

**SUBMIT OPTION SUBMITTAL FORM BY:**

1. EMAIL TO: [COLORADORIVERBASINSTUDY@USBR.GOV](mailto:COLORADORIVERBASINSTUDY@USBR.GOV)

2. U.S. MAIL TO: BUREAU OF RECLAMATION, ATTENTION MS. PAM ADAMS, LC-2721, P.O. BOX 61470, BOULDER CITY, NV 89006-1470

3. FACSIMILE TO: 702-293-8418

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## Option Submittal Form

**Contact Information (optional):**

**Keep my contact information private.**

Contact Name: _____	Title: _____
Affiliation: _____	
Address: _____	
Telephone: _____	E-mail Address: _____

Date Option Submitted: February 1, 2012

**Option Name:**

Upper Basin Water Bank
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**Description of Option:**

<p>This option involves creating an Upper Basin Water Bank that would increase flexibility using existing infrastructure and institutional arrangements to allow exchange of pre-1922 water rights to critical junior water rights users of Colorado River water in the event of curtailment pursuant to the Colorado River Compact. Banking could entail proactive or last-minute fallowing via storage or by direct exchange. This option envisions an Upper Basin bank as a whole versus individual water banks in each state. For an Upper Basin Bank, Upper Basin states would need to receive credit in Lake Powell to account for their contributions to the bank.</p>
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**Location:** Describe location(s) where option could be implemented and other areas that the option would affect, if applicable. Attach a map, if applicable.

The areas within CO, NM, UT, and WY where Colorado River water is used.
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**Quantity and Timing:** Roughly quantify the range of the potential amount of water that the option could provide over the next 50 years and in what timeframe that amount could be available. If option could be implemented in phases, include quantity estimates associated with each phase. If known, specify any important seasonal (e.g., more water could be available in winter) and/or frequency (e.g., more water could likely be available during above-average hydrologic years) considerations. If known, describe any key assumptions made in order to quantify the potential amount.

Amount would vary depending on available pre-1922 water rights that can be fallowed or deficit irrigated temporarily. Amount also varies with need, which is defined both by obligations under the Colorado River Compact and yet-to-be-defined 'critical junior uses.' These are matters for each state to consider based on its specific circumstances and priorities.
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## Additional Information

**Technical Feasibility:** Describe the maturity and feasibility of the concept/technology being proposed, and what research and/or technological development might first be needed.

Feasible as it does not require new infrastructure.

**Costs:** Provide cost and funding information, if available, including capital, operations, maintenance, repair, replacement, and any other costs and sources of funds (e.g., public, private, or both public and private). Identify what is and is not included in the provided cost numbers and provide references used for cost justification. Methodologies for calculating unit costs (e.g., \$/acre-foot or \$/million gallons) vary widely; therefore, do not provide unit costs without also providing the assumed capital and annual costs for the option, and the methodology used to calculate unit costs.

Costs will be negotiated, and participation in the bank will be voluntary and compensated. Cost of banked water is likely to include compensation to pre-1922 water rights holders and to affected communities. Costs may include direct compensation to farmers or other water users; payment to water distribution organizations to cover costs of infrastructure maintenance and administration; payment to counties in lieu of taxes; weed control, and payment into a fund reserved for compensation to directly affected third parties (such as crop sprayers and farm suppliers when banked water comes from agriculture). Fallowing and deficit irrigation requires no infrastructure or operating costs beyond typical infrastructure operating costs and administration.

**Permitting:** List the permits and/or approvals required and status of any permits and/or approvals received.

Use of federal facilities/reservoirs may trigger NEPA, requiring either an EA or EIS.

**Legal / Public Policy Considerations:** Describe legal/public policy considerations associated with the option. Describe any agreements necessary for implementation and any potential water rights issues, if known.

There are three major legal considerations. First, there are federal legal issues. For example, if federal reservoirs are used to store banked water, then such use will need to be authorized per federal laws or regulations. Second, there will be State water law issues to resolve, especially related to administration (e.g., accounting for exchanges of water to municipal uses on a temporary basis). Third, there are legal issues related to Compact compliance when shared among the four Upper Basin states. There is high likelihood that all legal issues can be resolved. Interstate water banking is unprecedented in the Upper Basin and political concerns may exist. However, there is precedent for interstate water sharing in the Lower Basin, and Upper Basin states may conclude that water banking is desirable if benefits can be clearly defined and rights are protected.

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**Implementation Risk / Uncertainty:** Describe any aspects of the option that involves risk or uncertainty related to implementing the option.

LOW. Water banking is a no-regrets activity, with low risk of stranded capital and minimal environmental impacts.

**Reliability:** Describe the anticipated reliability of the option and any known risks to supply or demand, such as: drought risk, water contamination risk, risk of infrastructure failure, etc.

No known risks.

**Water Quality:** Identify key water quality implications (salinity and other constituents) associated with the option in all of the locations the option may affect.

Potential improvements to water quality depending on where fallowing or deficit irrigation is implemented.

**Energy Needs:** Describe, and quantify if known, the energy needs associated with the option. Include any energy required to obtain, treat, and deliver the water to the defined location at the defined quality.

Energy Required	Source(s) of Energy
No known impacts.	

**Hydroelectric Energy Generation:** Describe, and quantify if known, any anticipated increases or decreases in hydroelectric energy generation as a result of the option.

Location of Generation	Impact to Generation
	Potential for increase or no net decrease in hydroelectric energy generation to the extent that flows between fallowing and deficit irrigation location and Lake Powell pass through turbines.

**Recreation:** Describe any anticipated positive or negative effects on recreation.

Location(s)	Anticipate Benefits or Impacts
	Releases from reservoirs for delivery of water to Powell could be scheduled to maximize recreation benefit.

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**Environment:** Describe any anticipated positive or negative effects on ecosystems within or outside of the Colorado River Basin.

Location(s)	Anticipated Benefits or Impacts
	Releases from reservoirs for delivery of water to Powell could be scheduled to maximize instream and riparian environmental benefit. Late season return flows or flows in exchange reaches may be diminished, depending on operations.

**Socioeconomics:** Describe anticipated positive or negative socioeconomic (social and economic factors) effects.

Economic impacts to rural/source communities should be mitigated through direct payments to irrigators as well as payments to local institutions (e.g. county governments) and dependent businesses (e.g. crop sprayers) to compensate for revenue losses. Mitigation is expected to be defined in terms of negotiated banking agreements.
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**Other Information:** Provide other information as appropriate, including potential secondary benefits or considerations. Attach supporting documentation or references, if applicable.

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