and Lower Basins will be evaluated. Paramount to the Basin Study will be an assessment of the potential impacts of climate variability and climate change on both water supplies and demands.

### **2. Cost-Share Partners**

Reclamation and the non-Federal Cost-Share Partners will develop a Memorandum of Agreement (MOA) and a Plan of Study, clearly defining the scope and goals of the study, cost-sharing, study phases and specific study tasks, and the roles and responsibilities of all parties. A management team, project manager(s), and appropriate staff and participants will also be identified.

### **3. Study Outline**

Table 4 provides an outline of the proposed Basin Study, briefly describing the major tasks envisioned and providing an estimated cost for each.

**Table 4. Summary of Tasks and Costs Associated with the Proposed Basin Study**

<b>Proposed Basin Study Tasks</b>	<b>Estimated Cost</b>
<b>1. Water Supply Assessment.</b> Assess the quantity and location of existing and future water supplies throughout the Basin, including the potential effects of climate variability and climate change.	\$250,000
<b>2. Water Demand Assessment.</b> Assess the quantity and location of existing and future water demands, including the potential effects of climate variability and climate change.	\$350,000
<b>3. System Reliability Analysis.</b> Use CRSS and other models as appropriate to analyze supply and demand relationships and quantify imbalances in specific locations within the study area. Quantify current and potential future locations, magnitudes, probabilities, and timing of shortfalls.	\$400,000
<b>4. Development and Evaluation of Opportunities for Balancing Supply and Demand.</b> Formulate and evaluate potential strategies to balance supply and demand, including better management of existing supplies and development of new supplies (i.e., brackish water desalination; water conservation, reclamation, and reuse; and conjunctive use of surface and groundwater), augmentation within the study area (e.g., ocean water desalting, weather modification), and augmentation from outside the study area (e.g., importation through mutually cooperative ventures with entities outside the study area). Evaluate effectiveness of strategies in addressing imbalance using CRSS and other models as appropriate.	\$475,000
<b>5. Findings and Recommendations.</b> Formulate findings and recommendations, including analyses for prioritized conservation measures, operational improvements, and augmentation measures within and outside the study area. Prepare a study report documenting technical details.	\$250,000
<b>6. Stakeholder Involvement.</b> Cultivate stakeholder participation and input throughout the study. This will include conducting meetings with stakeholders and the general public at key stages of the study as shown in the study schedule, and providing up-to-date information and links to pertinent documents on Reclamation’s public website.	\$75,000
<b>7. Study Management.</b> Coordinate study activities performed by participants, track costs, and write progress reports during the study. Develop a detailed Plan of Study and MOA to clearly define the study scope, tasks, organization, budget and cost-share.	\$200,000
<b>Total Cost</b>	<b>\$2,000,000</b>

#### 4. Study Schedule

The Cost-Share Partners propose to conduct the Basin Study over a period of two years beginning at the start of fiscal year 2010. The proposed Basin Study schedule is provided in Figure 3. Major Basin Study milestones are listed in Table 5.

Figure 3. Proposed Basin Study Schedule

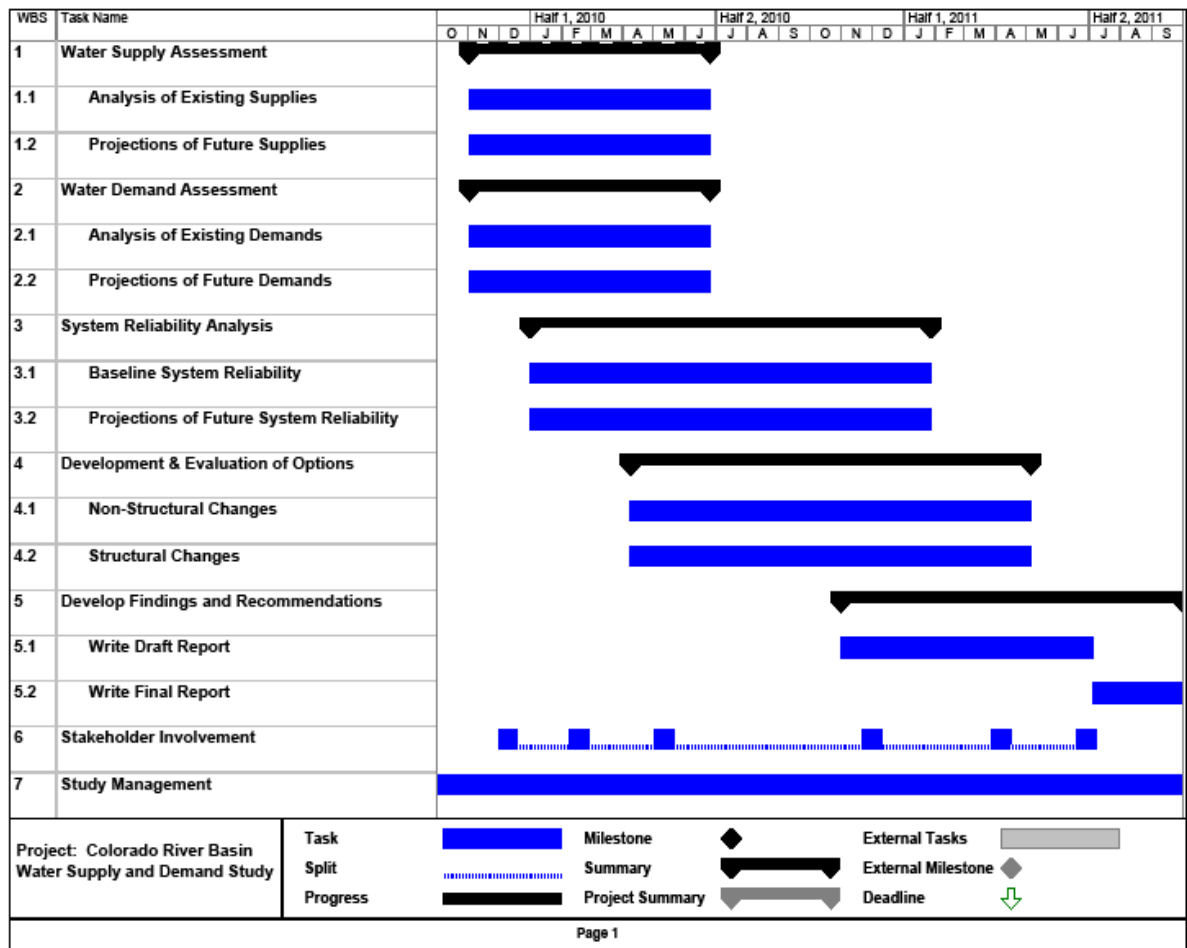


Table 5. Proposed Basin Study Milestones

Milestone	Deliverable Description
June 2010	Report describing findings from current and future water supply assessment
June 2010	Report describing findings from current and future water demand assessment
January 2011	Report describing findings from system reliability analysis
May 2011	Report describing findings of options analysis
July 2011	Draft Basin Study report and appendices available for review
September 2011	Final Basin Study report and appendices complete

## Attachment 1

### Letter of Support from Stakeholders

This Attachment contains the letters of support from various entities that were received as of June 26, 2009. Additional letters of support are anticipated and will be forwarded upon receipt.

# arizona municipal water users association

4041 north central avenue • suite 900 • phoenix, arizona 85012 • phone (602) 248-8482 • fax (602) 248-8423

June 23, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

Subject: Letter of Support for the Proposed Colorado River Basin Water Supply Study

Dear Ms. Gray & Mr. Walkoviak:

This letter expresses the Arizona Municipal Water Users Association's (AMWUA) support for the proposed Colorado River Basin Water Supply Study under the Basin Studies Program with the Bureau of Reclamation. AMWUA members include the cities of Avondale, Chandler, Glendale, Goodyear, Mesa, Peoria, Phoenix, Scottsdale and Tempe and the Town of Gilbert. The intent of the study includes reviewing and further evaluating the current and projected water supply and demand throughout the Colorado River Basin and its service areas. This information would be used to develop strategies for augmentation opportunities to meet future water demands.

It is our understanding that throughout the study, the cost-share partners would make information available to basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may agree to form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply Study as it progresses. Thank you for your consideration.

Sincerely,



Steven L. Olson  
Executive Director

cc: Director Herb Guenther  
Arizona Department of Water Resources

A voluntary, non-profit corporation established by cities in the urban area  
of Maricopa County for the development of an urban water policy.



*A subsidiary of Pinnacle West Capital Corporation*

David L. Saliba  
Plant Manager  
Four Corners Power Plant

Tel. 505-598-8200  
Fax 505-598-8237  
e-mail dsaliba@apsc.com

Mail Station 4900  
PO Box 355  
Fruitland, NM 87416-0355

June 16, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

Subject: Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study

Dear Ms. Gray & Mr. Walkoviak:

This letter expresses our support for the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and evaluating the current and projected water supplies and demands in the Colorado River Basin and its service areas and to identify potential opportunities for addressing supply/demand imbalances.

It is our understanding that throughout the study, the Federal and non-federal cost-share partners would make information available to Basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may also form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply and Demand Study as it progresses. Thank you for your consideration.

