

# ANNUAL REPORT

# Colorado River District Protecting Western Colorado Water Since 1937

### Colorado Takes a Hard Look at the Future

Thanks to the efforts of Gov. John Hickenlooper, Colorado is pushing forward with the tough, so-called "adult" conversation on how to best supply water to a growing population. In May 2013, the governor issued an executive order that mandates Colorado develop its first-ever state water plan by 2015, with draft documents due in 2014.

The Colorado River District Board of Directors and staff are involved at many levels with a keen interest in protecting Western Colorado water, which has been our mission since 1937. The pressure is on – again – as it has been since our founding. This time, the State Demographer has predicted the state population could double by 2050. The 2010 Statewide Water Supply Initiative, produced by the Colorado Water Conservation Board, a reconnaissance-level study of population and water, predicts the state has a looming gap of 500,000 acre feet of water as population grows. That is equivalent to two full Dillon Reservoirs or a little bit less than a full Granby Reservoir, to put it in perspective.

The two biggest targets to fill the gap are agricultural irrigation water and the Colorado River System – two vital interests of the River District. In Western Colorado, agriculture provides food, de facto open space and habitat, economy and culture. Agricultural water running down the rivers from the headwaters to the agricultural lands in the lower valleys is the same water upon which a recreational economy plays, while it also enhances the riparian environment.

Since 2006, Roundtables in nine areas of the state, plus the Interbasin Compact Committee, have been working on the gap issue. The governor's executive order sets a tight deadline to focus on solutions – and thus have the adult conversation. Does Colorado really want to develop another big transmountain diversion project to fill the gap in lieu of doing everything possible with conservation, water reuse, having tough conversations about land-use patterns and urban lawn irrigation? The buying and drying of agriculture is occurring as we speak, spurred by the free market of how water rights can be bought and sold. An example is the Colorado-Big Thompson Project (C-BT). When it was built, the vast majority of water was owned by agriculture. Today, C-BT water shares are about two-thirds municipally owned, although some is leased back to agriculture. If Colorado really wants to save agriculture from buy and dry, the immediate focus should be on policies to make agriculture efficient and sustainable – and on municipalities acting on reducing gallons per capita per day use to lessen the pressure on agricultural conversions.

The Colorado River District was also founded to protect the state's interest in how it and six other states use the river. The Colorado River Compact of 1922 and the Upper Colorado River Compact of 1948 created legal limits on river use. If Colorado overuses its allocation of the Colorado River curtailments loom, as do the hardships they bring.

The District is working to understand how compact issues are integrated into Colorado's Water Plan. For example, how do we match up being able to divide water on the East and West Slopes within Colorado, while still managing those compact agreements? The Colorado River District will be a leader in advocating for different methods, such as water banking and risk management in the different river basins. Statewide, we are looking at how the water plan incorporates a compact curtailment, should it occur. The River District does not believe it is just a West Slope issue.

2013 saw the River District successfully tackle another milestone:

how to pay off the debt on Ruedi Reservoir. Ruedi is the Western Colorado mitigation for the Fryingpan-Arkansas transmountain diversion project. When it was built, it was thought future energy development would provide the revenues from water contracts to pay off the debt to the federal government. That did not happen and much uncertainty grew around financing and the fate of the uncontracted water. A report elsewhere in this document details how the River District led a Western Colorado effort to solve the issue and secure future water supply for many local entities.

We have many other developments to highlight in this report. For one, the Colorado River Cooperative Agreement was finally ratified by all parties. In the bigger picture, the River District is involved in contingency planning should the levels at Lakes Powell and Mead continue to plunge in the face of long-term drought.

The Board of Directors wants to make sure the Colorado River District is serving its constituents. If you have comments, please contact your county's Board member. The names and contact information can be found toward the end of this report.

#### James Newberry

Colorado River District Board President



James Willing

Cover: Maroon Creek in the headwaters region of the Elk Mountains, one of many tributary streams feeding into the Colorado River.



The Colorado River District protects Western Colorado water resources on behalf of the 500,000 people in Northwest and West-Central Colorado west of the Continental Divide. The Colorado River District was founded in 1937 to be a watchdog of Colorado River diversions across the Rocky Mountains to the east. The watchdog role continues with an urgency surpassing the days of our founding.

Population growth, drought and climate change promise the coming years will bear many more ideas to move water. The Colorado River District also watches to the west, to Lake Powell, Lake Mead and how six other states and the Republic of Mexico compete to use Colorado River

water. Decisions concerning the Colorado River by others affect Colorado water users.

The Colorado River District holds and develops water rights for the benefit of Western Colorado. We own and operate Wolford Mountain Reservoir in Grand County in conjunction with our partner Denver Water. In 2006, we completed expansion of Elkhead Reservoir in Northwest Colorado. Additionally, the Colorado River District controls water in various other reservoirs to support West Slope people, industry, environment and recreation. We are a public, governmental entity governed by a Board of Directors, one director from each of our 15 counties. Property owners within the District pay a small property tax to support our mission. Our District includes all the lands of Moffat, Rio Blanco, Mesa, Delta, Ouray, Garfield, Gunnison, Pitkin, Summit, Eagle, Grand and Routt Counties as well as portions of Hinsdale, Montrose and Saguache Counties.



Representatives from the seven basin states ponder the future of water in the west during 1922 hearings, which determined the parameters of the Colorado River Compact.

The Colorado River District offices are based in Glenwood Springs. Our address is P.O. Box 1120, 201 Centennial St., Glenwood Springs, CO 81602. Our phone number is (970) 945-8522. Our website offers much more information about us, our work and current water issues.

www.ColoradoRiverDistrict.org

### 2013: A Bleak Start and a Strong Finish

While always looking ahead at long-term drought and policy issues concerning water use and the Colorado River, the annual snowpack remains an every-day operational focus for the Colorado River District. It is snowpack stored above 9,000 feet in elevation that is the primary source of water in the Colorado River system.

The snowpack in water year 2013 started out poorly and looked to be tracking worse than 2012, which was the fourth worst snowpack accumulation on record. Predictions of runoff were ranging between 60 and 70 percent of average across the various sub-basins in the Upper Colorado River Basin region. This was alarming after the very dry 2012 and the depleted reservoirs it left behind – 66 percent of average capacity after the irrigation season ended.

Faced with this prospect, the Colorado River District started working with other water users to prepare for a difficult summer of river operations across the 15-county District. Then it started snowing during early spring. *April precipitation reached 140 percent of average and May hit 115 percent of average, bringing runoff projections up to an amazing 90 percent and easing concerns. A healthy summertime monsoon season provided further relief.* Winter snowpack provides the bulk of river flows, but summer rains can both ease irrigation demands on reservoirs while raising river levels temporarily.

Against this backdrop, on the Colorado mainstem, two policies regarding operation of the Shoshone Hydro Plant in Glenwood Canyon went into effect. Because of the low snowpack and low reservoir storage, Denver Water, a transmountain diverter, activated the Shoshone Relaxation Agreement in April. When this happens, one of the plant's two turbines is idled and its need for water is about halved, allowing upstream reservoirs to store more water. Benefits also accrue to West Slope entities.

However, as April got colder and locked up runoff, the policy had to come off as Grand Valley irrigators put a call on the river to cover a drop in flows.



