

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

September 29, 1999
El Paso, Texas

**Joint Report of the Principal Engineers and Technical Advisors
to Facilitate a Joint Colorado River Water Conveyance Planning Level Study
for the San Diego, CA-Tijuana, B.C. Region**

**Honorable Commissioners
International Boundary and Water Commission
United States and Mexico
El Paso, Texas and Ciudad Juarez, Chihuahua**

Sirs:

We respectfully submit this joint report in furtherance of the interest expressed by the San Diego County Water Authority (SDCWA) and water authorities in Tijuana, Baja California (BC) to carry out joint planning level studies concerning Colorado River water supply conveyance options for that region and basic information for the proper authorities in each country for potential water supply determinations. We note that the SDCWA has resources from the State of California to cover the cost of planning level studies which include those for water conveyance in the United States and in Mexico or partly in each country.

We further note that the SDCWA has funds to cover the costs for firms contracted in Mexico to facilitate work in that country, and that such funds would be made available to the International Boundary and Water Commission (IBWC) under procedures established by the IBWC for this purpose. Based on discussions beginning in November 1998, we consider it appropriate that such study be conducted in a joint manner to evaluate opportunities to increase the conveyance capacity, storage and treatment of Colorado River water for its delivery to the San Diego-Tijuana region. Such study may consider various alignments in the U. S. and Mexico and various conveyance volumes as a function of future demands and alternate sources of available supply for the San Diego-Tijuana region. The study may also contemplate various water quality scenarios and emergency connection and temporary supply scenarios between the water distribution systems for San Diego, California and Tijuana, BC. The joint study would take into account previous studies performed by the SDCWA for conveyance of Colorado River waters in the United States and similar studies as may have been performed in Mexico for increasing capacity in the Colorado River to Tijuana aqueduct in Mexico.

Binational Technical Committee

We considered it appropriate that a Binational Technical Committee (BTC) comprised of the involved agencies in both countries be established. This group will coordinate each phase of the joint study beginning with development of a work plan for the study, distribution of activities by contractors in each country and review of the terms of reference for applicable contracts, continuing with evaluation of data and reports generated and development of a satisfactory final joint report.

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Prior to initiation of work and payment to Mexico for work performed in Mexico with funds made available from SDCWA, the BTC shall develop a work plan. The work plan will include, among other items, a final detailed scope of work for the joint study, cost estimates for each study activity, and assignment of study activities between United States and Mexican firms in accordance with this Joint Report. The BTC shall ensure that each of the study activities are properly coordinated and adopt common goals and methods necessary to accomplish the purpose of the joint study.

In the United States, the BTC would be formed by personnel of the United States Section of the IBWC, the SDCWA, the California Department of Water Resources and the consulting firms. In the case of Mexico, the BTC would be made up personnel of the Mexican Section of the IBWC, Comision Nacional del Agua (CNA), the State Water Commission, State Public Services Commission of Tijuana, General Office for Environment of the State, and the consulting firms.

Proposed Activities

We consider that the joint study should include, among others as agreed by the BTC, the following activities:

1. Compilation of general historical information concerning water supply and demand, and existing water conveyance and storage facilities, as well as determination of additional conveyance capacity of Colorado River water which San Diego County and Tijuana require to satisfy their water demands in the next 10, 20 and 30 years.
2. Identification and evaluation of Colorado River water conveyance alignments in the United States, in Mexico, or partly in each country and development of cost estimates for their right of way, permits, electric energy, construction and operation and maintenance, to include interconnecting structures to new or existing conveyance facilities at the source points. At the same time, other short and long-term supply options would be considered in order to determine when additional Colorado River water is required.
3. Evaluation of storage facilities in the United States, in Mexico or in each country, considering expansion of existing facilities and construction of new facilities, and development of cost estimates for their construction and operation and maintenance and integration into the water distribution systems in San Diego County and Tijuana, BC. Consideration will also be given to present and future benefits of existing storage facilities.
4. Detailed characterization of the water from local and imported water sources, existing and future, in the San Diego County and Tijuana region; identification of the water quality requirements in each country and development of cost estimates to treat waters conveyed from the Colorado River to current potable water standards in the United States and Mexico; and, examination of the potential for reducing, through desalination, the salinity of waters conveyed from the Colorado River. Analyses

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will also be made of the appropriateness of settling basins in advance of pumping facilities of the new aqueduct to prevent introduction of materials into the pipeline and sedimentation of regulating reservoirs, or also to make the water potable in each country before the discharge point in Tijuana - San Diego, based on each country's volume required and quality standards in force in each country. Cost for treating the water after conveyance to the Tijuana - San Diego region will include the cost of sediment removal from the regulating reservoirs.