Sincerely,

A handwritten signature in black ink that reads 'David L. Saliba'. The signature is written in a cursive, flowing style.

David L. Saliba  
Plant Manager, Four Corners Power Plant





**BLACK & VEATCH**  
Building a world of difference.®

June 12, 2009

Ms. Lorri Gray  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
P.O. Box 61470  
Boulder City, Nevada 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 South State Street, Room 6107  
Salt Lake City, Utah 84138-1102

Re: *Colorado River Basin Water Supply and Demand Study*

Dear Ms. Gray and Mr. Walkoviak:

This letter conveys my strong support for the Study Proposal submitted by the Seven Colorado River Basin States to carry out a joint Colorado River Basin Water Supply and Demand study along with the Bureau of Reclamation under the Basin Study Program.

The basis of this support comes from my 36 years of professional experience in conducting water supply studies throughout the world. This has included extensive evaluations of water supply conditions and alternative solutions in major river basins of the United States, as well as major systems in the United Kingdom, Australia, Singapore, Hong Kong, Canada, Peru and Puerto Rico. In my opinion, no river basin in the world faces the combination of water supply challenges posed in the Colorado River Basin.

The basin supplies water and energy for 30 million people and provides water for irrigating three million acres while maintaining unique habitat values and respecting international water needs. The challenge is to support the critical balance between water supply and demand, all the while ensuring the quantity and quality of this vital resource for generations to come.

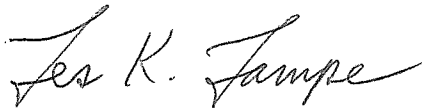
In recognition of the increasing stress exerted on the Colorado River system, the Seven Basin States and various water-related agencies have demonstrated a commitment to developing collaborative solutions to this water supply crisis. One notable example of this collaboration is their joint effort to produce the recent "Study of Long-Term Augmentation Options for the Water Supply of the Colorado River System."

The States and water supply agencies within the States are now moving forward to implement priority options identified in the study. They are also aggressively moving forward to implement water conservation and reuse measures that ensure the available water is used as efficiently as possible. Even after these conservation and reuse measures are implemented, there will not be enough water to meet all of the needs within the basin.

The Basin Study Program offers the opportunity for the Seven Basin States to work cooperatively with the Bureau of Reclamation and other Federal entities to enhance the water security of the region. A cooperative water supply planning effort among Federal, State, regional and local interests – as envisioned by the Basin Study Program – is absolutely critical for the vitality of the basin.

If you have any questions about my endorsement of the proposal from the Seven Basin States for the Colorado River Basin Water Supply and Demand Study, please feel free to call me at 913-219-3933. Thank you for the opportunity to offer my comments on this most important issue.

Very truly yours,

A handwritten signature in cursive script that reads "Les K. Lampe". The signature is written in black ink and is positioned above the typed name and title.

Dr. Les K. Lampe, P.E.  
Vice President/Global Water Resources Practice and Technology Leader  
Black & Veatch Corporation

**ORIGINAL**

BLOOMFIELD IRRIGATION DISTRICT  
PO Box 606  
Bloomfield, New Mexico 87413

June 23, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

Subject: Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study

Dear Ms. Gray & Mr. Walkoviak:

This letter expresses our support for the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and evaluating the current and projected water supplies and demands in the Colorado River Basin and its service areas and to identify potential opportunities for addressing supply/demand imbalances.

It is our understanding that throughout the study, the Federal and non-federal cost-share partners would make information available to Basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may also form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply and Demand Study as it progresses. Thank you for your consideration.

Sincerely,

*Carroll Crawford - Chairman  
Bloomfield Irrigation District*

Carroll Crawford  
Chairman

*Reference: Signed June 22, 2009 "Draft" letter,*

UTAH | COLO.

ARIZ. | N.M.

**CITY OF FARMINGTON**

800 Municipal Drive  
Farmington, NM 87401-2663  
(505) 599-1102  
Fax: (505) 599-8430  
www.farmington.org

June 16, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

Subject: Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study

Dear Ms. Gray & Mr. Walkoviak:

The City of Farmington is very interested in the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and evaluating the current and projected water supplies and demands in the Colorado River Basin and its service areas and to identify potential opportunities for addressing supply/demand imbalances.

It is our understanding that throughout the study, the Federal and non-federal cost-share partners would make information available to Basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may also form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

As a stakeholder, we request an opportunity to provide input, review and comment on the Colorado River Basin Water Supply and Demand Study as it progresses. Thank you for your consideration.

Sincerely,

  
Robert G. Campbell  
Assistant City Manager

xc: Amber Cunningham, Bureau of Reclamation  
John Whipple, Interstate Streams Commission  
Jay Burnham, City Attorney, City of Farmington

**OFFICE of the CITY MANAGER**

Department of Water and Power



the City of Los Angeles

ANTONIO R. VILLARAIGOSA  
*Mayor*

Commission  
LEE KANON ALPERT, *President*  
EDITH RAMIREZ, *Vice President*  
WALLY KNOX  
FORESCEE HOGAN-ROWLES  
JONATHAN PARFREY  
BARBARA E. MOSCHOS, *Secretary*

H. DAVID NAHAI,  
*Chief Executive Officer and General Manager*

June 12, 2009

Ms. Lori Gray-Lee  
Regional Director  
U.S. Department of the Interior  
Bureau of Reclamation  
Lower Colorado Region  
P.O. Box 61470  
Boulder City, NV 89006-1470

Subject: Letter of Support for Proposed Colorado River Basin Water Supply  
and Demand Study

Dear Ms. Gray-Lee:

This letter expresses our support for the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and evaluating the current and projected water supplies and demands in the Colorado River Basin and its service areas and to identify potential opportunities for addressing supply/demand imbalances.

It is our understanding that throughout the study, the Federal and non-federal cost-share partners would make information available to Basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin study as appropriate. The cost-share partners may also form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

As a stakeholder, the Los Angeles Department of Water and Power requests an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply and Demand Study as it progresses. Thank you for your consideration.

If you have any questions, please contact me at (213) 367-1022, or have a member of your staff contact Mr. Thomas M. Erb, Director of Water Resources, at (213) 367-0873.

Sincerely,

*for*  
James B. McDaniel  
Senior Assistant General Manager  
Water System

MFH:lsf

c: Mr. Thomas M. Erb  
Mr. Gerald R. Zimmerman

**Water and Power Conservation ... a way of life**

111 North Hope Street, Los Angeles, California 90012-2607 Mailing address: Box 51111, Los Angeles 90051-5700  
Telephone: (213) 367-4211 Cable address: DEWAPOLA



Department of Water and Power



the City of Los Angeles

ANTONIO R. VILLARAIGOSA  
*Mayor*

Commission  
LEE KANON ALPERT, *President*  
EDITH RAMIREZ, *Vice President*  
WALLY KNOX  
FORESCEE HOGAN-ROWLES  
JONATHAN PARFREY  
BARBARA E. MOSCHOS, *Secretary*

H. DAVID NAHAI,  
*Chief Executive Officer and General Manager*

June 12, 2009

Mr. Larry Walkoviak  
Regional Director  
U.S. Department of the Interior  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

Subject: Letter of Support for Proposed Colorado River Basin Water Supply  
and Demand Study

Dear Mr. Walkoviak:

This letter expresses our support for the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and evaluating the current and projected water supplies and demands in the Colorado River Basin and its service areas and to identify potential opportunities for addressing supply/demand imbalances.

It is our understanding that throughout the study, the Federal and non-federal cost-share partners would make information available to Basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin study as appropriate. The cost-share partners may also form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

As a stakeholder, the Los Angeles Department of Water and Power requests an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply and Demand Study as it progresses. Thank you for your consideration.

If you have any questions, please contact me at (213) 367-1022, or have a member of your staff contact Mr. Thomas M. Erb, Director of Water Resources, at (213) 367-0873.

Sincerely,

A handwritten signature in cursive script that reads "James B. McDaniel".

for  
James B. McDaniel  
Senior Assistant General Manager  
Water System

MFH:lsf

c: Mr. Thomas M. Erb  
Mr. Gerald R. Zimmerman

**Water and Power Conservation ... a way of life**

111 North Hope Street, Los Angeles, California 90012-2607 Mailing address: Box 51111, Los Angeles 90051-5700  
Telephone: (213) 367-4211 Cable address: DEWAPOLA





## City of Phoenix

OFFICE OF THE CITY MANAGER

June 17, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

Subject: Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study

Dear Ms. Gray & Mr. Walkoviak:

This letter expresses our support for the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and evaluating the current and projected water supplies and demands in the Colorado River Basin and its service areas and to identify potential opportunities for addressing supply/demand imbalances.

It is our understanding that throughout the study, the Federal and non-federal cost-share partners would make information available to Basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may also form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply and Demand Study as it progresses. Thank you for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Buschatzke".

Tom Buschatzke  
Water Advisor



# Colorado River District

*Protecting Western Colorado Water Since 1937*

June 18, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

***Subject: Basin States Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study***

Dear Ms. Gray-Lee & Mr. Walkoviak:

We are providing this letter in support of the Colorado River Water Supply and Demand Study proposal offered by the 7-Colorado River Basin States. As you may recall, the Seven Colorado River Basin States expressed interest in participating in the Bureau of Reclamation (Reclamation) Basin Studies Program in a letter dated February 10, 2009. The 7-States have been working collaboratively with representatives from your Upper and Lower Colorado River Regions to prepare a study proposal since being informed that the 7-State study concept was selected by Reclamation for further development.