The humpback chub and three other endangered fish are native to the Colorado River system and have lived here for millions of years.

Another important policy on the Colorado mainstem is the **Shoshone Outage Protocol.** Whenever the plant fails to operate to full capacity, reservoir owners, including the Colorado River District, Denver Water and the U.S. Bureau of Reclamation, release water to maintain flows important to recreation, the environment and municipal water users. This policy went into effect several times in 2013.

#### Water for endangered fish:

The year 2013 saw a new era of water supply allocated to habitat enhancement for four species of endangered fish in the Colorado River mainstem. Two new permanent water sources went into operation – Granby Reservoir and Ruedi Reservoir.

Under a long-term "temporary" arrangement, water had been previously released from Williams Fork Reservoir, owned by Denver Water, and Wolford Mountain Reservoir, owned by the Colorado River District. *To comply with* 

> agreements made under the Endangered Species Act, East Slope and West Slope users of the Colorado River developed a permanent supply of 10,825 acre feet, the obligation split evenly.

The solution worked out by water users on both sides of the mountains was to move the East Slope half of the requirement to Granby Reservoir, higher up the system than Williams Fork Reservoir. Granby is owned by Reclamation for the benefit of Northern Water. Water for endangered fish released from Granby better helped the upper Colorado River, augmenting low flows and abating water temperature issues as it flowed to the area to be enhanced for the endangered fish in the Grand Valley. Grand County officials reported positive results from the new arrangement.

#### Ruedi Reservoir in the Roaring Fork drainage is the new source of the West Slope's contribution of

*water.* Using Ruedi for the West Slope obligation was not as impactful as some had feared for the Fryingpan River. While the West Slope's 5,412.5 acre-foot obligation moved into the reservoir, a separate agreement allocating 10,825 acre feet of Ruedi water to the endangered fish had expired.

### Late summer monsoon in Western Colorado.



In 2013 severe drought conditions persisted until spring snows and late summer rains came. Drought conditions were partially mitigated by the year's precipitation.



#### 2013 WATER FACTS:

Colorado was a region of weather extremes in 2013. Drought continued to be severe to extreme most of the year and wild fires consumed vast areas in June and July, compromising water quality in some parts of southern Colorado. Then precipitation moderated the drought. In an ironic twist, record breaking rainfall in September damaged some water transportation infrastructure along the Front Range, further complicating the region's municipal and agricultural water supplies.

### Colorado River Cooperative Agreement Fully Ratified in 2013

The historic water sharing agreement between Denver Water and 42 Western Colorado entities emerged from six years of negotiations in 2012 and many participants were poised to start signing it, starting with Denver Water, Summit and Grand Counties.

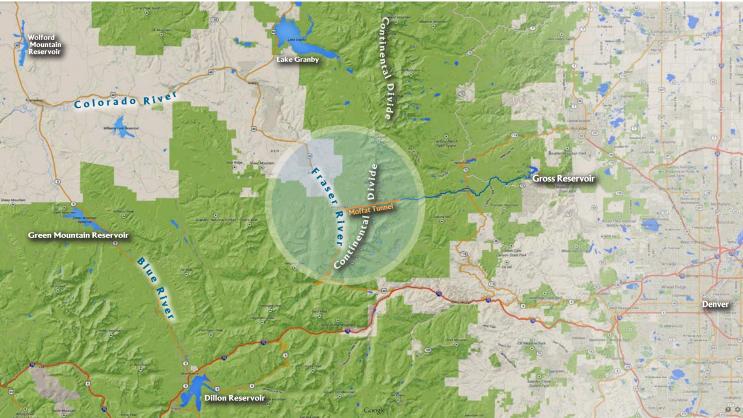
At the end of 2013, the Colorado River Cooperative Agreement (CRCA) was fully executed with final approval coming from irrigators and water suppliers in the Grand Valley.

The CRCA creates a long-term partnership between Denver Water and 42 West Slope governments, water providers, ski resorts and the Colorado River District. *The agreement is a framework for numerous actions by the parties to benefit water supply, water quality, recreation and the environment on both sides of the Continental Divide.* 

Among other important topics, the CRCA resulted from Denver Water's desire to expand its Moffat Tunnel transmountain water supply from the Fraser River in Grand County and to enlarge Gross Reservoir in Boulder County. While that project was still being permitted through 2013, the CRCA represented an enhancement of beneficial actions beyond mitigation yet to be spelled out in the Army Corps of Engineers' Record of Decision.

Negotiations on the CRCA concluded in early 2011 and the engaged parties began their approvals. The River District and the Grand Valley entities waited until they were satisfied that federal and state reviews of Green Mountain Reservoir and Shoshone Hydro Plant aspects of the agreement were finished and the agreement could be implemented as envisioned. The CRCA also means the West Slope will not oppose permitting of the Moffat Project. Detailed information about the CRCA can be found at http://www.crwcd.org/page\_336.

Green Mountain Reservoir Protocol finalized The fact of the Colorado River Cooperative Agreement (CRCA) ratification is due in large part Green Mountain is a critical water storage facility for the West Slope and it exists in a complicated water rights relationship with Denver Water's Dillon Reservoir. In dry years, the complexity kicks in. The CRCA's success is dependent in part on Green Mountain's operations and how water rights are managed according to the law for the best benefit of all involved. Colorado River District legal staff worked through the details in 2013 with CRCA part-



to resolution of the complex issue of how water flowing in and out of Green Mountain Reservoir would be administered by the Colorado Division of Water Resources and operated by the U.S. Bureau of Reclamation.

ners, state and federal officials to finalize the protocol and submit it to water court.

This progress cleared the way for final ratification of the CRCA.

### Dillon Reservoir in August. July and August monsoons brought the water cycle back to the Colorado mountains behind a depleted Dillon Reservoir.

The Colorado River Cooperative Agreement (CRCA) is an agreement between Denver Water and 42 western Colorado entities which benefits water supply, water quality, recreation and the environment on both sides of the Continental Divide. The agreement took six years to complete. A healthy environment and the attraction of our unique outdoor recreation are key economic drivers in Colorado and it shows. Visitors spend over 17 billion dollars each year in Colorado in pursuit of the great Colorado outdoors, its healthy rivers, streams and its mountains.

#### TRANSBASIN DIVERSION WATER FACTS:

The Snake and Blue Rivers and Tenmile Creek in Summit County feed Dillon Reservoir's water resources which are transported through Colorado's Continental Divide for Front Range communities. The reservoir is the largest water storage facility operated by Denver Water. 1.3 million customers use about 265,000 acre feet annually. As a measure of volume, an acre foot of water is equal to 325,851 gallons. One acre foot of water will, on average, service two to four households per year.

### Work Begins on Colorado's Water Plan as the State Looks Into Its Future

Colorado Governor John Hickenlooper issued an executive order in May 2013 for the state to create its first water plan to define how Colorado plans to meet a population that could almost double to 10 million people in 2050.

The task fell upon the state's nine Roundtables and the Interbasin Compact Committee (IBCC), created by the 2005 "Colorado Water for the 21st Century Act," and the Colorado Water Conservation Board (CWCB). *A draft of the* 

plan is due by December 2014 and a final plan by December 2015. Staff and the Board of Directors of the Colorado River District are heavily involved in the process.

