

Upper Rio Grande Basin Water Operations Review

“Stacking the Deck” or Improving Chances for Better Water Operations

Water management in the upper Rio Grande basin evolved over decades, the result of separate and distinct authorizing legislation and accumulated policies of different agencies with differing missions and methods. Coordination among these agencies became especially critical in the mid-1990s with the designation of two endangered species in the central river system. To meet species and habitat needs in managing the Rio Grande, those who made daily decisions about storage, diversion, and flow realized they needed two tools: a common computer model to facilitate the sharing of realtime data, and codification of existing procedures by which the river has come to be managed.

Toward those ends, the U.S. Army Corps of Engineers (Corps), the U.S. Bureau of Reclamation (Reclamation), and the New Mexico Interstate Stream Commission (NMISC) invited tribes, acequias, irrigation districts, municipalities, planning groups, environmental advocates, and members of the public to participate in a review of water management facilities on the upper Rio Grande to identify opportunities for expanded flexibility. New, alternative practices were proposed wherever there appears to be latitude under current authorities. These fall under general themes, including storage of native Rio Grande water, channel capacity, carry-over water waiver policies, and contracts for sediment pools. The interdisciplinary team conducting the Review came to think of these themes as “suits” and the draft alternatives as individual “cards” that may improve their playing hand for meeting ever changing water management challenges.

Just as some cards are not “keepers”, some draft alternatives will fall out in the initial screening process. Three criteria will be used in screening. Each alternative must be (1) physically possible, (2) in accordance with the purpose and need statement in the Memorandum of Agreement signed by the three joint lead agencies to conduct the Review and prepare an environmental impact statement (EIS), and (3) within the current authorities of the agencies involved. It is important to note that alternatives that fail to meet this last criterion will be carried through the process and listed in the EIS in a section specifically devoted to alternatives outside the authorities of the joint lead agencies. These alternatives may then be considered for future implementation.

The Hand Water Operators Hold Now



Currently, water managers hold a number of “cards” they can play regarding operation of the upper Rio Grande system. The ten water operations facilities in this basin can be manipulated individually, or in concert, to address various situations. Of the ten, only El Vado Dam is outside the scope of the Review. The authorized function and current operation of each facility is described briefly below, followed by any draft alternatives which have been proposed for consideration during this Review.

Why Should You Care?

Policy decisions about changes in water operations will be made by each of the joint lead agencies. The agencies involved will consider the results of the analyses of the alternatives and the public input provided during the Review and EIS development. Through applause and enthusiasm, or apprehension and criticism, government policy can be influenced by public involvement. It is your right and responsibility, and we look forward to hearing from you.

Closed Basin Project

Located near Alamosa, Colorado, Reclamation’s Closed Basin Project was designed to produce 600,000 acre feet (af) of ground water from wells in any ten-year period to help Colorado meet downstream delivery obligations. Up to 5,300 af of that water may be used for wildlife, and deliveries to the river must be in accordance with the Clean Water Act, with no more than two feet of drawdown to the water table being allowed. Well degradation is presently limiting annual production to about 25,000 acre feet per year (afy), but Reclamation has initiated a rehab program to improve production.

No draft alternatives have been proposed for the operation of the Closed Basin Project.

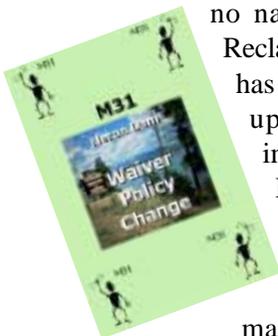
Platoro Dam

Also in Colorado, Platoro Dam on the Conejos River is a Reclamation facility operated by the Conejos Water Conservancy District. A joint-use pool is used for both flood space and conservation: if flood space is needed, water in conservation storage is released to make room. A 3,000 af permanent pool is also maintained for recreation, fish, and wildlife, and Platoro is managed to preserve fish and wildlife habitat downstream. Flood control operation at Platoro is the only function under review.

As with the Closed Basin Project, no alternatives were identified.