We believe the 7-Colorado River Basin States proposed study is critical to determining existing and future supply and demand within the Colorado River Basin and adjacent service areas. In addition, the study is necessary to develop options and strategies to meet future water demands, particularly when faced with the uncertainties surrounding global climate change. This letter expresses our support for the 7-State study proposal as we currently understand it and are hopeful that the proposed will continue to be developed along these lines.

As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply and Demand Study as it progresses. Thank you for your consideration.



**Page 2 of 2**  
Basin States Letter of Support  
June 18, 2009

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Sincerely,

A handwritten signature in black ink, appearing to be "R. Eric Kuhn". To the right of the signature, the letters "FOR" are written in a similar handwritten style.

R. Eric Kuhn  
General Manager



June 19, 2009

## Denver Board of Water Commissioners

Penfield W. Tate, III, President  
John R. Lucero, 1st Vice President  
Thomas A. Gougeon  
Paula Herzmark

Hamlet J. Barry, Manager

1600 W 12th Avenue  
Denver, CO 80204-3412  
Phone: 303-628-6000  
Fax: 303-628-6509  
chips.barry@denverwater.org  
www.denverwater.org

Ms. Lorri Gray-Lee  
Regional Director  
U.S. Bureau of Reclamation  
Lower Colorado Region  
P.O. Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
U.S. Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

***Subject: Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study***

Dear Ms. Gray and Mr. Walkoviak:

Denver Water supports the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation.

The intent of the study is to review and evaluate the current and projected water supplies and demands in the Colorado River Basin and its service areas and to identify potential opportunities for addressing supply and demand imbalances. We believe the information collected and developed by the study will be valuable to the seven states' efforts to plan for the water needs of the basin and will be of benefit to the water providers in those states, including Denver Water.

We request that Reclamation coordinate the proposed study efforts with studies that have been conducted in the basin and make use of existing information and methodologies, including studies of the potential impacts from climate change. Because of the lack of agreement among model projections of the impacts of climate change, we request that the study focus on indentifying ranges of potential impacts rather than attempting to assign probabilities to climatic uncertainties. For the water demand assessment, we request that the demand projections be based on scientific methods rather than on desired outcomes, or surveys of projected "need".

As a stakeholder in the process, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply and Demand Study as it progresses. Thank you for your consideration.

Sincerely,

H. J. Barry  
Manager

HJB:MW:410

---

CONSERVE

**HAMMOND CONSERVANCY DISTRICT**

**790 CR 4990**

**Bloomfield, NM 87413**

**505-632-3043**

June 18, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

**Subject: Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study**

Dear Ms. Gray & Mr. Walkoviak:

This letter expresses our support for the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and evaluating the current and projected water supplies and demands in the Colorado River Basin and its service areas and to identify potential opportunities for addressing supply/demand imbalances.

It is our understanding that throughout the study, the Federal and non-federal cost-share partners would make information available to Basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may also form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

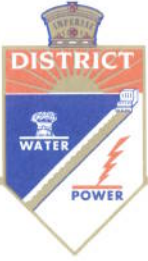
As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply and Demand Study as it progresses. Thank you for your consideration.

Sincerely,



Teresa Lane, Manager  
Hammond Conservancy District





# IMPERIAL IRRIGATION DISTRICT

OPERATING HEADQUARTERS • P. O. BOX 937 • IMPERIAL, CALIFORNIA 92251

WD

June 23, 2009

Ms. Lorri Gray-Lee  
Regional Director  
U.S. Bureau of Reclamation  
Lower Colorado Region  
P.O. Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
U.S. Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84238-1102

Subject: Letter of Support for Proposed Colorado River Basin Water Supply  
and Demand Study

Dear Ms. Gray-Lee and Mr. Walkoviak:

This letter expresses our support for the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and evaluating the current and projected water supplies and demands in the Colorado River Basin and its service areas and to identify potential opportunities for addressing supply/demand imbalances.

It is our understanding that throughout the study, the Federal and non-federal cost-share partners would make information available to Basin stake holders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may also form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply and Demand Study as it progresses. Thank you for your consideration.

Sincerely,

BRIAN J. BRADY  
General Manager

MLK/ceb

cc: Gerald Zimmerman

LaPlata Conservancy District  
1592 NM 170  
La Plata, NM 87418  
June 16, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

Subject: Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study

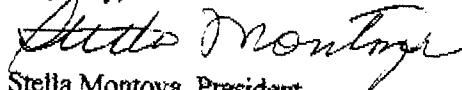
Dear Ms. Gray & Mr. Walkoviak:

This letter expresses our support for the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and evaluating the current and projected water supplies and demands in the Colorado River Basin and its service areas and to identify potential opportunities for addressing supply/demand imbalances.

It is our understanding that throughout the study, the Federal and non-federal cost-share partners would make information available to Basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may also form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water supply and Demand Study as it progresses. Thank you for your consideration.

Sincerely,



Stella Montoya, President  
La Plata Conservancy District

**LOWER VALLEY WATER USERS COOPERATIVE ASSOCIATION**

**PO BOX 193**

**KIRTLAND, NEW MEXICO 87417 OFFICE 505-598-5585 FAX 505-598-9111**

AN ORIGINAL OBJECT COPY		
REQUIRE		
DATE	ISSUE	CODE
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CLASSIFICATION		
PROJECT		
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FOLDER ID		
KEYWORD		

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

**Subject: Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study**

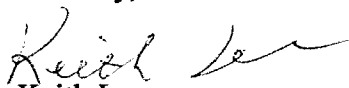
Dear Ms. Gray & Mr. Walkoviak:

This letter expresses our support for the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and evaluating the current and projected water supplies and demands in the Colorado River Basin and its service areas and to identify potential opportunities for addressing supply/demand imbalances.

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As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water supply and Demand Study as it progresses. Thank you for your consideration.

Sincerely,

  
Keith Lee  
Manager

**MOHAVE COUNTY WATER AUTHORITY**

**P.O. BOX 2419**

**Phone: (928) 754-3137**

**BULLHEAD CITY, AZ 86430**

**Fax: (928) 754-3140**

June 10, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

DATE	06/11/09
TIME	
LOCATION	
PROJECT	
PACKAGE NO.	
FORM NO.	
REVISED	
REVISIONS	

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Copy to BCOO-1001

Subject: Letter of Support for the Proposed Colorado River Basin Water Supply Study

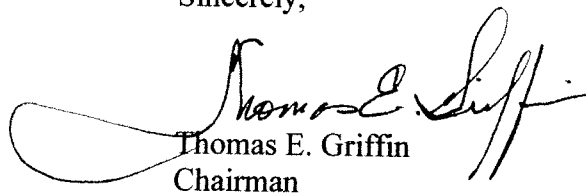
Dear Ms. Gray & Mr. Walkoviak:

This letter expresses our support for the proposed Colorado River Basin Water Supply Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and further evaluating the current and projected water supply and demand throughout the Colorado River Basin and its service areas. This information would be used to develop strategies for augmentation opportunities to meet future water demands.

It is our understanding that throughout the study, the cost-share partners would make information available to basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may agree to form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply Study as it progresses. Thank you for your consideration.

Sincerely,

  
Thomas E. Griffin  
Chairman

TEG:elb

cc: Maureen George

## **NORTH GILA VALLEY IRRIGATION DISTRICT**

1405 W. 16<sup>th</sup> Street, Ste. A, Yuma, Arizona 85364  
(928) 343-9447 Fax: (928) 343-9483

June 23, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
P. O. Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S State Street, Room 6107  
Salt Lake City, UT 84138-1102

**Re: Letter of Support for the Proposed Colorado River Basin Water Supply Study**

Dear Ms. Gray and Mr. Walkoviak:

This letter expresses our support for the proposed Colorado River Basin Water Supply Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and further evaluating the current and projected water supply and demand throughout the Colorado River Basin and its service areas. This information would be used to develop strategies for augmentation opportunities to meet future water demands.

It is our understanding that throughout the study, the cost-share partners would make information available to basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may agree to form working groups to conduct different aspects of the studies with the involvement of the stakeholders.



Ms. Lorri Gray-Lee  
Mr. Larry Walkoviak  
June 23, 2009  
Page two

As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply Study as it progresses.

Thank you for your consideration.

Sincerely,

**North Gila Irrigation and Drainage District**

A handwritten signature in black ink that reads "Frank M. Ferguson III". The signature is written in a cursive style with a large, sweeping flourish at the end.

Frank M. Ferguson III  
President



June 22, 2009

Ms. Lorri Gray-Lee  
Regional Director  
U.S. Bureau of Reclamation  
Lower Colorado Region  
P.O. Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
U.S. Bureau of Reclamation  
Upper Colorado Region  
125 South State Street, Room 6107  
Salt Lake City, UT 84138-1102

Dear Ms. Gray-Lee & Mr. Walkoviak:

Subject: Basin States Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study

We are providing this letter in support of the Colorado River Water Supply and Demand Study proposal offered by the 7-Colorado River Basin States. As you may recall, the Seven Colorado River Basin States expressed interest in participating in the U.S. Bureau of Reclamation (Reclamation) Basin Studies Program in a letter dated February 10, 2009. The 7-States have been working collaboratively with representatives from your Upper and Lower Colorado River regions to prepare a study proposal since being informed that the 7-State study concept was selected by Reclamation for further development.