At a meeting of the River District Board, James Eklund, the CWCB Director, said "Colorado's Water Plan" is an opportunity "to stop paying lip service about doing something and to do something" about the looming gap between future water demands and existing conditions. He also emphasized the ground-up nature of the work.

"There is a common misunderstanding of the Colorado Water Plan that it is some edict delivered from up on high down to the masses," he said.

**"This is by far and away a Colorado Water Plan by Coloradans for Coloradans.** We are all in this together. This plan is really our plan, not the CWCB's and not the Governor's Office. We are standing on a gold mine of eight years of civic engagement in Colorado," Eklund said of the work already done by the Roundtables and IBCC.

He pointed out that under the current water supply default, agricultural water is the source of new urban water supply.

"The current trajectory of moving water from agriculture to urban use is not one that we like," he said. "Right now, if we push the pause button on buy and dry in the South Platte Basin, 20 percent of irrigated agriculture in the basin is already committed to urban use. This is not something we can get away from; it is something we need to address."

As part of the Colorado Water Plan, the CWCB has asked each of the nine basin Roundtables to create a Basin Implementation Plan (BIP) to address consumptive



Nine Basin Roundtables are working at a grassroots level to help develop Colorado's Water Plan. At the 2013 Colorado River District Annual Seminar, Roundtable representatives and Colorado Water Conservation Board Director James Eklund formed a panel to discuss how the plan might work. From left are Eklund, Tom Gray of the Yampa-White, Mike Preston of the Southwest, Jim Pokrandt of the Colorado, Joe Frank of the South Platte and Michelle Pierce of the Gunnison.

#### and nonconsumptive demands in each basin.

As the work progressed in 2013, it became clear to the Colorado River District that a new, large transmountain diversion – couched in the language of "new supply" – was becoming a top discussion point, advocated by many on the Front Range as the one solution to stop the buying and drying of agriculture on the Front Range. The Colorado River District is advocating the water plan should be neutral on a big project pending further understanding of water supply, risk management to protect existing water users and how the Colorado River would be administered under compact administration.

*Two big River District goals are to avert compact administration on a river system that has never seen it and to protect Western Colorado agriculture.* If the river were to be overdeveloped, agriculture would likely be sacrificed to make use of its senior water rights.

### Colorado River Basin



#### COLORADO RIVER BASIN WATER FACTS:

When the Colorado River Compact was drafted in the 1920s, it was based on barely 20 years of stream flow records that suggested an average annual flow of 17.5 million acre feet past Lee Ferry. Modern studies of tree rings and the post 1930s gage record revealed that those two decades were probably some of the wettest in the past 500 to 1,200 years and that the natural long-term annual flow past Lee Ferry is probably closer to 14.5 million acre feet. This has resulted in more water being allocated to river users than actually flows through the Colorado.

### Elk Mountains snowpack in the Colorado River Basin watershed

The drainage basin of the Colorado River encompasses a diverse geography of 246,000 square miles. Water demand in the seven basin states and the Republic of Mexico frequently exceeds the system's annual supply, a gap that is projected to widen to between 2 and 6 million acre-feet by 2060. Population that depends on the river system is expected to continue to grow.

### Ruedi Reservoir's \$34 Million Debt Repaid, Securing Water for Western Colorado

The outstanding \$34 million construction debt on Ruedi Reservoir was paid to the federal government in 2013 and 19,585 acre-feet of previously uncontracted water supply in the 102,000-acre-foot reservoir was secured for the future of Western Colorado.

The debt was due in 2019 and uncertainty about paying it cast a shadow over how the uncontracted water in the reservoir – intended to benefit Western Colorado – would have been used.

To solve the problem, the Colorado River District for the last two years solicited West Slope interest in the remaining water and packaged an agreement with the U.S. Bureau of Reclamation, owner and operator of the reservoir straddling the Eagle-Pitkin county line.

Seventeen entities, including the Colorado River District, stepped up, cumulatively committing to purchase all of the uncontracted water and fully repay the outstanding debt. The Ute Water Conservancy District, the Grand Valley's largest water provider, secured the greatest amount: 12,000 acre-feet at a cost of \$15.5 million. The Colorado River District contracted for 4,683.5 acre-feet, at a cost of \$6 million. The cost per acre foot was roughly \$1,290. An acre foot is equal to 325,851 gallons of water and is enough water to supply two to four bouseholds for one year.



Seventeen Western Colorado entities came together in 2013 to cooperatively retire the debt to the federal government for construction of Ruedi Reservoir. The collaboration will benefit a diverse group of water users for environmental, economic, agricultural, municipal and recreational use in Western Colorado.

Ruedi Reservoir is the West Slope mitigation for the federal Fryingpan-Arkansas Project, which diverts water from the Fryingpan River and Hunter Creek headwaters across the Continental Divide to the Arkansas River Basin. The debt started at \$9.3 million when the Bureau of Reclamation completed the reservoir in the early 1970s. It ballooned to \$34 million as the government added unpaid interest and operational expenses to the principal – because of unsold water. Absent a deal, the debt would have gone up at an ever-escalating rate.

Other entities contracting for water included:

- Owl Creek Ranch Homeowners Assoc: 15 AF
  - Basalt Water Conservancy District: 300 AF
  - Town of De Beque: 25 AF
  - Mid-Valley Metro District: 100 AF
  - Garfield County: 400 AF
  - City of Aspen: 400 AF
  - W/J Metro District: 100 AF
  - Summit County: 330 AF
  - Elk Wallow Ranch LLC: 300 AF
- Wildcat Reservoir Co.: 50 AF
- Town of Carbondale: 250 AF
- Town of Palisade: 200 AF
- Snowmass Water and Sanitation District: 500 AF
- Crown Mountain Park Recreation District: 62 AF
- Wildcat Ranch Homeowners Association: 50 AF

### ENDANGERED FISH FACTS: Scientists have confirmed the historical prevalence of Colorado's four endangered fish: The bonytail, the humpback chub, the razorback sucker and the Colorado pikeminnow. University scholars have estimated that the razorback sucker evolved around 4 million years ago and the Colorado pikeminnow about 3 million years ago, when the woolly mammoth and American mastodon roamed Colorado.

Brook trout are non-native fish and the most common salmonid in the White River National Forest in central Colorado. Ruedi Reservoir in 2013 was the center of two significant developments. Most importantly, the West Slope paid off the construction debt to the federal government. A separate agreement between the West Slope and the Bureau of Reclamation set aside a permanent pool

Colorado pikeminnow

of water for summer release to enhance endangered fish habitat in the Grand Valley.

bonytail

humpback chub

razorback sucker

### Going To Work on Basin-wide River Shortages

The warnings sounded by the Colorado River Water Supply and Demand Study (Basin Study), released in 2012, continued to draw the attention of the Colorado River District in 2013 as staff members joined "next steps" committees that are developing concepts addressing the looming gaps between water supply and demand in the Southwestern states that border the Colorado River.

The Basin Study was a scenario-based planning effort by the Bureau of Reclamation and the seven states of the Colorado River Basin — Colorado, Wyoming, Utah, New Mexico, California, Nevada and Arizona.

The objective was to define current and future imbalances in water supply and demand through 2060 and to analyze adaptation and mitigation strategies to resolve those imbalances.

