SUBMIT OPTION SUBMITTAL FORM BY:

1. EMAIL TO: 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

Option Submittal Form

Contact Information (optional): ☐ **Keep my contact information private.**

Contact Name: _____ Title: _____

Affiliation: _____

Address: _____

Telephone: E-mail Address:

Date Option Submitted: 2/1/2012

Option Name:

Inclusion of USGS Stream Gages in Colorado River Basin Supply and Demand Study

Description of Option:

To help address current and future imbalances between supply and demands in the basin, it is critical that the Basin Study consider all flow-data available, including U.S Geological Survey (USGS) Streamflow monitoring information. Impacts to Basin resources, such as recreational whitewater and river boating cannot be comprehensively assessed using the limited Colorado River Simulation System model outputs. Inclusion of streamflow information provided by USGS monitoring is necessary to establish baseline reference values for Recreational resources, as well as to evaluate effects on non-consumptive demands across the basin and the foundation these demands provide for tourism and recreation economies.

This Option is non-structural and is proposed as a means to improve limitations of CRSS modeling of deliveries for consumptive demands under future scenarios, on non-consumptive demands. Inclusion of USGS streamflow data will inform a broader view of Basin-wide impacts or improvements to Non-consumptive demands, and assist in demonstrating the specific timing, magnitude, and potential changes to whitewater recreational resources from options and strategies to address future imbalances.

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

Location(s) of USGS Streamflow data, that can assist in evaluating impacts on Colorado River Basin Recreational Resources:

09359020 Animas River Below Silverton;

09361500 Animas River at Durango;

09050700 Blue River below Dillon, CO;

09057500 Blue River below Green Mountain Reservoir;

09126000 Cimmarron River near Cimmarron;

09034250 Colorado River at Windy Gap;

09058000 Colorado River at Kremmling;

09070500 Colorado River near Dotsero,

09163500 Colorado River near UT-CO State Line;

09081600 Crystal River above Avalanche Creek;

09169500 Dolores River at Slickrock;

09064600 Eagle River near Minturn, CO;

09114500 Gunnison River near Gunnison, CO;

9072500 Colorado River At Glenwood Springs

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9095500 Colorado River Near Cameo

9109000 Taylor River Below Taylor Park Res.

9124700 Gunnison River Above Blue Mesa Res.

9127800 Gunnison River At Crystal Res.

Gunnison River below Gunnison Tunnel

9152500 Gunnison River Near Grand Junction

9177000 San Miguel River

9169500 Upper Dolores River

9180000 Dolores River Near Cisco

9180500 Colorado River Near Cisco

9211200 Green R Bel Fontenelle Res

9217000 Green R. Nr Green River WY

9234500 Green River Near Greendale

9251000 Yampa River Near Maybell

9260000 Little Snake River Near Lily

09260050 Yampa River at Deerlodge

09261000 Green River at Jensen

9302000 Duchesne River Near Randlett

9306500 White River Near Watson

9315000 Green River At Green River UT

9328500 San Rafael River Near Green River

9355500 San Juan River Near Archuleta

9379500 San Juan River Near Bluff

9380000 Colorado River At Lees Ferry

9402000 Little Colorado River Near Cameron

9402500 Colorado River Near Grand Canyon

9415000 Virgin River At Littlefield

9421500 Colorado River Below Hoover Dam

09497500 Upper Salt River

09474000 Upper Gila River

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.

In an effort to target recreational whitewater boating demands, non-consumptive needs should be modeled at most streamflow gages between March 1, and October 15. For larger recreational resources (Colorado River mainstem), non-consumptive needs can be assessed year-round.

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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.

CRSS is operated on a monthly time step with outputs reported as monthly volumes. However, during the course of a month, the daily flow rates may change considerably and have a significant impact on the recreational whitewater resource. Therefore, the assessment of impacts on recreational resources requires a temporal disaggregation of modeled monthly flow volumes to daily average flow rates. The disaggregated flow rates can be compared to the non-consumptive flow ranges for each location.

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.

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

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.

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

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

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

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

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

Location(s)	Anticipate Benefits or Impacts

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

Location(s)	Anticipated Benefits or Impacts

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

Conducting a comprehensive assessment of recreational non-consumptive demands at each CRSS and USGS location in the basin will help identify future impacts on the tourism and flow-dependant recreation economies throughout the basin. Disclosure of these impacts will foster greater understanding of future water supply, and the economic impacts of various options and strategies to address water supply imbalances.

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

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