We believe the 7-Colorado River Basin States proposed study is critical to determining existing and future supply and demand within the Colorado River Basin and adjacent service areas. In addition, the study is necessary to develop options and strategies to meet future water demands. This letter expresses our support for the 7-State study proposal as we currently understand it and are hopeful that the proposed study will continue to be developed along these lines.

Sincerely,

A handwritten signature in blue ink, which appears to read 'Eric W. Wilkinson', is written over a light blue horizontal line.

Eric W. Wilkinson  
General Manager,  
Northern Colorado Water Conservancy District

cps



## Municipal Subdistrict

### Northern Colorado Water Conservancy District

220 Water Avenue • Berthoud, CO 80513 • 970-532-7700 • fax 970-532-0942

June 22, 2009

Ms. Lorri Gray-Lee  
Regional Director  
U.S. Bureau of Reclamation  
Lower Colorado Region  
P.O. Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
U.S. Bureau of Reclamation  
Upper Colorado Region  
125 South State Street, Room 6107  
Salt Lake City, UT 84138-1102

Dear Ms. Gray-Lee & Mr. Walkoviak:

Subject: Basin States Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study

We are providing this letter in support of the Colorado River Water Supply and Demand Study proposal offered by the 7-Colorado River Basin States. As you may recall, the Seven Colorado River Basin States expressed interest in participating in the U.S. Bureau of Reclamation (Reclamation) Basin Studies Program in a letter dated February 10, 2009. The 7-States have been working collaboratively with representatives from your Upper and Lower Colorado River regions to prepare a study proposal since being informed that the 7-State study concept was selected by Reclamation for further development.

We believe the 7-Colorado River Basin States proposed study is critical to determining existing and future supply and demand within the Colorado River Basin and adjacent service areas. In addition, the study is necessary to develop options and strategies to meet future water demands. This letter expresses our support for the 7-State study proposal as we currently understand it and are hopeful that the proposed study will continue to be developed along these lines.

Sincerely,

Eric W. Wilkinson  
General Manager,  
Municipal Subdistrict, Northern Colorado Water Conservancy District

cps

PNM Resources  
414 Silver Avenue SW  
Albuquerque, NM 87102  
[www.pnmresources.com](http://www.pnmresources.com)  
Phone : 505.241.4146  
Fax : 505.241.4306

*Patrick Themig*  
Vice President, Generation



June 18, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

Subject: Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study

Dear Ms. Gray & Mr. Walkoviak:

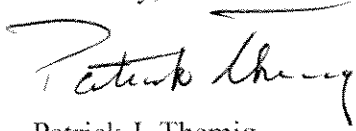
This letter expresses our support for the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and evaluating the current and projected water supplies and demands in the Colorado River Basin and its service areas and to identify potential opportunities for addressing supply/demand imbalances.

It is our understanding that throughout the study, the Federal and non-federal cost-share partners would make information available to Basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may also form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

As a stakeholder, we request an opportunity to provide input, review, and comment on

the Colorado River Basin Water Supply and Demand Study as it progresses. Thank you for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Patrick Themig". The signature is written in a cursive style with a prominent initial "P" and a long horizontal flourish extending to the right.

Patrick J. Themig  
Vice President, Generation

**SAN JUAN AGRICULTURAL WATER USERS ASSOCIATION**

**P O Box 1704  
Bloomfield, NM 87413  
505-632-3266**

June 18, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

Subject: Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study

Dear Ms. Gray & Mr. Walkoviak:

This letter expresses our support for the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and evaluating the current and projected water supplies and demands in the Colorado River Basin and its service areas and to identify potential opportunities for addressing supply/demand imbalances.

It is our understanding that throughout the study, the Federal and non-federal cost-share partners would make information available to Basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may also form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply and Demand Study as it progresses. Thank you for your consideration.

Sincerely,

*Michael B. Sullivan*

Michael B. Sullivan, President  
San Juan Agricultural Water Users Association



# San Juan Water Commission

7450 East Main Street, Suite B • Farmington • New Mexico • 87402  
Ph: 505-564-8969 • Fax: 505-564-3322 • Email: sjwcoffice@sjwc.org

MEMBERS:  
City of Aztec  
City of Bloomfield  
City of Farmington  
San Juan County

S.J. County Rural Water Users Association

June 18, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

**Subject:** Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study

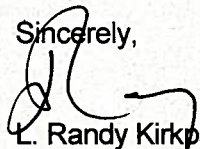
**Dear Ms. Gray & Mr. Walkoviak:**

This letter expresses support for the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation. We understand that the intent of the study includes reviewing and evaluating the current and projected water supplies and demands in the Colorado River Basin and its service areas and to identify potential opportunities for addressing supply/demand imbalances within current law.

It is our further understanding that throughout the study, the Federal and non-federal cost-share partners will make information available to Basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may also form working groups to conduct different aspects of the studies with the involvement of Basin stakeholders.

As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply and Demand Study as it progresses. Thank you for your consideration.

Sincerely,



L. Randy Kirkpatrick  
San Juan Water Commission



# San Diego County Water Authority

4677 Overland Avenue • San Diego, California 92123-1233  
(858) 522-6600 FAX (858) 522-6568 www.sdcwa.org

June 22, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

Subject: Letter of support for proposed Colorado River Basin water supply and demand study

Dear Ms. Gray & Mr. Walkoviak:

This letter expresses the Water Authority's support for the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation. The purpose of the study is to review and evaluate current and projected water supplies and demands in the Colorado River Basin and its service areas, and to identify potential opportunities for addressing supply/demand imbalances.

It is our understanding that throughout the study, the federal and non-federal cost-share partners would make information available to Basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may also form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply and Demand Study as it progresses. Thank you for your consideration.

Sincerely,

Halla Razak  
Colorado River Program Director

*A public agency providing a safe and reliable water supply to the San Diego region*

DATE	06/25/09
TIME	1000
CLASSIFICATION	
ISSUES	
ISSUES NO.	
FOUNDER ID	
REMOVED	

#### MEMBER AGENCIES

Carlsbad  
Municipal Water District

City of Del Mar

City of Escondido

City of National City

City of Oceanside

City of Poway

City of San Diego

Fallbrook  
Public Utility District

Helix Water District

Lakeside Water District

Olivenhain  
Municipal Water District

Otay Water District

Padre Dam  
Municipal Water District

Camp Pendleton  
Marine Corps Base

Rainbow  
Municipal Water District

Ramona  
Municipal Water District

Rincon del Diablo  
Municipal Water District

San Dieguito Water District

Santa Fe Irrigation District

South Bay Irrigation District

Vallecitos Water District

Valley Center  
Municipal Water District

Vista Irrigation District

Yuima  
Municipal Water District

#### OTHER REPRESENTATIVE

County of San Diego



**BOARD OF TRUSTEES**

**CHAIRMAN**  
Charles Wilson  
Southern California Edison

**COUNTY SUPERVISORS**  
Hon. Marion Ashley  
County of Riverside  
Hon. Paul Biane  
County of San Bernardino  
Hon. Don Knabe  
County of Los Angeles  
Hon. Janet Nguyen  
County of Orange  
Hon. Ray Watson  
County of Kern  
SCWC Vice Chairman

**AGRICULTURE SECTOR**

John W. Borchard, Jr.  
Borchard Companies  
John Fricker  
Riverside County Farm Bureau  
Eric Larson  
San Diego County Farm Bureau  
Robert K. Seat  
Orange County Farm Bureau  
Geoffrey Vanden Heuvel  
Milk Producers Council  
SCWC Treasurer  
Rick Wegis  
Kern County Farm Bureau

**BUSINESS SECTOR**

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RBF Consulting  
Jose Chanes  
Procter & Gamble Paper Products Co.  
Les Clark  
Independent Oil Producers Agency  
John Donner  
AT&T  
Mark Gray  
Building Industry Association of  
Southern California  
Robert A. Krieger  
Krieger & Stewart  
Chair, Colorado River Task Force  
Stephen A. Zapotoczny  
CP Kelco

**CITY SECTOR**

Hon. Gene Gilbert  
City of Indio  
Hon. Bert Hack  
City of Laguna Woods  
Hon. Eunice Ulloa  
City of Chino  
SCWC Secretary

**WATER SECTOR**

Michael Camacho  
Inland Empire Utilities Agency  
Col. John V. Foley  
Moulton Niguel Water District  
Darrell Gentry  
Vallecitos Water District  
Donald Kendall  
Calleguas Municipal Water District  
Jeffrey Kightlinger  
Metropolitan Water District  
of Southern California  
Ann Mathews  
Kern County Water Agency  
John McFadden  
Coachella Valley Water District

**TASK FORCE CHAIRS**

Ron Gastelum  
Attorney at Law  
Urban Water Plan Task Force  
Richard Jemison  
Land Strategies  
Delta Water Issues Task Force  
Larry McKenney  
RBF Consulting  
Legislative Task Force  
James A. Noyes  
Chairman's Advisory Task Force  
Kenneth Petersen  
Golden State Water Company  
Water Quality Task Force  
Stacy Roscoe  
Strategic Plan Task Force

**CHAIR EMERITUS**

Hon. Harriett M. Wieder

**EXECUTIVE DIRECTOR**

Joan Anderson Dym

June 15, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
P.O. Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

Subject: Letter of Support for Proposed Colorado River Basin Water Supply & Demand Study

Dear Ms. Gray & Mr. Walkoviak:

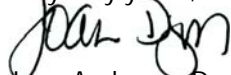
This letter expresses the Southern California Water Committee's (SCWC) support for the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and evaluating the current and projected water supplies and demands in the Colorado River Basin and its service areas and to identify potential opportunities for addressing supply/demand imbalances.