### The Basin Study's key points

- Imbalances will grow in the future if the potential effects of climate change are realized, demands continue to increase and stakeholders do not take any mitigating steps;
- 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 be needed;
- Demands will rise because of population growth (but at differing rates) and with climate change, supplies will decrease an average of 8 to 9 percent as measured at Lee Ferry, AZ, to an average of 13.6 million acre feet a year (maf/yr). Current compacts and treaties allocate 17.5 maf/yr.
- Current basin-wide demands (15.3 maf/yr) outstrip average supplies (14.0 maf/yr from 1953-2012);
- The current basin-wide gap is mitigated by storage in Lakes Powell and Mead, plus other reservoirs;

- Significant future mitigation and actions are needed;
- The gap is greatest in the Lower Basin, shortages are "when, not if";
- The gap in the Upper Basin is more uncertain but the shortage risk is greater than zero and can be significant in the future if no mitigation is accomplished;
- For the Upper Basin (above Lee Ferry) supply (hydrology) is the most significant factor;
- For the Lower Basin (below Lee Ferry) demand is the most influential factor.



Colorado River District General Manager Eric Kuhn explains current deficits in the Colorado River Basin at the Colorado River District's Annual Water Seminar.

To deal with these prospects, the Bureau of Reclamation and the seven states embarked collaboratively on "next steps" to verify potential strategies for water conservation, reuse, transfers and healthy river flows. Three work groups were formed and joined by River District personnel: 1) Municipal and Industrial Conservation and Water Reuse; 2) Agricultural Conservation, Productivity and Water Transfers; and 3) Environmental and Recreational Flows. In May 2013, U.S. Department of the Interior Assistant Secretary for Water and Science Anne Castle and Bureau of Reclamation Commissioner Michael Connor formally initiated "next steps" tasks. Phase 1 of this process was anticipated to be completed in the summer of 2014.

The study examined 24 supply-and-demand scenarios. On supply, it looked at hydrologic tracks involving observed river flows, paleo history (reconstructed flows from treering studies) and simulated flows under projected climate

change. Demand was developed from six different projections based on various growth estimations, development, economic and technological-adoption scenarios.

Dave Kanzer, Senior Water Resources Engineer with the Colorado River District, said that while the Upper Basin is in a better position than the Lower Basin, "Upper Basin interests must care about the big picture because solutions for the Lower Basin will directly affect the Upper Colorado River Basin. Mitigation actions (such as increased water development) can increase the risk to historical (and future) users, he said. "Others' rewards are our potential risk."

"The study confirms what we already understand: The Colorado River is already fully used," said Colorado River District General Manager Eric Kuhn. "In the very near future, the demand for the river's resources will far exceed the available supply. In order to meet the needs of people and aquatic-dependent species and habitats, new ways of thinking and doing business will be essential."

#### LAKE POWELL WATER FACTS:

Lake Powell and Glen Canyon Dam provide critical water storage for the Upper Basin states ensuring that the Upper Basin states can meet their Compact obligations to the Lower Basin for their allocated water supply. Lake Powell took 17 years to fill, reaching "full pool" in 1980. The reservoir has a storage capacity of 24,000,000 acre-feet, making it the second largest man-made reservoir in the country. Lake Mead is the largest.

#### Lake Powell levels in 2013.



Decreasing water levels in Lake Powell present significant challenges and risk throughout the Colorado River Basin. Both water supply and power generation are at risk over the next 60 years. "We are surviving the supply-demand imbalance by drawing down storage in Lake Powell and Lake Mead. The situation is complicated by the reality that the Lower Basin is using more than its share of the river, relying on surpluses and water that flows from the Upper Basin's undeveloped share of the river." - Eric Kuhn, General Manager of the Colorado River District.

### Low Powell and Mead Reservoir Levels Spur Contingency Planning

Prolonged drought on the Colorado River system – if it continues – could provoke a crisis on the river over declining water levels in Lakes Powell and Mead. The emergency would be if levels fall below the Las Vegas regional water intake on Mead and below power generating levels at Powell.

Mead and Powell are the two large regulating reservoirs on the river system. Lake Powell is the Upper Basin's savings account to assure the Upper Basin meets its Colorado Compact obligations. Mead stores water released from Powell to meet Lower Basin demands.

In response, Colorado water officials directed a group of Colorado water advisers, including Colorado River District staff, to undertake brainstorming and system modeling with officials from six other Colorado River Basin states to create an emergency plan to boost reservoir levels and avoid disaster. The Las Vegas region receives 90 percent of its water supply from Lake Mead and thus the Colorado River.

At Lake Powell, power generation is a direct benefit to many western consumers and revenues from power sales fund critical reservoir operations and environmental programs. If Powell cannot generate power at the Glen Canyon Dam the following consequences could result, according to a memo to water users from the Colorado Water Conservation Board and the Colorado Commissioner on the Upper Colorado River Commission:



Southern Nevada Water Senior Deputy General Manager John Entsminger explains conservation strategies in Las Vegas at the Colorado River District's annual seminar.

## Potential Consequences if Lake Powell power generation does not happen:

• Dramatically higher electric costs (potentially, current rates could increase two to four times) for customers in cities and towns, farms and ranches throughout much of rural Colorado and the elimination of funding for salinity, selenium and endangered fish recovery programs that are critical to protect current and future water use in Colorado;

• Reduced capacity to make releases from Glen Canyon Dam, resulting in annual releases that are insufficient to keep the Upper Basin on course to comply with the Colorado River Compact obligations which increase the

> risk of a Compact violation. A Compact violation could result in protracted litigation with the threat of curtailment of water uses throughout Colorado and the Upper Basin; and

• Risk of imposition of federal management of Upper Basin reservoirs with diminished state primacy on the intrastate management of the river and water rights.

Upper Basin group members have concluded that two measures could be taken to address the potential crisis at Powell:

1) releasing increased amounts of water to Lake Powell from other Colorado River Storage Project (CRSP) reservoirs in the Upper Basin such as Flaming Gorge and Blue Mesa; 2) implementing demand management programs to bolster Lake Powell that may include lease-fallowing or deficit irrigation.

Workgroups are analyzing these measures in preparation for interaction with stakeholders.

In both the Lower and Upper Basins, water officials are looking at ways to reduce their demands.

HOOVER DAM HYDRO FACTS: Hoover Dam's 17 generators produce on average about 4 billion kilowatt-hours of hydroelectric power each year for use in Nevada, Arizona and California. Each generator weights 4 million pounds, as much as 4 1/2 fully loaded Boeing 747-400s.

### Hoover Dam intake towers and a depleted Lake Mead.



Water for Las Vegas is drawn from Lake Mead and Hoover Dam turbines generate hydroelectric power each year for 1.3 million people. Lake Powell and Lake Mead hydro power generation is in jeopardy due to lowering water levels in the two largest components of the Colorado River storage system. This could significantly affect utility costs, economic vitality of regional farm and ranch communities and funding for important water quality and fish recovery programs if no solution is found.

### Board Awards Nearly \$250,000 to Water Use Improvement Projects

The Colorado River District Board of Directors awarded nearly \$250,000 in financial assistance in 2013 to a variety of water projects. This was the fourth year that the Colorado River District operated a unified program for large and small grants. The program received requests for more than \$1.6 million from 33 qualified applicants.

Awards are made on a cost-sharing basis. Projects must meet one or more of these objectives:

- Develop new water supplies;
- Improve existing water supply projects;
- Improve water use efficiency;
- Improve sediment control;
- Improve water quality;
- Undertake a watershed action, or
- Implement tamarisk control measures.

