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:

Watershed Management Improvements (Soil Grouting, Irrigation Practices, Utilizing Stock Ponds and Small Diversions)

Description of Option:

Soil Grouting – Soil grouting is the injection of slurry or grout into the subsurface profile of soil. The grout fills cracks and voids in the soil and is used to make the soil more water resistant/impermeable. Soil grouting could reduce the amount of water seepage around dams and water delivery systems and consequently, trim down water losses. In addition, soil grouting can increase soil stability in areas where water flow control is a problem.

Irrigated agriculture - The use of Colorado River water could be much more efficient via better practices. Improving irrigation practices could be achieved by effecting changes in the ways farmers use water in semi-arid deserts like the Imperial Valley. The science surrounding water conservation for irrigation practices is constantly improving. Providing funding and incentives for irrigation conservation in local watersheds could improve the use efficiency of imported water during times of critical need.

Removing illegal small diversions and unnecessary stock ponds. In local catchments of the San Diego area, upstream of reservoirs, there are a lot of stock ponds and small diversions. These supply relatively valueless livestock and agricultural operations. Losses in these probably account for significant water. The elimination of these stock ponds and small diversions could allow us to retain more runoff for our reservoirs and increase our local supplies for more beneficial uses. Other jurisdictions could begin us this same tactic and improve their watershed supplies.

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

Local catchments

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.

This could produce widely varying results. The majority of watersheds in the arid Southwest are already employing some watershed management techniques because they are relatively low cost solutions. Still there is always room for improvement and employing these management practices could provide significant gains in rural areas. Many of these practices can be employed at any time with a relatively short return of available water.

Reducing illegal diversions and stock ponds collectively could provide large quantities of savings, but individually don't provide significant gains.

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.

Soil grouting and irrigation conservations practices are easily implemented. Going after illegal diversions and stock ponds could prove near impossible without policy changes.

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 are widely varying depending upon the size of the project.

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

Permitting for soil grouting projects and irrigation management practices would be relatively easy.

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 significant legal hurdles to going after illegal water diversions and many states just don't have the resources to implement programs to address the issue. Complicated water rights n the basin states may prevent an agency's ability to divine whether a water right is illegal or not.

Public Policy considerations for some of these practices are broad. Asking farmers to implement additional conservation measures in the current economic climate could be too much. Much the same for going after illegal diversions, property and water rights are not easily prescribed and could be burdensome for small individual gains.

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

Watershed management and conservation practices are easily implemented. However there is significant uncertainty to the numbers and locations of illegal diversions and stock ponds in urban watersheds.

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.

Once implemented, these could prove reliable sources of conservation

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

Depending on the application, soil grouting could cause some detrimental water quality effects if grouting material is not properly handled.

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
Unknown	NA

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
NA	For soil grouting in dams, could increase the efficiency of the dam and boos

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

Locations	Anticipate Benefits or Impacts
NA	NA

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

Locations	Anticipated Benefits or Impacts
NA	All of these could both have benefits and detriment to the environment

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

Could provide the opportunity for more integrated water management programs, where all entities become important stewards of the local water sources.

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

NA