The SCWC is a nonprofit, nonpartisan, public education partnership dedicated to informing Southern Californians about our water needs and our state's water resources. It is a cooperative effort of business, government, water agencies, agriculture, and public interests. Since 1984, the sole purpose of the SCWC is to ensure adequate, reliable, affordable, and quality water supply for all Californians.

It is our understanding that throughout the study, the Federal and non-federal cost-share partners would make information available to Basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may also form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply and Demand Study as it progresses. Thank you for your consideration.

Very truly yours,



Joan Anderson Dym  
Executive Director

cc: Robert Krieger  
Chair, SCWC Colorado River Task Force



10184 Sixth Street ~ Suite C  
Rancho Cucamonga, CA 91730  
Phone (909) 980-4700  
Fax (909) 980-2628

[www.socalwater.org](http://www.socalwater.org)



DEPARTMENT OF NATURAL RESOURCES

## DIVISION OF WATER RESOURCES

Bill Ritter, Jr.  
Governor

Harris D. Sherman  
Executive Director

Dick Wolfe, P.E.  
Director/State Engineer

June 23, 2009

Ms. Lorri Gray-Lee, Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
P.O. Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak, Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

Subject: Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study

Dear Ms. Gray and Mr. Walkoviak:

This letter expresses our support for the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and evaluating the current and projected water supplies and demands in the Colorado River Basin and its service areas and to identify potential opportunities for addressing supply/demand imbalances.

It is our understanding that throughout the study, the Federal and non-federal cost-share partners would make information available to Basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may also form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply and Demand Study as it progresses. Thank you for your consideration.

Sincerely,

Dick Wolfe  
Director / State Engineer

**Office of the State Engineer**

1313 Sherman Street, Suite 818 • Denver, CO 80203 • Phone: 303-866-3581 • Fax: 303-866-3589  
www.water.state.co.us



# Office of the Governor

JIM GIBBONS  
GOVERNOR

June 16, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

**RE: Letter of Support for Proposed Colorado River Basin  
Water Supply and Demand Study**

Dear Ms. Gray-Lee & Mr. Walkoviak:

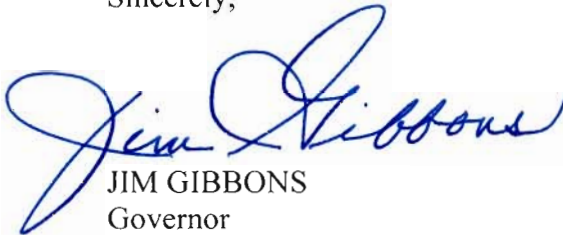
On behalf of the citizens of the State of Nevada, I would like to express my support for the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation ("Reclamation"). The intent of the study includes reviewing and evaluating the current and projected water supplies and demands in the Colorado River Basin, its sub-basins, the areas served from the Colorado River and to identify potential opportunities for addressing supply and demand imbalances.

The citizens of Southern Nevada receive nearly 90% of their water supply from the Colorado River, making it a vital resource for the region. As of June 8, 2009, Lake Mead was at an elevation of 1,096 feet, a level not experienced in more than forty years, and only twenty-one feet above the legal threshold for declaring the first level of shortage in the Lower Colorado River Basin. If drought conditions continue to persist, Lake Mead could fall below 1,000 feet resulting in the inability to withdraw any water due to current intake locations. The consequences of such an occurrence would be socially, economically and environmentally devastating to the entire State of Nevada.

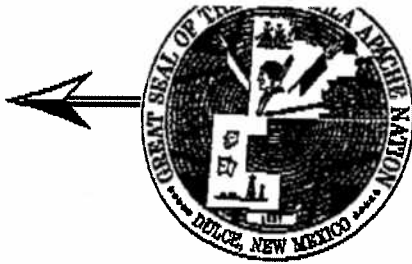
Ms. Lorri Gray-Lee  
Mr. Larry Walkoviak  
June 16, 2009  
Page 2

The study proposed by Reclamation will enhance the ability for the State to fulfill its statutory responsibility to protect, safeguard and hold in trust Nevada's Colorado River resources by reviewing, evaluating, and identifying water supplies, demands, and imbalances. Reflecting on the unique characteristics of the Colorado River system, shared by seven states and the country of Mexico, these inquiries are significant and appropriate for the management of the Colorado River. I am certain that this original and comprehensive study will result in valuable data and information from which sophisticated analysis and recommendations can be made on how to optimize operations and infrastructure in the basin.

Sincerely,



JIM GIBBONS  
Governor



## THE JICARILLA APACHE NATION

P.O. BOX 507 • DULCE, NEW MEXICO • 87528-0507

18 June 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

Subject: Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study

Dear Ms. Gray & Mr. Walkoviak:

This is to inform you that the Jicarilla Apache Nation supports the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and evaluating the current and projected water supplies and demands in the Colorado River Basin and its service areas and to identify potential opportunities for addressing supply/demand imbalances.

It is my understanding that throughout the study, the Federal and non-federal cost-share partners would make information available to Basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may also form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

As a stakeholder, the Nation requests an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply and Demand Study as it progresses. Please notify Andrea Lefevre, Director of the Jicarilla Water Administration Office, phone 575-759-7405, email: [lefevreandrea@yahoo.com](mailto:lefevreandrea@yahoo.com), and Herbert A. Becker, phone 505-242-2214; email: [herb.becker@jaaffiliates.com](mailto:herb.becker@jaaffiliates.com) when information is available for their review and comment.





**THE JICARILLA APACHE NATION**

P.O. BOX 507 • DULCE, NEW MEXICO • 87528-0507

Thank you for your consideration.

Sincerely,

A handwritten signature in black ink, appearing to read "Levi Pesata".

Levi Pesata  
 President  
 Jicarilla Apache Nation

CC: Andrea Lefevre  
 Herbert A. Becker





## THE NAVAJO NATION DEPARTMENT OF WATER RESOURCES

P.O. BOX 678 \* FORT DEFIANCE, ARIZONA 86504 \* (928)729-4003 \* FAX (928)729-4029

JOE SHIRLEY, JR.  
PRESIDENT

BEN SHELLY  
VICE PRESIDENT

June 24, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

**Subject: Letter of Support for Colorado River Basin Water Supply and Demand Study**


Dear Ms. Gray & Mr. Walkoviak:

This letter expresses the Navajo Nation's Department of Water Resources support for the proposed *Colorado River Basin Water Supply and Demand Study* under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and evaluating the current and projected water supplies and demands in the Colorado River Basin and its service areas and to identify potential opportunities for addressing supply/demand imbalances.

It is our understanding that throughout the study, the Federal and non-federal cost-share partners would make information available to Basin stakeholders and request their input. Stakeholder input will be incorporated into the Basin Study as appropriate. The cost-share partners may also form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

As a stakeholder, we request an opportunity to provide input, review, and comment on the *Colorado River Basin Water Supply and Demand Study* as it progresses. Thank you for your consideration.

Sincerely,

THE NAVAJO NATION  
  
John Leeper, Branch Manager  
Water Management Branch

**THE SOUTHWESTERN WATER CONSERVATION DISTRICT**  
A Municipal District Organized Under State Law For Development And Conservation Of The Waters in the  
**SAN JUAN AND DOLORES RIVERS AND THEIR TRIBUTARIES**  
IN SOUTHWESTERN COLORADO

**West Building – 841 East Second Avenue**  
**DURANGO, COLORADO 81301**  
**(970) 247-1302 – Fax (970)259-8423**

June 19, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

Re: Proposed Colorado River Basin Water Supply and Demand Study

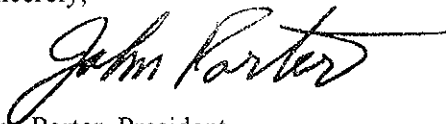
Dear Ms. Gray-Lee and Mr. Walkoviak:

The Southwestern Water Conservation District (SWCD) was established by the Colorado legislature in 1941 to conserve and protect the waters of the San Juan and Dolores Rivers and their tributaries. The SWCD is an umbrella agency for Water Conservancy and Irrigation Districts in southwestern Colorado, and has board members representing all or parts of nine counties.