The 2013 recipients represented a wide variety of water supply projects that met the multiple objectives of the grant program:

Grand Mesa Reservoir Company in Mesa County, \$5,000 to repair an outlet pipe and install a cure-in-place pipe lining;

Elmwood Lateral Ditch Company in Mesa County, \$5,800 to upgrade Wallace Ditch;

No Name Water Creek Association in Garfield County, \$11,600 for the No Name Creek water line replacement along Hideaway Lane;

Van Hoose & Son Inc. in Delta County, \$6,200 for the installation of 15-inch plastic pipe to adequately carry water, building a 75-foot trellis to carry 80 feet of pipe; Routt County Conservation District in Routt County,



The Colorado River District annually supports a wide variety water conservation improvements which include Tamarisk removal, moisture monitors, ditch liners and pivot sprinklers to reduce the amount of water loss in natural, municipal and agricultural systems.

\$5,000 for the Armstrong Creek Reservoir Project;

Montrose Botanical Society in Montrose County,

\$1,700 for an upgrade of the Montrose Botanic Gardens

irrigation evapotranspiration rate experiments;

CJC Properties in Eagle County, \$30,526 for the Cache

Creek Reservoir Project;

Timbers Water & Sanitation District in Routt County,

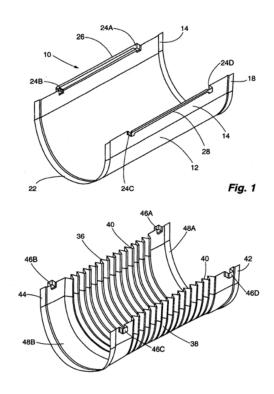
\$16,545 for the Timbers Well;

Overland Ditch and Reservoir Company in Delta County, \$10,000 for SCADA design and implementation for remote reservoir operation and real time flow management;

> LK Ranch Livestock LLC in Rio Blanco Eagle County, \$62,500 for East Flag Creek pipeline, pivot and reservoir rehabilitation;

Robinson Ditch Company in Eagle County, \$82,394 for piping improvements; and

Ware & Hinds Ditch Association in Garfield County, \$4,500 for seepage and erosion mitigation.



Typical small ditch liner used in agricultural irrigation.

#### AGRICULTURAL WATER FACTS:

Today, about two-thirds of the water flowing in the Colorado River and its tributaries is used for irrigating more than 3 million acres of farmland and producing a vast food supply, which comprises nearly one-third of the U.S. winter crop and 13% of the nation's livestock. The other one-third supplies urban areas, provides water to riparian vegetation, recreation and stream health.



Irrigated agriculture is a vital part of the culture, economy and landscape of rural communities throughout Colorado and the West. But with increasing population, the looming threats of deeper, longer droughts and aging infrastructure, irrigated agriculture faces significant challenges.

### District drops portion of West Divide Rights



The Crystal River Valley above the town of Redstone.

### In 2013, the Colorado River District Board of Directors voted to abandon some of the conditional water rights it held for the West Divide Project.

The West Divide Project was part of the Bureau of Reclamation's plan envisioned in the 1950s and 1960s to develop water for the benefit of agriculture and industry in Western Colorado. Other federal projects such as Silt, Ridgway Reservoir and Animas-LaPlata were built over time. But West Divide was judged not to be feasible to construct. The Colorado River District held the West Divide water rights for the benefit of the West Divide Water Conservancy District.

The water rights located in the Crystal Valley provoked controversy over the decades. As the conditional rights came up for diligence in water court in 2012, the Colorado River District and the West Divide District moved to downsize the project from two large reservoirs in the upper Crystal River Valley to a small 4,000 acre-foot reservoir in the area of Placita in the Crystal Valley. The purpose of the small reservoir was to provide late-season environmental flows to the Crystal River and be a source of augmentation water for out-of-priority household wells. The concept was to benefit the Crystal only and no water would have been moved transbasin. Water rights for elements of the project in the West Divide area are being maintained, as is a small portion of the Crystal rights used to augment wells.

### Crystal Valley interests and Pitkin County opposed the conditional right for the small reservoir.

In the end, the River District decided not to pursue the concept and agreed to a settlement that removed all of the West Divide conditional storage rights from the Crystal River.

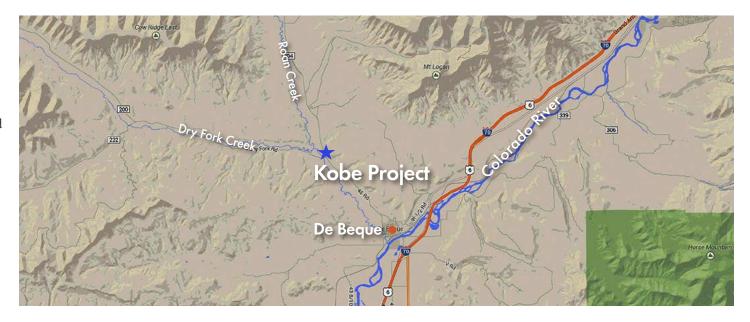
Environmental water and augmentation water remain as needs in the valley and the River District judged that should the project be needed, a new, junior water right would be sufficient for the relatively small demands.

### Kobe Project Development Agreement Signed

For several years, the Colorado River District has collaborated with the Bluestone Water Conservancy District to develop the Kobe Project on the Colorado River in Mesa and Garfield Counties.

In 2013, the River District and the Bluestone District executed a development and operations agreement with Black Hills Plateau and Production LLC, a major step in realizing construction of a pipeline to improve water supplies for a variety of interests in the De Beque area.

The plan is to provide 20 cubic feet a second (cfs) of Colorado River water to a location about four miles north of the Town of De Beque, near the confluence of Dry Fork Creek and Roan Creek. Of that water, 15 cfs would be made available for agricultural and municipal uses in the Roan Creek drainage and 5 cfs would be made available for industrial uses.



#### LOWER BASIN DIVERSION WATER FACTS:

The All-American Canal is an 80-mile long aqueduct, located in southeastern California. It conveys water from the Colorado River into the Imperial Valley and to nine cities. Approximately 68,000 acre feet was lost annually by seepage. The All-American Canal Lining Project lined 23 miles of the canal within the great Algodones Dune Field to reduce seepage. Remaining seepage is collected via drainage and pumping systems and used for agriculture in Mexico.



### All American Canal, California.

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In 2013, drought was pervasive in all the seven Colorado River Basin states and created more demand and use for all water resources. On average, the Colorado River Basin's temperature is projected to increase by 5–6 °F during the 21st century, increasing water uses and losses within the system.

### The Colorado River District Believes the Future Depends on a Well Informed Public

Public education efforts in 2013 included six State of the River public meetings within the District, the Annual Water Seminar in Grand Junction which brings the West's leading water planners and researchers together, on-line website information on water policy, supply, conservation and news, as well as Children's Water Festivals. The growth of the District's video-education and bulletin board programs, "Water Wranglers," the history of water in western Colorado and a Speakers Bureau.

The District brings objective and relevant information to



Public meetings.



Water education videos.