Heron Dam

Heron Dam on Willow Creek in northern New Mexico stores no native Rio Grande water. Built by Reclamation in the late 1960s, the reservoir has a firm yield of 96,200 afy from the upper Colorado River system and imported through the San Juan-Chama Project. Transbasin deliveries are limited to 270,000 af in any one year, and up to 1,350,000 af in any ten years. Reclamation stores up to a maximum of 400,000 af to meet the demands of its 16 contractors, who currently



must take delivery of their annual allotments by December 31 of the irrigation year. Carryover storage of unused water is not permitted except by waiver.

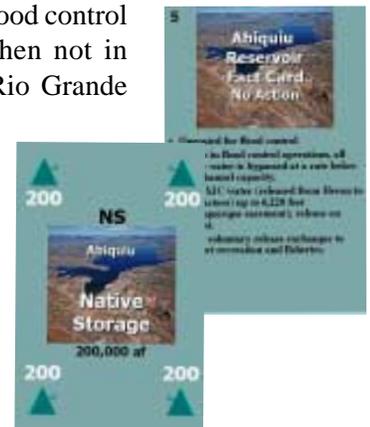
Draft alternatives for Heron include altering the waiver policy to allow for changes in the timing of deliveries. The “no-action” waiver delivery date is April 30. Additional delivery dates under consideration are March 31 and August 31, as well as waiver elimination entirely.

El Vado Dam

Next in the sequence of facilities on the upper Rio Grande is El Vado Dam on the Rio Chama. This reservoir is not part of the Water Operations Review and changes to its operation are not being considered. Historic operation of the facility will be modeled when evaluating alternatives.

Abiquiu Dam

Abiquiu, also on the Rio Chama, is owned and operated as a flood control facility by the Corps. When not in flood operations, native Rio Grande water is bypassed at a rate of up to 1,800 cubic feet per second (cfs) to maintain safe channel capacity downstream. The reservoir can be used to store San Juan-Chama water up to elevation 6,220 feet, storage easements for which are owned by the City of Albuquerque.



Two sets of draft alternatives were identified for Abiquiu. The first explores a range of options for storage of native (Rio Grande) water. The options include storing 20,000 af, 50,000 af, 100,000 af, or 200,000 af of native water until it is needed downstream. The second set involves broadening the range of channel capacity. The “no action” option maintains the current capacity of 1,800 cfs; another would decrease capacity to 1,200 cfs; options three and four increase capacities to 2,000 cfs and 2,500 cfs respectively.



**Project Area
for
Upper
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Water
Operations
Review**

Cochiti Dam



Another flood control facility operated by the Corps, Cochiti spans the mainstem of the Rio Grande south of Santa Fe, New Mexico. The Corps is authorized to hold carry-over floodwater in the reservoir after July 1st, or

when the natural flow at Otowi gage falls below 1,500 cfs, whichever comes first. A permanent pool of 1,200 surface acres (about 50,000 af) of San Juan-Chama water is maintained for recreation, fish, and wildlife.

Draft alternatives for Cochiti explore changes in channel capacity downstream. In addition to the “no action” option of 7,000 cfs, a range of capacities will be evaluated, including 6,000 cfs, 8,000 cfs, 9,000 cfs, 10,000 cfs, and 12,500 cfs, as measured at the Albuquerque gage.

Jemez Canyon Dam

A sediment and flood control structure on the Rio Jemez, Jemez Canyon Dam is currently operated as a dry reservoir by the Corps. Inflows are released as quickly as possible without creating flood risks downriver.

Jemez Canyon Reservoir could possibly be operated to better manage sediments. The facility currently contains about 19,000 af of sediment.

The draft “no action” alternative is to operate Jemez Canyon as a dry reservoir with no contract for a sediment pool. Other draft alternatives include contracting for a sediment pool of some amount between 4,000 and 24,000 af; variables include the amount of water to be stored, and who the contracting entity would be.

Low Flow Conveyance Channel

A unique fixture on the mainstem Rio Grande, the Low Flow Conveyance Channel (LFCC) was constructed by Reclamation in the 1950s to aid delivery of Rio Grande Compact waters to Elephant Butte Reservoir to improve drainage and supplement irrigation water supply. The riprap-lined channel parallels an approximately 60-mile reach of the Rio Grande, collecting seepage and reducing evaporation. The usefulness of the LFCC is somewhat governed by the water level at Elephant Butte; when outfall conditions allow, up to 2,000 cfs can be diverted into the LFCC at San Acacia. The facility can also provide water to

both Bosque del Apache National Wildlife Refuge and to irrigators in the Middle Rio Grande Conservancy District. In 2000, and again in 2001, the New Mexico State Engineer granted Reclamation emergency authorization to pump water back into the river channel from the LFCC at key points during low flow to support endangered species habitat.