We are writing this letter to express our support for the proposal made by the Seven Colorado River Basin States for a Colorado River Basin Water Supply and Demand Study with the Bureau of Reclamation. It is believed that this study would be very beneficial for the evaluation of current and projected water supply and demand in the Colorado River Basin and service areas. The SWCD has a statutory obligation to conserve and protect the waters in southwestern Colorado, and this study would be helpful in developing strategies to meet future demands in throughout the basin as well as augmentation opportunities that may assist in meeting these demands.

Again, the SWCD supports the proposal for the Colorado River Basin Water Supply and Demand Study, and we would appreciate the opportunity to review the study and to provide input relevant to the southwestern portion of the State of Colorado.

Sincerely,



John Porter, President  
Southwestern Water Conservation District



Bruce T. Whitehead, Executive Director  
Southwestern Water Conservation District

Cc: SWCD Board Members  
Jennifer Gimbel





THE STATE OF ARIZONA  
**GAME AND FISH DEPARTMENT**

5000 W. CAREFREE HIGHWAY  
PHOENIX, AZ 85086-5000  
(602) 942-3000 • WWW.AZGFD.GOV

**GOVERNOR**  
JANICE K. BREWER  
**COMMISSIONERS**  
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JENNIFER L. MARTIN, PHOENIX  
ROBERT R. WOODHOUSE, ROLL  
NORMAN W. FREEMAN, CHINO VALLEY  
JACK F. HUSTED, SPRINGVILLE  
**DIRECTOR**  
LARRY D. VOYLES  
**DEPUTY DIRECTORS**  
GARY R. HOVATTER  
ROBERT D. BROSCHEID



June 19, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102


Subject: Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study

Dear Ms. Gray-Lee & Mr. Walkoviak:

The purpose of this letter is to express Arizona Game and Fish Department (Department) support for the Colorado River Basin Water Supply and Demand Study proposed by the Colorado River Basin States to be funded by the Bureau of Reclamation through the Water for America Initiative. The Department understands that the proposed study would examine basin-wide water supply and demand issues over a 50-year time period in the context of potential climate change. The Department also understands that the study will identify supply issues that could be resolved with changes to the operation of water supply systems, modifications to existing facilities, development of new facilities, or other non-structural changes including augmentation.

Although the details of the study are not yet available, we support in principle the need for a comprehensive, long-term analysis of Arizona's water supply and demand issues and an improved understanding of issues and potential solutions would benefit this agency in planning for the future and in meeting our trust responsibility for fish and wildlife in Arizona. Another component of the proposal, providing opportunities for stakeholder involvement, is also regarded as important. We look forward to participating during that process. Please contact Mr. Josh Avey at 623-236-7605 if you have any questions and if you do receive the grant.

Sincerely,

  
Larry D. Voyles  
Director



June 29, 2009

Ms. Lorri Gray-Lee  
Director, Lower Colorado Region  
United States Bureau of Reclamation  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Director, Upper Colorado Region  
United States Bureau of Reclamation  
125 South State Street, Room 6107  
Salt Lake City, UT 84138-1147

*Via email:* lgray@usbr.gov  
lwalkoviak@usbr.gov

Dear Ms. Gray-Lee and Mr. Walkoviak:

We are writing to offer our enthusiastic support for the proposal from the Colorado River Basin States to participate in Reclamation's Basin Studies program. We understand that there is West-wide competition for scarce resources under this program, yet we believe that the need to further the dialogue on future water supply is of such great importance in the Colorado River basin that it should rise to the top for funding.

Evolving circumstances in the Colorado River basin suggest that a new, aggressive effort to examine water demands and supplies could yield important new management agreements. Climate change guarantees that future basin hydrology won't look like the past, and we need to engage in a dynamic planning process to accommodate the changes it brings. Studies predict that the Colorado River basin will experience extraordinary changes that will result in considerable impacts to the hydrologic cycle and water supply.

We are pleased to see that the basin study proposal plans to use downscaled climate information to examine system operations. This information is critical to realistic planning efforts and moreover will be required under new studies mandated in the SECURE Water Act signed into law earlier this year. Focusing on this analysis now will give Reclamation – as well as all Colorado River stakeholders – a badly needed jump start and allow planning efforts to begin sooner.

**Brisk growth within the Colorado River basin and the broader area to which it supplies water promises to continue.** We are supportive of the study as an effort to identify ways to meet future demands, including environmental demands. We recognize that the basin states are focused on developing new supplies, but we believe it will be important to study, identify, and invest in ways to live within our means, such as improving efficiency, system re-operation, and increasing flexibility, in case we are unable to develop “new supplies.” We see tremendous opportunity in this arena, such as water conservation as a way to reduce urban demand growth, and would like to work with the Colorado River basin studies partners on these efforts.

**There is already a considerable history of transfers of water from agricultural use to supply growing cities in the basin, and more are expected.** There are costs and benefits associated with these transfers, and we are engaged in an effort to define these. Instead of permanently switching these water uses or failing to restore or protect critical environmental flows, we also need new ways of sharing and banking our limited water supplies. As the Colorado River basin study program begins to develop alternatives, we would like to work directly with the study partners to develop a broad range of water sharing mechanisms and to integrate information on third party impacts.

**Energy development, the growth of small communities in the basin, and the development and/or protection of groundwater all promise to bear on the future of water supply and demand in the basin.** In all cases, future water demands in these areas will bear a direct relationship to policy decisions yet to be made at the federal, state and local level. We are engaged in studying these potential demands and would like to work directly with the study partners in defining the range of future demands for these water uses.

**Increasing pressure on habitat for endangered species threatens water supply reliability throughout the West, but with planning and proactive management in the Colorado River basin, we should be able to avoid these problems seen in other parts of the country.** We have begun a partnership with Reclamation and the CADSWES department at the University of Colorado to identify environmental flow needs at key locations in the Colorado River basin and develop tools to integrate them into Reclamation’s CRSS model or to expand it. This effort will allow us to build the tools needed to evaluate the impact on key environmental flows of changes in water use and system operations. We would like to work directly with the Colorado River basin study

program partners to integrate these environmental flow needs into your assessment process as you begin to identify and consider alternatives.

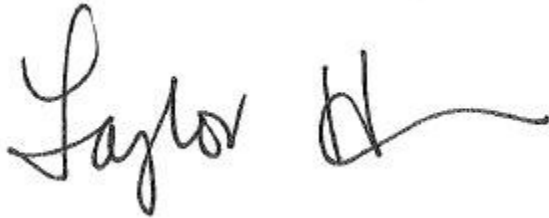
We anticipate tremendous benefits from the close look at supplies and demands proposed. Furthermore, we are engaged in a formal study effort that will produce information that can improve the proposed Colorado River basin study.

Please accept this letter as a sign of our strong support for the proposed Colorado River basin study, and let us know if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Jennifer Pitt". The letters are cursive and connected.

Jennifer Pitt  
Environmental Defense Fund

A handwritten signature in black ink that reads "Taylor Hawes". The signature is highly stylized and cursive.

Taylor Hawes  
The Nature Conservancy

A handwritten signature in black ink that reads "Melinda Kassen". The signature is cursive and somewhat fluid.

Melinda Kassen  
Trout Unlimited

## **UNIT "B" IRRIGATION DISTRICT**

---

15875 S. Avenue A, Somerton, Arizona 85350  
(928) 627-8891 Phone; (928) 627-8892 Fax

June 23, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
P. O. Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S State Street, Room 6107  
Salt Lake City, UT 84138-1102

**Re: Letter of Support for the Proposed Colorado River Basin Water Supply Study**

Dear Ms. Gray and Mr. Walkoviak:

This letter expresses our support for the proposed Colorado River Basin Water Supply Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and further evaluating the current and projected water supply and demand throughout the Colorado River Basin and its service areas. This information would be used to develop strategies for augmentation opportunities to meet future water demands.

It is our understanding that throughout the study, the cost-share partners would make information available to basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may agree to form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

Ms. Lorri Gray-Lee  
Mr. Larry Walkoviak  
June 23, 2009  
Page two

As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply Study as it progresses.

Thank you for your consideration.

Sincerely,

**Unit "B" Irrigation and Drainage District**

A handwritten signature in black ink, appearing to read "Orrin Hoppe", followed by the letters "VP" written in a similar style.

Orrin Hoppe  
Manager

*FOR ORVIN HOPPE*



# United States Department of the Interior


FISH AND WILDLIFE SERVICE  
P.O. Box 1306  
Albuquerque, New Mexico 87103

In Reply Refer To:  
FWS/R2/NWRS-WR/041494

**JUN 24 2009**

## Memorandum

To: Regional Director, Bureau of Reclamation, Salt Lake City, Utah

From: Regional Chief, National Wildlife Refuge System, Region 2 

Subject: Memorandum of Support for Proposed Colorado River Basin Water Supply and Demand Study

Support is provided herein from the U.S. Fish and Wildlife Service's National Wildlife Refuge System (NWRS) for the Colorado River Basin Water Supply and Demand Study proposed by the Colorado River Basin States to be funded by the Bureau of Reclamation through the Water for America Initiative. While full details of the study are not yet available, it is our understanding that the proposed study would cover a 50-year time period and make an assessment, in the context of potential climate change, of basin-wide water supply and demand issues.

The NWRS is keenly interested in studies that will address the impacts of climate change, especially as it relates to the likely environmental consequences. We are supportive of the proposed study, in that we understand it will focus on providing a better understanding of anticipated climate change impacts on the Colorado River Basin's hydrology, allowing planners and managers to better plan for future conditions.