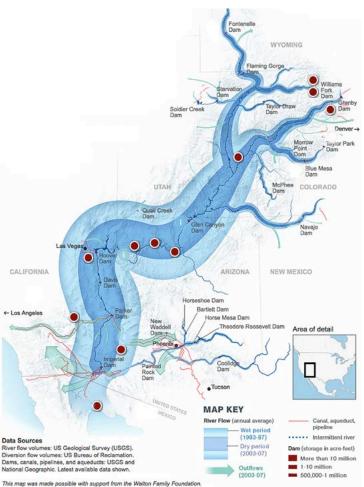
the public so that Coloradans will be involved with and armed with accurate information as water planning, policy and conservation improve in the 21st century.

The videos can be viewed on the website and DVDs that can be requested from us. The book "Water Wranglers" is available at wolverinepublishing.com. River District staff members are available for public speaking. To learn more, call (970) 945-8522 or e-mail edinfo@crwcd.org.



Colorado's water history.

Mobile water education site.



The 246,000 square mile Colorado River Basin.



Current on-line water information at www.ColoradoRiverDistrict.org



Water conservation billboards promoted responsible water use.

#### INVASIVE PLANTS WATER FACTS:

Tamarisk displaces native vegetation on approximately 50,000 acres of land in the Western United States and continues to spread. It is a plant that voraciously mines the water table. Studies have shown that a mature tamarisk can uptake nearly 200 gallons of water a day.

Tamarisk and Russian olive invasion.

In the Colorado River Basin it is estimated that tamarisk consumes 170,000 acre-feet more water annually than the native vegetation in the basin.

### **Colorado Legislative Affairs**

After two years of split control of the two houses of the General Assembly, in 2013 Colorado's House, Senate and Governor's office were all controlled by Democrats. This change from split control to one-party control of legislative and executive branches impacted nearly all of the major issues at the State Capitol last year. Additionally, as redistricting substantively changed most legislative districts, all 100 members, including 32 freshman members, were operating in at least somewhat new territory.

Colorado legislators introduced a total of 613 bills in 2013, a reduction from the last couple of years. Of those, more than 440 bills reached Governor Hickenlooper's desk. He signed all of them; none was vetoed.

The Democrat majority was largely successful in addressing their top issues – the 4Gs: Guns, Grass and Gay Rights, but largely failed on Gas. Of the numerous oil and gas regulatory bills introduced, only Representative Mitsch-Bush's HB 1278, requiring stricter reporting of oil and gas spills and which the River District supported, passed. We were also successful in shaping and subsequently passing several water conservation bills, most notably SB 019, protecting water users' historical water use record when conservation measures are implemented; HB 1044, outlining a path for residential and commercial gray-water (re)use both indoors and, where lawful, outdoors; and SB 183, prohibiting Home Owners Associations from forbidding water conserving landscapes.



Yampa River as it flows beyond Maybell to its confluence with the Green River.

The River District was also largely successful in its legislative advocacy in last year's Colorado legislative session. Arising at a fall 2012 joint meeting with the Southwestern Water Conservation District board, the River District board directed pursuit of a legislative remedy to the most egregious aspects of the Colorado Supreme Court's Upper Yampa decision. Senate Bill 041 was the result. Despite opposition from select environmental groups, our coalition prevailed and the bill passed both houses unanimously.

As always, some of our most important accomplishments resulted from working early to avoid introduction of adverse proposals and actively opposing bad public policy when introduced. Last year we successfully opposed bills to cap the Colorado Water Conservation Board's (CWCB) severance tax revenues and a repeat run at legislatively mandated construction contract limitations. We were not successful, however, in striking a CWCBrequested expansion of use for state monies employed by the instream flow acquisitions program. However, past year's budget woes and attendant raids on water-related funds were avoided in 2013.

### Outlook for 2014:

• The Governor's Executive Order calling for a Colorado Water Plan clearly will dominate the water dialogue

- and perhaps funding – for the next couple of years.

• A 2013 Center for Colorado's Economic Future study concluded that the state's General Fund faces a serious structural imbalance because Medicaid growth and K-12 education spending will far exceed the growth rates of sales and income tax revenues. Accordingly, next year's budget will remain an annual legislative challenge, while longer term solutions are explored.

• Senator Schwartz will pursue additional agricultural water conservation legislation (beyond SB13-019). The water community committed to conducting a thorough exploration of agricultural water conservation in return for Sena-

tor Schwartz's agreement to truncate SB 019 during last year's session.

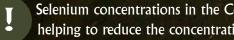
• 2013 being an odd-numbered year, only fiscal measures were on the fall ballot. A \$950 income tax increase for K-12 funding proposal was soundly defeated. Looking ahead to 2014, there will likely be a host of ballot initiatives, or at least initiative petitions, in the news and on the streets, including fiscal and social issues and notably another likely run at a Public Trust initiative.

#### WATER QUALITY FACTS:

Selenium exists naturally in the Mancos Shale derived soils common to Western Colorado. Studies in the Grand and Uncompany regions of Western Colorado suggest that selenium occurs primarily in shallow aquifers, which are present as a result of irrigation and water delivery through unlined canal networks.



### Gunnison River water quality.



Selenium concentrations in the Colorado River system can compromise aquatic life. The Colorado River District continues to actively be involved in helping to reduce the concentrations of this naturally occurring mineral to healthy levels in Western Colorado rivers.

### Federal Legislative Highlights

Although the first year of the new Congress' two-year session in 2013 was widely derided as the least productive in history, Congress and the administration made real progress on several important water-related priorities for the Colorado River District and Western Colorado.

#### Two bills encouraging and rewarding small bydroelectric investments were signed into law and another

is making sound progress. Congresswomen McMorris-Rogers (R-WA) and DeGette (D-CO) passed and President Obama signed into law H.R.267 providing incentives and funding research that favors small (less than 5 MW) hydro installations.

Congressman Tipton (R-CO) introduced H.R.678 to streamline the regulatory process and reduce administrative costs for small hydropower development at the Bureau of Reclamation's facilities. The River District testified in support of his bill before the Water and Power Subcommittee. Congresswoman DeGette, as majority whip, also deserves mention for her efforts to ensure bipartisan passage on the House floor for H.R.678. The Senate subsequently passed it unanimously, and the president signed it into law in August.

Additionally Congressman Daines (R-MT) introduced a complementary bill as a planned follow-up to H.R.678. This bill provides essentially identical hydroelectric authorizations and incentives for the 11 Reclamation projects authorized and constructed under the Water Conservation and Utilization Act of 1939. It passed the House on the unanimous consent calendar in December. Prompted by the U.S. Forest Service's (USFS) directive requiring ski areas to assign water rights to the USFS as a condition of permitting, Scott Tipton (R-CO) introduced H.R.3189, the Water Rights Protection Act. While the River District was an amicus in support of the ski areas' suit in opposition to the directive, the River District expressed concerns that the introduced bill may have unintended



Eight megawatts of hydro was installed at the Ridgway Reservoir in 2013. That is enough energy to power more than 2,000 Colorado homes. Towns like Aspen now have power contracts with the operators to meet new goals for clean renewable power generation for their communities.

consequences. Mr. Tipton agreed to amend his legislation to address River District concerns and provide a clear statement in the legislative history further addressing our concerns. The House Resources Committee passed the bill on a 19-14 voice vote with one Democrat joining the majority. Floor action by the full House was planned for early 2014.

