

**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: 1/27/2012

**Option Name:**

Mexico to Imperial Dam Desalination Project
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**Description of Option:**

<p>We propose to engineer, finance, procure, construct and operate a 500,000 AFY desalination project using seawater from the Sea of Cortez. The desalination plant(s) would be sited near the Sea of Cortez, with the desalinated water transmitted via pipeline across the US border near San Luis Rio Colorado and delivered into the Imperial Dam.</p> <p>Execution team includes Empresas ICA, the largest engineering and construction in Mexico, and Acciona SA, a Spanish conglomerate that specializes in construction and infrastructure. Between these parties and Hannon Armstrong, we have the development capital, financing expertise, balance sheet support, construction capability, environmental permitting experience, and political connections in Mexico City and Washington to make this ambitious project happen.</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.

We have provided a powerpoint map along with this proposal.
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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.

We believe that we could break ground within 3-years, and start delivering water about 2-years after that. Phasing up to the 500,000 AFY would take another 3 years. Conservatively, we see delivery of the full 500,000 AFY to require between 8-10 yrs of permitting, development and construction. Delivery would occur under a 40-year agreement.
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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.

The project will be comprised entirely of proven and mature technologies.

**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.

We have a preliminary cost model that estimates our sales price of water to be roughly \$800/AF, starting in the 2017 timeframe and escalating at a fixed inflationary number. We are confident that our average long-term contract price will be significantly below the long-term projected cost of supply of the major wholesalers, e.g., MWD, IID, SNWA, and CAP.

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

Empresas ICA, our Mexican partner, is currently conducting a due diligence, both locally and in Mexico City.

**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.

We believe that the site acquisition, brine disposal, and environmental permitting will be significantly easier in Mexico than if the project were based in the US. However, its cross-border nature and the fact that it impacts the Colorado River will involve US/Mexican discussions. That said, the prospect of an additional 500,000 AFY in the Colorado River should be a positive aspect to those discussions. We are scheduled for an introductory meeting with the US State Dept in Washington. Empresas ICA will have similar meetings with the Mexican national government.

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

We are confident about all aspects of the project (site access, permitting, financing, engineering, power, etc.) except the political elements. Everyone certainly understands how contentious anything having to do with the Colorado River can be. We would hope that BOR would help in that regard.

**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.

500,000 AFY of desalinated potable water delivered into the Imperial Dam via closed pipeline.
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**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
TBD	Self-generation, using natural gas-fired combined cycle Tidal power plants installed in Sea of Cortez CFE (Mexican utility) for back-up and stand-by

**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
TBD	

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

Location(s)	Anticipate Benefits or Impacts
TBD	

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

Location(s)	Anticipated Benefits or Impacts
TBD	

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

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The primary benefits are jobs and a long-term, drought-proof supply of potable water into the Colorado River. We feel that to the extent this eases supply pressures in places such as Las Vegas, it will mean that more environmentally disruptive options (e.g., long pipelines from Northern Colorado) will not be required. In addition, lack of water constrains economic growth in the West. Conversely, high-volume, long-term supplies both facilitate and permit economic growth. This project will also support US/Mexico relations.

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