As this proposal focuses on water supply and water demand predictions, we think it is important that work be done to address the high degree of uncertainty associated with a changing climate, especially as relates to managing for water-dependent ecological systems. While this proposal's scope does not include much in the way of model development, we believe much improvement can be made in the accuracy of today's climatic models, and any progress made to identify areas that predictive modeling can be improved would be highly beneficial.

Further, we believe one of the study's strengths lies in its emphasis on identifying and assessing options to address priority water issues, looking at possible modifications to existing facilities, at the development of new facilities, as well as at other nonstructural changes (including the important opportunities represented by water conservation).

In that light, we support this study being funded as it will assist in planning for managing critical habitat through assessment of the efficacy of conservation actions in the context of climate change. In so far as the study assesses impacts of water development and management options

that might impact refuge resources by improving the understanding of the “future without” condition, the NWRS would be interested in the findings.

Finally, as the NWRS has obvious interests in water supply and demand questions, we look forward to providing input as the study (if funded) progresses. Please feel free to contact Regional Hydrologist Andrew Hautzinger if you have any questions at 505-248-7946.

cc: Arizona Department of Water Resources, Phoenix, AZ (Attn: Perri Benemilis)  
Director, Arizona Game and Fish Department, Phoenix, AZ  
Regional Director, Bureau of Reclamation, Lower Colorado Region, Boulder City, NV





# United States Department of the Interior

FISH AND WILDLIFE SERVICE

P.O. Box 1306  
Albuquerque, New Mexico 87103

In Reply Refer To:  
FWS/R2/NWRS-WR/041494

**JUN 24 2009**

## Memorandum

To: Regional Director, Bureau of Reclamation, Boulder City, Nevada

From: Regional Chief, National Wildlife Refuge System, Region 2 *Chris SA*

Subject: Memorandum of Support for Proposed Colorado River Basin Water Supply and Demand Study

Support is provided herein from the U.S. Fish and Wildlife Service's National Wildlife Refuge System (NWRS) for the Colorado River Basin Water Supply and Demand Study proposed by the Colorado River Basin States to be funded by the Bureau of Reclamation through the Water for America Initiative. While full details of the study are not yet available, it is our understanding that the proposed study would cover a 50-year time period and make an assessment, in the context of potential climate change, of basin-wide water supply and demand issues.

The NWRS is keenly interested in studies that will address the impacts of climate change, especially as it relates to the likely environmental consequences. We are supportive of the proposed study, in that we understand it will focus on providing a better understanding of anticipated climate change impacts on the Colorado River Basin's hydrology, allowing planners and managers to better plan for future conditions.

As this proposal focuses on water supply and water demand predictions, we think it is important that work be done to address the high degree of uncertainty associated with a changing climate, especially as relates to managing for water-dependent ecological systems. While this proposal's scope does not include much in the way of model development, we believe much improvement can be made in the accuracy of today's climatic models, and any progress made to identify areas that predictive modeling can be improved would be highly beneficial.

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In that light, we support this study being funded as it will assist in planning for managing critical habitat through assessment of the efficacy of conservation actions in the context of climate change. In so far as the study assesses impacts of water development and management options

that might impact refuge resources by improving the understanding of the “future without” condition, the NWRS would be interested in the findings.

Finally, as the NWRS has obvious interests in water supply and demand questions, we look forward to providing input as the study (if funded) progresses. Please feel free to contact Regional Hydrologist Andrew Hautzinger if you have any questions at 505-248-7946.

cc: Arizona Department of Water Resources, Phoenix, AZ (Attn: Perri Benemilis)  
Director, Arizona Game and Fish Department, Phoenix, AZ  
Regional Director, Bureau of Reclamation, Upper Colorado Region, Salt Lake City, UT



# United States Department of the Interior

U.S. Fish and Wildlife Service

Arizona Ecological Services Field Office

2321 West Royal Palm Road, Suite 103

Phoenix, Arizona 85021-4951

Telephone: (602) 242-0210 Fax: (602) 242-2513



In Reply Refer to:

AESO/SE

June 12, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

Subject: Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study

Dear Ms. Gray-Lee & Mr. Walkoviak:

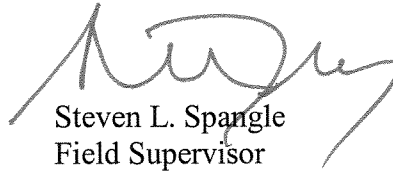
The purpose of this letter is to express support for the Colorado River Basin Water Supply and Demand Study proposed by the Colorado River Basin States to be funded by the Bureau of Reclamation through the Water for America Initiative. We understand that the proposed study would examine basin-wide water supply and demand issues over a 50-year time period in the context of potential climate change. We also understand that the study will identify supply issues that could be resolved with changes to the operation of water supply systems, modifications to existing facilities, development of new facilities, or other non-structural changes including augmentation.

Although the details of the study are not yet available, we support in principle the need for a comprehensive, long-term analysis of Arizona's water supply and demand issues. Specifically, an improved understanding of issues and potential solutions would benefit this agency in planning for the future and in meeting our trust responsibility for fish and wildlife in Arizona.

Ms. Gray-Lee & Mr. Walkoviak

We understand that the study process would include opportunities for stakeholder involvement and we look forward to participating.

Sincerely,



Steven L. Spangle  
Field Supervisor

cc: Arizona Department of Water Resources, Phoenix, AZ (Attn: Perri Benemilis)  
Director, Arizona Game and Fish Department, Phoenix, AZ

W:\Steve Spangle\colorado river basin\letter of support AGFD and FWS Colo Basin Water Supply Study.doc:egg

June 17, 2009

**Chair**

Trudy Jones  
City of Albuquerque  
Councillor, District 8

**ViceChair**

Alan B. Armijo  
County of Bernalillo  
Commissioner, District 1

Martin J. Chavez  
City of Albuquerque  
Mayor

Art De La Cruz  
County of Bernalillo  
Commissioner, District 2

Rey Garduño  
City of Albuquerque  
Councillor, District 6

Ken Sanchez  
City of Albuquerque  
Councillor, District 1

Maggie Hart Stebbins  
County of Bernalillo  
Commissioner, District 3

*Ex-Officio Member*  
Pablo R. Rael  
Village of Los Ranchos  
Board Trustee

*Executive Director*  
Mark S. Sanchez

*Website*  
[www.abcwua.org](http://www.abcwua.org)

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

**Subject: Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study**

Dear Ms. Gray & Mr. Walkoviak:

This letter expresses our support for the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and evaluating the current and projected water supplies and demands in the Colorado River Basin and its service areas and to identify potential opportunities for addressing supply/demand imbalances.

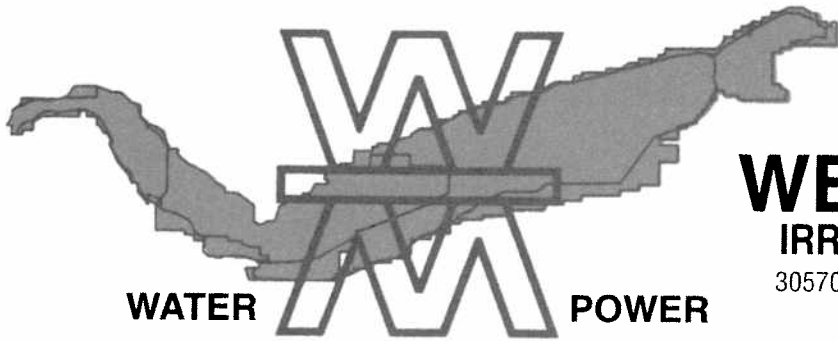
It is our understanding that throughout the study, the Federal and non-federal cost-share partners would make information available to Basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may also form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply and Demand Study as it progresses. Thank you for your consideration.

Sincerely,



Mark S. Sanchez  
Executive Director



# WELLTON-MOHAWK IRRIGATION AND DRAINAGE DISTRICT

30570 WELLTON-MOHAWK DRIVE, WELLTON, ARIZONA 85356

TEL: (928) 785-3351

FAX: (928) 785-3389

June 9, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

DATE	AMOUNT	REMARKS
06/11/09		
	10.00	
	11.00	
	1000	

*Copy to BCOO-1001*

Subject: Letter of Support for the Proposed Colorado River Basin Water Supply Study

Dear Ms. Gray & Mr. Walkoviak:

This letter expresses Wellton-Mohawk's support for the proposed Colorado River Basin Water Supply Study under the Basin Studies Program. The intent of the study includes reviewing and evaluating current and projected water supply and demand throughout the Colorado River Basin. This information would be used to develop strategies for augmentation opportunities to meet future water demands.

It is our understanding that throughout the study, the cost-share partners would make information available to basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may agree to form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply Study as it progresses. Thank you for your consideration.

Sincerely,

Elston Grubaugh  
General Manager

---

# WESTERN WATER ASSESSMENT



*Assisting Water Resource Decision-makers throughout the Intermountain West*

---

NOAA/ESRL/PSD  
325 Broadway  
Boulder, CO 80305  
Phone 303-497-4573  
Fax 303-497-6449  
<http://www.colorado.edu>

June 29, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

Subject: Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study

Dear Ms. Gray & Mr. Walkoviak:

This letter expresses our support for the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and evaluating the current and projected water supplies and demands in the Colorado River Basin and its service areas and to identify potential opportunities for addressing supply/demand imbalances.