Several Colorado wilderness bills were introduced by

Colorado's delegation in 2013. While none directly affected lands within the River District, we monitored these legislative proposals closely for precedent-setting water language and potential for resolution of other outstanding wilderness issues within the District. Encouragingly, all Colorado wilderness bills included expressed disclaimers of any reserved federal water rights. Additionally, several bills employed the

> precedent-setting language the River District developed in the Dominguez Wilderness Area legislation, allowing the wilderness boundary to "float" at the water's edge, rising and falling with high and low flows. This language is used to clearly exclude mainstem rivers from wilderness boundaries.

> While the federal budget remained unresolved at year's end, the River District was encouraged by and indebted to Colorado's Congressional delegation for its hard work and progress for continued and additional funding for critical water programs such as the National Resource Conservation Service's manual snow course program, forest-health stewardship programs and watershed protection and enhancement programs.

Finally, at year's end, Interior Secretary Sally Jewel announced the discontinuation of the short-lived but controversial Blueways watershed initiative created by former Secretary Ken Salazar. The River District and many western water users were very concerned about this broad and ill-defined program.

#### HEADWATERS FACTS:

In Colorado, roughly 7,000 abandoned mines continue to leach waste minerals into more than 1,600 miles of headwaters streams. The state's long mining history is clearly visible to motorists on Interstate 70 heading west from Denver to the ski areas of Summit County in the form of orange mine tailings, weathered structures and even in the names of some communities and ski trails.

#### Peru Creek in Summit County.

Water quality challenges begin at the headwaters in the upper basin. Toxic metals from 19th and 20th century mines still affect headwaters streams in the upper reaches of some Colorado River tributaries.

### H<sub>2</sub>O Outdoors: Students Gain Firsthand Knowledge about Colorado Water Issues

H<sub>2</sub>O Outdoors is a three-day, standards based, educational camp held at Keystone Science School in Keystone, Colo., that endeavors to provide Colorado high school students insight into the challenging world of Colorado water policy.



Students and instructors discuss resolutions to challenging Colorado water issues while representing key stakeholders in small groups.

The students learn about Colorado's water law while hiking the Continental Divide, conduct hands-on water quality experiments on a nearby stream and visit with experts who are working to solve water challenges.

Keystone Science School provided meals and dorm-style housing for all students and chaperones. Sponsorships from the Colorado River District, Aurora Water and Denver Water allow this program to be offered at no charge to participants and require only a nominal administrative fee. The goal was to create a program with a diverse geographic representation of students from across Colorado.

The curriculum includes site visits to see the snowpack at the Continental Divide, stream surveys and water measurements and hear from an expert panel.

Students heard brief presentations from experts about the

challenges of water management in Colorado. These experts then visited with students in small groups about the stakeholder role each student was assigned. The students debated and collaborated to create water management and policy recommendations. At the close of the program, students presented their findings during a "town hall" formatted dialogue.

### What did they learn?

Students were given pre- and post-surveys to assess what they learned. There was positive growth on all questions and many gave insightful answers to the free response questions.

### What is the "80/20" rule in Colorado?

"80% of the snow falls on the Western Slope, 20 percent of the people live there, and 20 percent of the snow falls on the Eastern Slope where 80 percent or more of the people live."

#### How do water issues affect your community?

"I have experienced water shortages due to droughts in which I've been asked to minimize the days I water my lawn." "It affects us because water is being sent to the Front Range." "Water issues affect us due to pollution and overuse."

### What conflicts arose with other stakeholders and were you able to come to a compromise?

"Due to the fact that I was a nonconsumptive stakeholder and only use 3 percent of Colorado's water for recreational purposes, I didn't experience conflicts but rather compromises among other stakeholders based on seasonal needs." - Student representing white water recreation. "We were able to find ways in which we could have safe streams and help provide water for everyone else." - Student representing Trout Unlimited. "I compromised with Denver Water to buy a certain amount of water a year for our equipment and our wells." - Student representing energy exploration company. "Denver Water and Aurora Water were attempting to buy our senior water rights so we agreed to irrigate more efficiently so we don't need as much water." - Student representing the State of Colorado.



Students travel up to the Continental Divide to understand how water is divided, transported and used in Colorado during H<sub>2</sub>O Outdoors.

### Water Management Student Recommendations:

- 1. Focus education efforts on young people to help them develop good water use habits early.
- 2. Hold an educational conservation event to educate the public about water use. Various stakeholders could contribute money, volunteer manpower and knowledge/expertise to this event.
- *3.* Use gray water repurpose household water for other domestic and irrigation uses.
- 4. Treat and clean water used in energy exploration and return it to rivers to increase in-stream flow.
- 5. Provide financial assistance to farmers for using more efficient irrigation.
- 6. Form partnerships between farmers and municipalities; municipalities will lease water rights from farmers and the money will help farmers.
  For more information on H<sub>2</sub>O Outdoors please visit: www.ColoradoRiverDistrict.org.

COLORADO WATER HISTORY FACTS: The first transmountain diversion in Colorado was constructed in 1860, to provide water for mining near the town of Fairplay. Since 1860, thirty ditches and tunnels have been constructed transferring approximately 400,000 to 600,000 acre feet of water each year through the Continental Divide for irrigation, domestic, commercial and industrial uses.

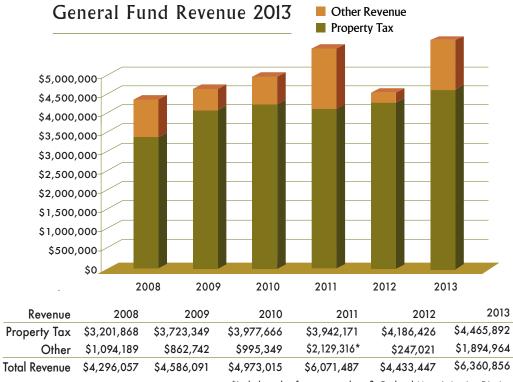
Highline Canal completed in 1883.

Engineering water along the Front Range: The Highline Canal and Cheesman Reservoir construction circa: 1885 and 1900.

The transportation and storage of water in the arid Front Range began in the 19th century. The thirst for transmountain diversions began about the same time. Today transmountain diversions are still on the minds of many water planners. However, increasing deficits within the Colorado Basin mean any new diversions would risk curtailment in the new climate scenario, be prohibitively expensive and could compromise stream health in Colorado.

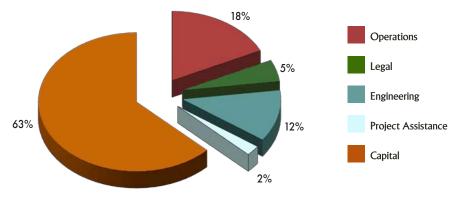
### **General Fund Report**

The Colorado River District conducts business through two budgets: One for General Operations and one for the Enterprise Fund. The General Budget is funded primarily by a property tax collected in the District's 15 counties. The effective tax rate is currently 0.242 mills.



\*Includes sale of property to benefit Orchard Mesa Irrigation District.