5. Carrying out of geotechnical field studies and evaluation of the geotechnical conditions and potential seismic risks associated with each conveyance alignment and storage and treatment option evaluated. In each case measures to mitigate the impacts would be proposed, such as emergency storage for the San Diego - Tijuana region to provide safety provisions during repairs of damages to critical aqueduct segments.
6. Analysis of environmental restrictions, evaluating, as a minimum, biological, archaeological and hazardous material components.
7. Development of a set of evaluation criteria and their use to identify and evaluate alternatives for conveyance, storage and treatment considered in 2), 3) and 4) above.
8. Recognition of rights and obligations assumed by the United States and Mexico in applicable treaties and other international agreements and identification of processes that will facilitate the design, construction and operation and maintenance of conveyance, storage and treatment alternatives that may be considered.
9. Development of alternatives for financing of the project, identifying potential future financing sources in the United States and Mexico, including but not limited to public or private associations for construction of the facilities identified, and arrangements for their operation and maintenance.

Time Schedule

We considered that the joint study should commence in 1999 and take an estimated 18 months to complete.

Contracting of Consultants

We observe that the SDCWA will coordinate, review and develop the scope and define the terms of reference for the studies and conceptual plans in the United States. The SDCWA will select and contract the firms that will perform the part of the joint study and development of conceptual plans in the United States. The SDCWA will inform the United States Section of the IBWC of the selection and shall report the progress of the work in the United States to the BTC.

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We find it appropriate that the funds made available by the SDCWA and the State of California to the IBWC be utilized to cover the cost incurred by Mexican firms for performing the part of the joint study up to an amount made available by the SDCWA for this purpose. At the same time, CNA may identify specific study activities in Mexico which may be carried out by United States firms. Identification of such activities would be presented by the Mexican Section to the IBWC. Under this arrangement, CNA will select and contract the Mexican firms in coordination with the Mexican Section of the IBWC and appropriate Mexican agencies. In this selection process, CNA, based on the final work plan developed by the BTC, would identify the study components needed to be performed by firms in Mexico, review the scope and develop the terms of reference for the study elements to be performed by the Mexican firm. Further, in this selection process CNA would ensure conformance with Mexican contracting standards, consensus with the operating agency, and state government in selection of firms considering, among others, the proposed methodology, capacity and experience of the firm, as well as their bid price.

In case that CNA determines that a United States firm may perform an activity in Mexico, the SDCWA will contract with this United States firm. Coordination of work between the United States firm contracted by the SDCWA and the firms in Mexico will be through the BTC.

Contracting Procedures

Considering the contracting requirements in Mexico, we consider that the following procedure should be used by the IBWC for the contracting of Mexican firms, and/or personnel whose services will be covered by the funds made available to the IBWC by the SDCWA and the State of California.

The IBWC will agree on the extent of support that the Mexican Section requires to ensure the coordination, supervision, and follow up by the Mexican Section for the duration of the joint study, up to an amount provided by the SDCWA in accordance with procedures established by the IBWC.

For contracting activities in Mexico, the following will apply:

1. The Mexican Section will provide to the United States Section, the proposal and draft contract specifying the conditions and estimated total costs for the private firms in Mexico, up to an amount provided by the SDCWA to cover such costs for the duration of the study.
2. The United States Section and the SDCWA will review the costs, scope and deliveries schedules, as well as the contract terms provided by the Mexican Section against the approved study scope and funds available to the United States Section for this purpose. The study scope, invoice, and procedures for reporting progress, will also be reviewed and approved to ensure compliance with the terms of the funding source. If the costs exceed those authorized, the two Sections will make the necessary adjustments and the costs will be charged to the United States provided that these are available. The Mexican Section will provide to the United States Section a copy of the contracts before their signature.

