

# Option Submittal Form

Contact Information (optional):

Keep my contact information private

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

Date Option Submitted: 2/1/12

Option Name:

Water Banking and Transfer Scheme

Description of Option:

Development of integrated scheme whereby select parties located throughout Colorado River Basin (i.e., on a basinwide scale) are capable of transferring and/or banking portions of unused water entitlements for future use by themselves or other select parties. Alternatively, if a basinwide scheme of this type is deemed infeasible, development of such a scheme within the Upper Basin and/or evolution of existing mechanisms in the Lower Basin (water banking, QSA transfer provisions, ICS program) to implement such a scheme in that sub-basin. "Select parties" authorized to participate in this basinwide (or, alternatively, sub-basinwide) scheme should at a minimum include sovereigns who possess entitlements under the current framework of the Law of the River -- namely, Mexico, basin states, and tribes. Participation by non-sovereign parties -- e.g., major water users holding BCPA section 5 contracts in the Lower Basin -- likewise should be considered. Also worth considering is authorization of parties seeking to secure (augment) instream flows through participation in the scheme. The design of this scheme should be informed by reference to the related (innovative) measures developed in the Lower Basin in recent years (as noted above).

**Location:** Describe location(s) where option could be implemented and other areas that the option would affect, if applicable. Attach a map, if applicable.

A basinwide scheme would be preferable -- alternatively, an Upper Basin or Lower Basin scheme.

**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.

TBD. Potentially worthwhile assessments of these quantities might be calculated by referencing participation and activity levels associated with implementation of the innovative Lower Basin mechanisms in recent years (again, noted above).

## 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.

The innovative Lower Basin measures noted above likely would provide useful starting points for the conceptual and technological aspects of this option, including in relation to implementation processes (e.g., accounting and verification methods) and infrastructure use (e.g., aquifer storage and recovery methods).

**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.

Again, cost- and funding-related information associated with implementation of the innovative Lower Basin measures likely would prove insightful.

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

It is possible that implementation of this option would involve normal NEPA and ESA processes, particularly in relation to infrastructure components.

**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.

Significant disagreements between the Upper Basin and Lower Basin states historically have existed about the legality of an interbasin water transfer scheme under the current terms of the Law of the River. Political will shapes legal frameworks, however. It would be necessary to assess the various provisions of the Law of the River that assertedly stand in the way of this option. And, in turn, it would be necessary to craft the legal architecture of this option in a way that either comports with or amends any problematic provisions.

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

Failure to address the legal considerations just noted may give rise to legal challenges to this option.

**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.

N/A

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

To the extent this option results in higher instream flow levels -- e.g., either via delivery arrangements or authorization of parties to participate in this option to secure (augment) instream flows -- salinity levels foreseeably would be decreased.

**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
Potential energy requirements to facilitate deliveries	TBD (existing sources or new ones)

**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
Delivery arrangements may impact hydropower operations basinwide	TBD

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

Locations	Anticipate Benefits or Impacts
Basinwide	Potential benefits from augmented instream flows (see above)

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

Locations	Anticipated Benefits or Impacts
Basinwide	Potential benefits from augmented instream flows (see above)

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

The reallocations stemming from water transfers effected by this option potentially would have a wide range of social and economic impacts. It would be advisable to integrate an efficiently-designed review process into this option whereby potential third-party impacts of proposed transfers (and related information) would be assessed in the review process. Particularly relevant in this regard are the social and economic impacts of proposed transfers involving moving water away from agricultural communities. Also notable is the foreseeable benefits to basin states' and tribes' tax bases and publicly-funded programs resulting from more efficient water use and (in some cases) revenue derived from these transfers.

**Other Information:** Provide other information as appropriate, including potential secondary benefits or considerations. Attach supporting documentation or references, if applicable.

I only note that the full scope of entitlements held by water users in the basin -- sovereigns, water organizations, and individuals -- are founded on the tenet of beneficial use (i.e., the basis, limit, and measure of these entitlements). Beneficial use requires assessment of the type of uses to which these entitlements are being put (economic efficiency) and also the manner in which the water is being used for these types of uses (hydrological efficiency). In short, the existence of a basinwide (or, alternatively, sub-basinwide) scheme like that noted here would promote both forms of efficiency, and in so doing likewise would promote fidelity to the beneficial use tenet.