If the LFCC outfall is connected to Elephant Butte Reservoir, Reclamation can, at its discretion, divert up to 2,000 cfs into the LFCC. In framing draft alternatives for the facility, water managers will instead evaluate how much water might be left in the Rio Grande and **not** diverted.

Draft alternatives offer a range of operations. At one end, no diversions would be made from the river to the LFCC at San Acacia.

Other options involve leaving 400 cfs in the river; leaving 150 cfs in the river; leaving 50 cfs in the river; and ensuring 50 cfs in the river at the San Marcial gage.



Elephant Butte Dam

Elephant Butte is the storage facility for Rio Grande Compact water destined for Texas and Mexico. Due to litigation, however, water supply issues will not be addressed during the basin Water Operations Review.

Only the operation of the facility’s “prudent flood space” will be evaluated. A 50,000 af flood space is maintained from April 1 to September 30, and 25,000 af of flood space is authorized between October 1 and March 31. Flood release is required when the reservoir level is within the prudent flood space. Generation of hydroelectric power is a secondary purpose of the facility.

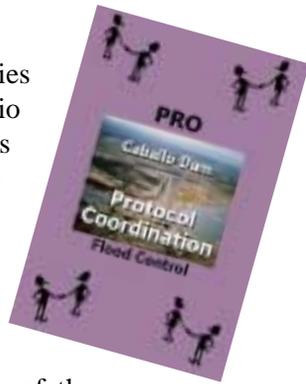
The Review will necessarily be “more about timing than space,” and also about how Reclamation and the Corps work together. Some policies have simply evolved over the 80-year history of the dam, and never been written down, or even formally agreed to. Managers hope that these coordinated procedures will be documented in the Review.

No draft alternatives have been proposed for Elephant Butte Dam, but protocol will be developed and documented for the prudent flood space.

Caballo Dam

Caballo is the last of the facilities to be included in the Upper Rio Grande Basin Water Operations Review, and similar to Elephant Butte, only flood control activities will be evaluated. Though flood control operations at Caballo are dictated and directed by the U.S. Section of the International Boundary and Water Commission (USIBWC), during times of high spring flow the Corps has occasionally held back floodwater at Cochiti Reservoir so Caballo is not put into a bind. Since the purpose of Cochiti Dam is to protect the middle valley, some risk is involved when floodwater is retained upstream to accommodate flood control operations below Caballo. The practice has never been formalized and requires coordination between the Corps, Reclamation, and USIBWC.

No draft alternatives have been proposed for Caballo Dam, but protocol for use of Cochiti Dam to accommodate flood control operations below Caballo will be developed and documented.



water managers need contingency plans for a whole range of conditions, from drought to high water.

Equally unpredictable are human complications which burden the system. These include complex storage and delivery requirements, increasing user demand, water quality concerns, flood and sediment constraints, the need to preserve historic and cultural resources, and of course, endangered species issues. Such circumstances are the “drivers” which make cooperation and coordination necessary.

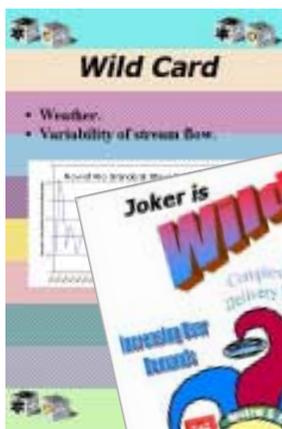
Aces

Finally, there are a couple of additional cards that serve to augment the current hand. One is communication. The other is mitigation.

Better communication between water management agencies really began with endangered species issues, but the Review is an occasion to build on that beginning, improving communication between agencies, fostering better coordination with the tribes, and increasing interaction with the public. It also affords an opportunity to clarify how water management agencies operate. As the Review has already shown, good communication can be cultivated through regular meetings, and the use of electronic media and user-friendly educational materials.