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3. The United States, within 20 working days from the date of the contract award, will make the advance payment to the Mexican Section covering 30 percent of the total cost of each contract which will be covered by funds from the United States.
4. At the start of the studies, the following mechanism will be used to carry out the studies and make the corresponding payments:
 - a. The responsible agencies of the Government of Mexico will provide the estimates of the study or planing delivered by the firms for review to the IBWC project coordinators, which will be reviewed to verify the execution of the activities indicated and indicate that the estimates are satisfactory and to verify compliance with work agreed in the contract. Such estimates shall include the documentation that justifies the cost of the items expended for which payment is sought. The payment request format will be provided by the SDCWA and all requests shall be made in accordance with this format.
 - b. Concerning the information received, IBWC personnel will indicate if this is sufficient or whether it requires additional documentation.
 - c. IBWC personnel will then process the estimate taking care that a detailed review takes place and that the information and additional documentation are received before the next estimates are developed. Additions or deductions will be made in the following period to any necessary correction resulting from the detailed review of an estimate.
 - d. Immediately after resolution of the differences by IBWC personnel, the estimate will be sent to the SDCWA for processing of the payment.
5. Upon processing of the estimate, both Sections of the IBWC shall conform to the following procedure:
 - a. The Mexican Section shall present the consultant's costs in the form of a statement of payments, detailing the actual costs to the consultant for work performed under the terms of the contract, including a progress report on the work performed and scheduled completion of tasks.
 - b. Deduction of 30 per cent of the total from the estimates corresponding to the advance payment as may have been made by the United States.
 - c. If corrections are necessary, summarize the additions or deductions, and upon resolution, apply them to the next estimate.

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- d. The best effort would be made to resolve differences at the project coordinator level in the IBWC, but in the event of a difference that cannot be resolved in this manner, the matter will be presented to the Principal Engineers for resolution.
 - e. The United States Section will pay the costs presented, in accordance with these provisions, by the Mexican Section for work progress made by contracted firms, making such payment within 20 working days after the progress payment sent to SDCWA for processing in accordance with the terms of point five.
6. The exchange rate used for the advance payment shall be the Banco Nacional de Mexico "buy pesos" rate in effect on the date in which the contract was awarded. For subsequent payments, the exchange rate will be that in effect on the date in which the estimates are presented to the United States project coordinator.

Binational Coordination

The IBWC will coordinate the meetings of the BTC, ensuring the following activities:

- a. Hold periodic meetings, at least each 30 days, in which the United States and Mexican consulting firms would provide study or planning progress reports. The progress reports on these matters will be presented five days before the meeting date to allow discussion of future requirements. The meetings shall be held 10 days after each 30 working day period.
- b. The development of a written summary of conclusions and understandings, progress of work satisfactorily performed, pending work and problem areas that require solution.

Internal coordination in Mexico will be through the CNA, the water regulatory agency in Mexico, which shall be the communications channel to establish liaison with operating agencies, municipalities, state authorities, professional associations, academic institutions and in general any non government organization that has interest in the joint study and/or projects described in this document.

Internal coordination in the United States will be through the SDCWA, as the regional agency charged with water supply in San Diego County. The SDCWA will be the channel of communications for liaison needed with operating agencies, municipalities, state authorities, professional organizations, academic institutions, non government organizations that are interested in the joint study.

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Information Management

The information which will be generated as part of this joint project will be reviewed, evaluated and approved within the BTC and presented to the Commission for its approval. The final reports may not be released until their completion, unless required by laws in the United States and Mexico, then they will be released by means of an agreement of the Commission.

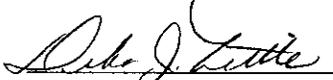
Actions Resulting from the Study

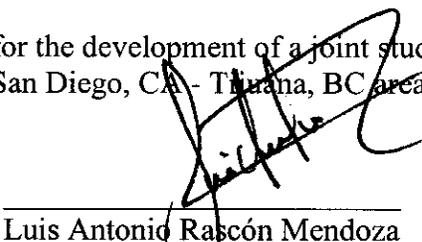
It is intended that the joint study provide basic information which both governments require in their decision making, with the understanding that the technical analyses which will be carried out will not commit the parties to follow through with a more detailed analysis of any alternative.

Recommendation

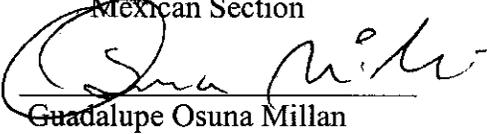
Based on the above, we respectfully recommend:

That the procedures described in this report for the development of a joint study of alternatives for Colorado River water supply to the San Diego, CA - Tijuana, BC area, be approved.


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