

# SALTON SEA WATER IMPORTATION SUBMITTAL REVIEW

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## Technical Memorandum (TM) #6.2

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*This Technical Memorandum (TM) was prepared as part of the Salton Sea Water Importation Proposal Review to provide information to support and reflect the Independent Review Panel's evaluation of submitted ideas to restore the Salton Sea by water importation and provide the Salton Sea Management Program (SSMP) with approaches that are feasible. Parts of this TM may be used in the Panel's Screening Report, Fatal Flaw Report, Feasibility Report, and/or Summary Report (Reports). In the event that any discrepancies are found between the Reports and this TM, the Reports shall take precedence.*

The purpose of this Technical Memorandum (TM) is to review and analyze large water projects that have been built along the U.S.-Mexico border to benefit the two countries. Through this review and analysis, we can then compare these projects to water importation submissions (WIS) as currently proposed by several project proponents. We will also look at one on-going binational project that has similar characteristics to WIS.

This review will look at the factors that made these projects successful and the necessary components and process to plan and implement them. The primary implementation process is that used by the International Boundary and Water Commission (IBWC). The IBWC "Minute" process will be reviewed and the respective project Minutes will also be analyzed with respect to how they impact the overall process.

After the review of the IBWC Minute process and the individual binational projects, there will be an overview of the key components of all the projects including political support, timing and schedule, cost and implementation challenges. These will then be compared to the proposed WIS and what opportunities and challenges exist with respect to the implementation of water importation.

## 1.0 The IBWC and Minute Process

It is important to understand the IBWC and its Minute process since any successful large binational water project will require approval of the two countries, sanctioned through the IBWC process. The IBWC has a long history and is detailed in the IBWC website. For purposes of this TM, we can begin with the signing of the Water Treaty of February 3, 1944 (Treaty), between the U.S. and Mexico. The Treaty expanded the duties of the preexisting International Boundary Commission and renamed it IBWC to include the new functions for oversight of water issues between the two countries.

The Treaty provides that the jurisdiction of the IBWC extends to the limitrophe parts of the Rio Grande and Colorado Rivers, the land boundary between the two countries and to works located upon the border. Also, any works constructed or used in fulfillment of the Treaty and located wholly within the territorial limits of either country, they are to remain under the jurisdiction of and control of the Commission Section in whose country the works are located.

Under the Treaty, the IBWC has the status of an international body and consists of a U.S. and a Mexico Section. Each Section is headed by an Engineer Commissioner. Whenever there are provisions for joint action or agreement of the two governments, it is understood that these matters will be handled by or through the U.S. Department of State and Mexico's Ministry of Foreign Relations. Each government bears the expenses of its respective Section and joint expenses as agreed by the IBWC are born equally by the two governments.

The Treaty charged the IBWC with the application of the treaty and the exercise of the rights and obligations which the two governments assume thereunder and also charged with the settlement of all disputes that may arise under implementation of the Treaty. The IBWC carries under these functions through the drafting and signing of IBWC "Minutes". These Minutes refer to agreements reached by the two Commissioners as part of official meetings. After signature by the two Commissioners, the Minutes are vetted informally in the respective Congresses of the two countries. After this approval, the Minutes do not become an official part of the Treaty but are given deference as if they were.

Although signing of a Minute by the two Commissioners is the final official action, there is normally substantial engineering work that goes into the negotiation of any Minute. This associated technical effort is contained in more detail in what is termed a "Joint Report of the Principal Engineers." This Joint Report becomes part of the Minute and is normally attached as a technical addendum to the associated Minute.

In implementing a large scale binational project it is normal to have more than one Minute signed as the project progresses. The following is a normal process for Minutes that may be required in a large scale project:

**1. Conceptual approval:** This Minute will cover the initial phases of a project. It will first express the interest of the two governments to move forward with the project and detail the problem or issue it is addressing. It usually will also include a proposed location as well as size and general operation of the project.

**2. Design, O&M and costs:** This Minute will detail the design for the proposed project and the associated operation and maintenance requirements. This Minute may also include proposed costs of the project and the estimated proportional share of costs between the two countries.

**3. Construction and cost sharing:** This Minute will authorize the project to move forward into construction and will detail the final cost sharing prorated between the two countries.

**4. Operation & Maintenance:** This final Minute will spell out how the project will be operated and maintained. This is especially important if the project is partially built in both countries. It will also include the cost sharing for O&M between the two countries.

All projects are different and may or may not require all the Minutes described above. However, the staged approach is usually required in implementing large and complex binational projects.

Another important aspect of the Minute process is that although the IBWC is the manager of the Minute process, there are usually a large number of local, state and federal agencies as well as NGO's that can be involved in the implementation of a project. Additionally, funding for these projects can come from different sources and must be considered in the scope of the project.

## 2.0 Large Binational Projects for Review

The IBWC currently has signed a total of 326 Minutes. These Minutes are used for a number of reasons, including construction and operation of facilities as well as agreements for resolution of water quality or quantity issues. As stated earlier, we will select a few large scale IBWC projects that have been built to address border water issues and can serve to compare to the WIS. Additionally, we will study a binational project that is currently being developed and can also serve as a good comparison.