It is our understanding that throughout the study, the Federal and non-federal cost-share partners would make information available to Basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may also form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply and Demand Study as it progresses. Thank you for your consideration.

Sincerely,

Brad Udall, Director CU-NOAA Western Water Assessment  
(signature withheld for security reasons)

# YUMA IRRIGATION DISTRICT

9510 Avenue 7 E, Yuma, Arizona 85365

(928) 726-1047 Fax: (928) 726-1048

June 23, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
P. O. Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S State Street, Room 6107  
Salt Lake City, UT 84138-1102

**Re: Letter of Support for the Proposed Colorado River Basin Water Supply Study**

Dear Ms. Gray and Mr. Walkoviak:

This letter expresses our support for the proposed Colorado River Basin Water Supply Study under the Basin Studies Program with the Bureau of Reclamation. The intent of the study includes reviewing and further evaluating the current and projected water supply and demand throughout the Colorado River Basin and its service areas. This information would be used to develop strategies for augmentation opportunities to meet future water demands.

It is our understanding that throughout the study, the cost-share partners would make information available to basin stakeholders and request their input. Stakeholder input will then be incorporated into the Basin Study as appropriate. The cost-share partners may agree to form working groups to conduct different aspects of the studies with the involvement of the stakeholders.

YUMA IRRIGATION DISTRICT - FORM		
DESCRIPTION		
ISSUE DATE	ISSUE NO.	ISSUE
06/26/09		1000
CLASSIFICATION		
PROJECT		
CONTROL NO.		
FOLDER I.D.		
KEYWORD		



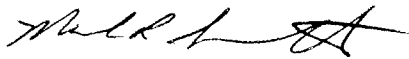
Ms. Lorri Gray-Lee  
Mr. Larry Walkoviak  
June 23, 2009  
Page two

As a stakeholder, we request an opportunity to provide input, review, and comment on the Colorado River Basin Water Supply Study as it progresses.

Thank you for your consideration.

Sincerely,

**Yuma Irrigation District**

A handwritten signature in black ink, appearing to read "Mark R. Smith", with a stylized flourish at the end.

Mark R. Smith  
President

## Attachment 2

### Letters from Non-Federal Cost-Share Partners

This attachment contains letters from non-Federal Cost-Share Partners confirming their intention to provide direct (cash) and in-kind services to match the Federal cost-share contribution (a 50:50 percent split) of the proposed Basin Study cost.

The States of Arizona, California, Colorado, Nevada,  
New Mexico, Utah and Wyoming  
Governors' Representatives on Colorado River Operations

June 19, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
PO Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

*Re: Basin States' Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study*

Dear Ms. Gray-Lee and Mr. Walkoviak:

Our letter of February 10, 2009 expressed the Seven Colorado River Basin States' interest in partnering with the Bureau of Reclamation (Reclamation) to develop and implement a joint Colorado River Basin water supply and demand study (Study) under the Basin Studies Program. The Seven Basin States have been working collaboratively with staff in your Upper and Lower Colorado River Regions to develop a Study proposal, since being informed that our proposed study was selected for Step 2 of the evaluation process.

The Seven Basin States feel that our proposed Study is critical for evaluating existing and future water supply and demand within the Colorado River Basin and adjacent service areas. The Study would also be valuable for developing options and strategies to meet any projected water supply and demand imbalances, particularly given the uncertainties associated with global climate change. If this proposal is selected by Reclamation, the Seven Basin States would bring significant resources to include both in-kind and cash contributions to assist in its implementation and completion and commit to a 50/50 share of Study costs.

Thank you for your continued consideration of the Seven States' request.

Sincerely,



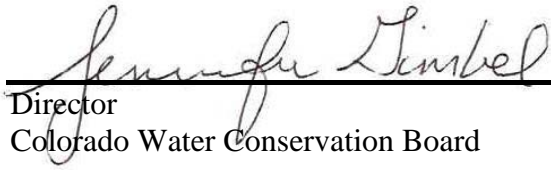
Director  
Arizona Department of Water Resources



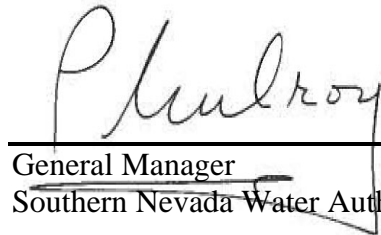
General Manager  
Central Arizona Water Conservation District



Executive Director  
Colorado River Board of California




Director  
Colorado Water Conservation Board



General Manager  
Southern Nevada Water Authority



Executive Director  
Colorado River Commission of Nevada



State Engineer/Governor's Representative  
New Mexico Interstate Stream Commission



Director  
Utah Division of Water Resources  
Utah Interstate Stream Commissioner



State Engineer  
State of Wyoming



Executive Director  
Upper Colorado River Commission

## ***Six Agency Committee***

*c/o 770 Fairmont Ave., Suite 100*

*Glendale, CA 91203-1068*

*(818) 500-1625*

June 22, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Bureau of Reclamation  
Lower Colorado Region  
P.O. Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Bureau of Reclamation  
Upper Colorado Region  
125 S. State Street, Room 6107  
Salt Lake City, UT 84138-1102

Re: *Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study*

Dear Ms. Gray-Lee and Mr. Walkoviak:

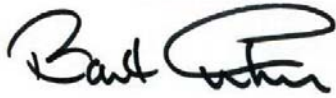
On February 10, 2009, the seven Colorado River Basin States expressed interest in partnering with the Bureau of Reclamation (Reclamation) in developing and implementing a joint Colorado River Basin Water Supply and Demand Study (Study) under the Basin Studies Program. Since being informed that the Basin States' study concept was selected for Step 2 of the evaluation process, representatives of the Basin states and others have been working collaboratively with staff in the Upper and Lower Colorado Regions to develop a Study proposal for consideration by Reclamation's Review Committee.

The Six Agency Committee, representing Coachella Valley Water District, Imperial Irrigation District, the Los Angeles Department of Water and Power, The Metropolitan Water District of Southern California, Palo Verde Irrigation District, and San Diego County Water Authority, provides funds to the Colorado River Board of California to carry on necessary activities in the interests of the agencies. The Six Agency Committee believes that this proposed Study is critical for evaluating future water supply and demand within the Colorado River Basin and adjacent service areas. Also, the Study is needed to develop options and strategies to meet projected water supply and demand imbalances, particularly given the uncertainties associated with climate change. If this proposal is selected by Reclamation, the Six Agency Committee would bring resources to support California's in-kind and cash contributions toward implementation and completion of the study and the seven Basin States' commitment to a 50 percent sharing of Study costs.

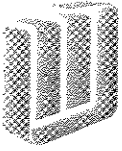
Ms. Gray-Lee and Mr. Walkoviak  
June 22, 2009  
Page 2

Thank you for your continued consideration of the seven Basin States' request. If you have any questions or require additional information, please contact Mr. Jerry Zimmerman at (818) 500-1625.

Sincerely,

A handwritten signature in black ink, appearing to read "Dana B. Fisher". The signature is stylized with a large, looping initial "D" and a cursive "Fisher".

Dana B. Fisher  
Chairman



**MWD**

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Executive Office

June 24, 2009

Ms. Lorri Gray-Lee  
Regional Director  
Lower Colorado Regional Office  
U.S. Bureau of Reclamation  
P.O. Box 61470  
Boulder City, NV 89006-1470

Mr. Larry Walkoviak  
Regional Director  
Upper Colorado Regional Office  
U.S. Bureau of Reclamation  
125 South State Street, Room 6107  
Salt Lake City, UT 84138-1102

Dear Ms. Gray-Lee and Mr. Walkoviak:

Letter of Support for Proposed Colorado River Basin Water Supply and Demand Study

This letter expresses The Metropolitan Water District of Southern California's (Metropolitan) support for the proposed Colorado River Basin Water Supply and Demand Study under the Basin Studies Program with the Bureau of Reclamation. Metropolitan's staff has participated in the development of the proposal submitted by representatives of the seven Colorado River Basin States for consideration by the Reclamation Review Committee. The study would analyze projected water supply and demand imbalances in the Colorado River Basin, assess options for resolving such imbalances, and develop recommendations for sustaining the environment, people, and economy of the Basin.

If this proposal is selected by Reclamation, Metropolitan would provide in-kind services and financial resources toward implementation and completion of the study to assist the seven Colorado River Basin States' in providing a 50 percent sharing of Study costs.

Mr. William Hasencamp, of my staff, would be Metropolitan's Primary Contact for the study. He may be reached at (213) 217-6520.

Very truly yours,

Roger K. Patterson

Assistant General Manager, Strategic Water Initiatives

JLS:tt

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Mr. Lorri Gray-Lee and Mr. Larry Walkoviak

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June 24, 2009

cc: Mr. Gerald R. Zimmerman  
Executive Director  
Colorado River Board of California  
770 Fairmont Avenue, Suite 100  
Glendale, CA 91203-1035