Jokers and Other Wild Cards, or “Where the Wild Things Are”



The ten manmade facilities on the upper Rio Grande are not the only cards that water managers must assess. Nature, too, affects the success of the hand, through weather and the hydrologic system. Precipitation, snow pack, daily temperature, evapotranspiration, and stream flow are all wild cards, variables that are certain but unforeseeable, and



The other “ace” system operators hold is mitigation. As current and possible practices are evaluated, managers may find that improved river function in one place has a detrimental affect on bank stability somewhere else. Detailed evaluation of options will help to illuminate where adverse affects might occur, and the interdisciplinary review team will include mitigation as needed in the final set of alternatives.

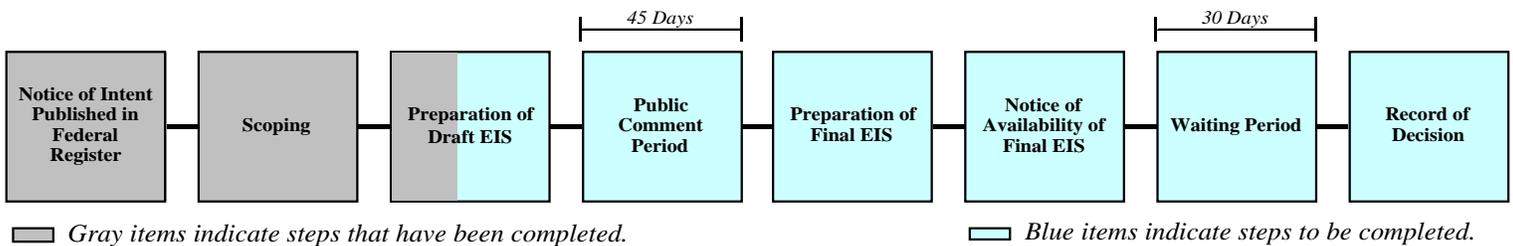
Public Involvement Opportunities

NOTICE OF PUBLIC INFORMATION MEETINGS For development of a draft Environmental Impact Statement (EIS) for Upper Rio Grande Basin Water Operations

Meetings will be held to describe draft alternatives and to get feedback from the public before the alternatives are finalized. The public meetings will begin with a presentation that describes the current operations, which is the draft "No Action Alternative". The draft alternatives are being developed in an iterative process, which is why input from the public is so important. The public will be provided an opportunity to comment on the draft alternatives identified, using an informal open house. All meetings will begin at 7:00 p.m. and end at 8:30 p.m.

Las Cruces, NM	Tuesday, January 15	NM OSE, Dist. IV Office, 1680 Hickory Loop, Suite J
El Paso, TX	Wednesday, January 16	Chamizal National Memorial, 800 S. San Marcial
T or C, NM	Tuesday, February 5	City Council Chambers, 405 W. Third Street
Socorro, NM	Wednesday, February 6	USBR Socorro Field Division, 2401 State Road 1
Albuquerque, NM	Tuesday, March 19	U.S. Army Corps of Engineers, 4101 Jefferson Pl. NE
Santa Fe, NM	Wednesday, March 20	NM Dept. of Game & Fish, 1 Wildlife Ln.
Espanola, NM	Tuesday, April 16	Rio Arriba County Complex, 1122 Industrial Rd.
Abiquiu, NM	Wednesday, April 17	Abiquiu Elem. School, US Highway 84, Gate #21342
Alamosa, CO	Tuesday, May 14	USBR Alamosa Field Div., 10900 HWY 160 E.
Pilar, NM	Wednesday, May 15	BLM Visitors Center, HWY 68

Following this public process, the alternatives will be further refined and a preferred alternative will be selected while portions of the Draft EIS are being written. The Draft EIS is scheduled for completion in February 2004, followed by a 45-day public review and comment period, including a final round of public meetings.* Revisions to the draft and details of responses to comments received during the public review period will both be printed in the Final EIS, scheduled for completion in November 2004. The Record of Decision on the planned changes will be made no sooner than 30 days following the issuance of the Final EIS.



* Public input can occur during any phase by contacting the project managers.

Additional information about the Upper Rio Grande Basin Water Operations Review and EIS is available online at <http://www.spa.usace.army.mil/urgwops/>. The project managers listed below are the points of contact.

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