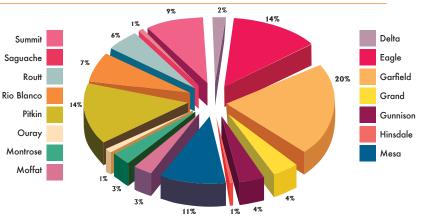
### General Fund Expenditures 2013



Expenditures	2008	2009	2010	2011	2012	2013
Operations	43%	35%	44%	41%	37%	18%
Legal	20%	12%	15%	13%	17%	5%
Engineering	27%	20%	32%	32%	35%	12%
Project Assistance	5%	2%	5%	11%	<b>9</b> %	2%
Capital Assets	5%	31%	4%	3%	2%	63%
Total Expenditures	100%	100%	100%	100%	100%	100%

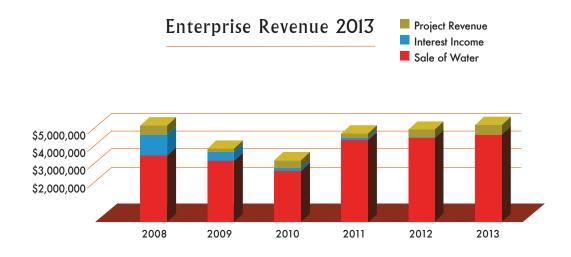
### Taxes Remitted by Counties in 2003 and 2013

	2013		2003		Ten Year Change
Delta	\$74,421.17	2%	\$44,794.48	1.84%	\$29,627
Eagle	\$651,985.54	14%	\$519,290.57	21.34%	\$132,695
Garfield	\$949,329.43	20%	\$230,147.61	9.46%	\$719,182
Grand	\$194,599.76	4%	\$119,016.26	4.89%	\$75,584
Gunnison	\$165,815.92	4%	\$92,332.31	3.79%	\$73,484
Hinsdale	\$12,943.17	1%	\$7,829.26	0.32%	\$5,114
Mesa	\$476,260.80	11%	\$238,751.12	9.81%	\$237,510
Moffat	\$116,569.46	3%	\$81,513.25	3.35%	\$35,056
Montrose	\$118,893.37	3%	\$67,566.20	2.78%	\$51,327
Ouray	\$44,155.40	1%	\$25,594.41	1.05%	\$18,561
Pitkin	\$666,760.70	14%	\$457,443.17	19.00%	\$209,318
Rio Blanco	\$328,761.96	7%	\$82,345.77	3.38%	\$246,416
Routt	\$277,582.44	6%	\$168,859.13	6.94%	\$108,723
Saguache	\$696.18	1%	\$514.54	0.02%	\$182
Summit	\$387,116.63	9%	\$297,770.61	12.23%	\$89,346
TOTAL	\$4,465,892	100%	\$2,433,769	100%	\$2,032,123



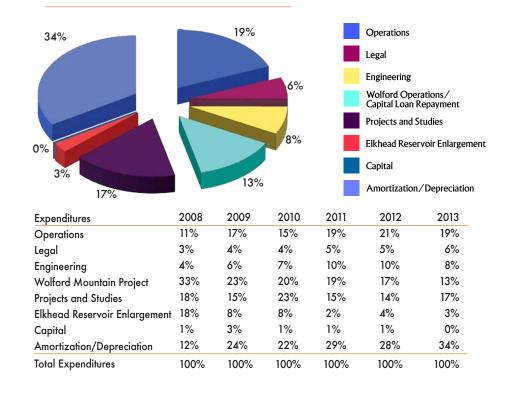
### **Enterprise Fund Report**

The District's Enterprise Fund is employed to build and operate reservoirs and conducts water leasing and sales programs. Enterprise Fund income is derived principally from water leasing and sales activities.



Revenue	2008	2009	2010	2011	2012	2013
Lease of Water Interest Income Project Revenue	\$3,719,347 \$704,606 \$436,270	\$2,298,026 \$264,918 \$662,370	\$2,313,222 \$113,182 \$345,391	\$3,952,206 \$74,460 \$326,536	\$4,091,918 \$9,601 \$507,532	\$4,357,160.82 \$26,582.29 \$561,747.94
Total Revenues	\$4,860,223	\$3,225,314	\$2,771,795	\$4,353,202	\$4,609,052	\$4,863,816

### Enterprise Expenditures 2013



#### Mount Daly in the Elk Mountains



### **Colorado River District 2013 Board of Directors**

The Colorado River District is governed by a 15-member Board of Directors. Each member is appointed to a three-year term by the respective County Commissioners in each of the District's 15 counties. Each year, a third of the Board seats are up for appointment. All policies, resolutions, budgets and major actions of the Colorado River District are approved by the Board. The Board meets in regular session quarterly, in the months of January, April, July and October. Special meetings are called as needed. To stay up to date on Board meetings, visit the District's website at www.ColoradoRiverDistrict.org.

To contact a Board member e-mail edinfo@crwcd.org or call 970-945-8522.



James L. Newberry 2013 President Grand County



Tom Gray



Jon Stavney

2013 Vice President

John Ely Pitkin County





Montrose County



**Rio Blanco County** 







Steve Acquafresca Mesa County



Tom Alvey Delta County

Rebie Hazard

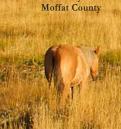
Saguache County



**Garfield County** 











Tom Sharp **Routt County** 

#### COLORADO RIVER BASIN FACTS:

Often called "America's Nile," the Colorado River is so carefully managed, each drop of its water is used many times in a single year, and basin reservoirs are capable of holding four times the river's annual flow. It is one of the most contested, recreated upon and controlled rivers on Earth. Diverted under peaks, utilized by turbines that create hydropower and depended upon by more than 36 million people in the West, the 1,450-milelong Colorado faces growing challenges from the headwaters in the Colorado mountains all the way to Mexico. These challenges are associated with increasing population, declining ecosystems, greater energy and agricultural demands for its water and climate change.

The biggest reservoir in the West is the accumulated snowpack at 9,000 foot elevation and above.

The Colorado River Basin.

As a result of climate change, the mean annual runoff in the Colorado River Basin is projected to decrease by 8.5% by 2050. In the future, this will have wide ranging effects on how we use and manage water from eastern Colorado all the way to Mexico. Colorado River District

Protecting Western Colorado Water Since 1937

Dan Birch Deputy General Manager

John Currier Chief Engineer

Kem Davidson Project Caretaker

Laurie DePaolo **Executive Assistant** 

**Mike Eytel** Water Resources Specialist

Peter Fleming General Counsel

Alesha Frederick **Business Support Specialist** Denise Hussain

Records Coordinator / Information Specialist

Mary Kalmes Chief Accountant

A REAL PROPERTY

Dave Kanzer Senior Water Resources Engineer

Eric Kuhn General Manager Don Meye Senior Water Resources Enc Martha Moore **Public Affairs Specialist** 

Lorra Nichols Paralegal

lan Philips Accountant Audrey Turner Administrative Chief lim Pokrandt Jason Turner **Communication & Education Specialist** 

Mannin Community

David Smith Engineer Tech

Meredith Spyker Administrative Assistant

Ray Tenney Deputy Chief Engineer

External Affairs Manager

Chris Treese

Senior Counsel

The Colorado River at Glenwood Springs.

The Colorado River District which was established in 1937 by state law. Our mission: To lead in the protection, conservation, use and development of the water resources of the Colorado River Basin for the welfare of the District, and to safeguard for Colorado all waters of the Colorado River to which the state is entitled.

Design, Concept and photography: Art Burrows/Ajax D History Museum and Denver Public Library archives