The following are the projects for review:

1. Falcon Dam on the Rio Grande

2. Amistad Dam on the Rio Grande
3. Channelization of the Tijuana River
4. International Wastewater Treatment Plant for Tijuana/San Diego
5. Binational Study for Desalination at the Sea of Cortez

One of the main accomplishments of the 1944 Treaty was the binational adjudication of the water rights of flows from the Rio Grande and Colorado River. Both countries understood that to better develop and manage the river flows equitably, major facilities were required to be built on the river courses. This led to the first important Minute (#182) regarding the importance of building storage facilities (dams) on the main binational rivers.

*Minute 182: Approval of "Joint Report on Engineering Conference on Studies, Investigations and Procedures for Planning of Works to be built in Accordance with the Treaty of 1944".  
Signed on September 23, 1946.*

Minute 182 served as the conceptual agreement by the two countries to begin the engineering work to analyze the required facilities on the two main binational rivers. This eventually led to the construction of Falcon and Amistad Dams on the Rio Grande and Morelos Dam on the Colorado River.

## 2.1 FALCON DAM ON THE RIO GRANDE

With the authorization under Minute 182, work first proceeded on the downstream section of the Rio Grande, which resulted in the selection of the site for Falcon Dam. The dam is located on the Rio Grande, bounded by the states of Texas (U.S.) and Tamaulipas (Mexico). The first project Minute served to determine the size and location of the dam as stated in the following:

*Minute 187: Determinations as to the site and required capacities of the lowest major international storage dam to be built on the Rio Grande, in accordance with the provisions of Article V of the Treaty.  
Concluded February 3, 1944.  
Signed on January 6, 1948*

After approval of Minute 187, work continued on the design of the dam, resulting in the next Minute:

*Minute 190: Allocation to the two Sections of the Commission of remaining items of works preparatory to construction of Falcon Dam.  
Signed on August 13, 1948*

Minute 190 described the work necessary to proceed with the construction of the dam and apportioned those functions to the two Sections of the IBWC. It also designated the U.S. Bureau of Reclamation as solely responsible for the final design of the dam. Finally, it prorated the construction costs between the two countries.

During the final design phase, the two countries decided to add power generation as part of the dam facilities. This resulted in Minute 192:

*Minute 192: Plans and procedures for the construction of Falcon Dam and recommendations for construction of Falcon Hydroelectric Plants.*

*Signed on September 7, 1949*

Minute 192 detailed the construction details for the dam and in effect gave final approval to move forward. Construction of the dam began in December, 1950 and was completed in April, 1954. The dam began producing electricity by October, 1954.

The dam was built at a cost of \$35 million, or about \$400 million in today's dollars. The dam serves both countries, providing water for irrigation and municipal needs as well as power to both nations.

Even after it was built, there were additional Minutes that were required to address ongoing operational issues. The first of these was signed to address the issue of the boundary demarcation in the new reservoir created by the dam:

*Minute 199: Establishment of jurisdictional line at the Falcon Reservoir.*

*Signed on December 30, 1953*

The final Minute for Falcon Dam was signed to address the allocation of costs for operations between the two countries as follows:

*Minute 202: Basis for joint operation and maintenance of Falcon Dam and Hydroelectric Plant and for division of costs thereof.*

*Signed on February 5, 1955*

In reviewing this project, there are some significant points that stand out:

1. For such a large project, the timeline seems fairly rapid in today's regulatory and economic environments. From the time Minute 187 was signed until completion of construction, the project took a little over 6 years to complete and begin operation. A large part of this could be attributed to the fact that both countries wanted this project to succeed as quickly as possible.
2. It is interesting that Mexico agreed to have the U.S. Bureau of Reclamation take the lead as designer for the dam. This points out the fact that successful Minutes many times involve a number of stakeholders to play critical roles.

3. The two countries agreed to modify the design to allow for installation of hydropower facilities and included this in a Minute. This shows the potential for projects to be modified during design when it benefits both countries.

4. As can be seen with the signing of Minutes 199 and 202, there may always be issues that arise after construction is complete that need addressing. In this case, the issue of O&M sharing for the dam was resolved after a few months of operational experience.

## 2.2 ARMISTAD DAM ON THE RIO GRANDE

Engineering work on Amistad Dam began in earnest with the completion of Falcon Dam in 1954. The first Minute was the conceptual approval for the location, size and type of dam to be built:

*Minute 207: Consideration of joint report of the principal engineers on site, capacities and type of dam for the second major international storage dam on the Rio Grande.*

*Signed on November 28, 1958*

After signing of Minute 207, more detailed engineering work continued resulting in a new Minute that detailed the two countries' responsibilities in design, construction and O&M, as well as allocating costs on a prorated basis:

*Minute 210: Recommendations regarding construction of Amistad Dam.*

*Signed on January 12, 1961*

After Minute 210, final design was initiated and cost proposals were refined, resulting in the following:

*Minute 215: Design and procedures for construction of the Amistad Dam.*

*Signed on October 22, 1963*

With Minute 215 signed, the design and construction specifications for the dam were finalized.

Construction began in December, 1964 and was completed in November, 1969. The dam also included hydroelectric facilities for power generation for both countries. The cost for the dam at the time was \$125 million, or \$1.07 billion in today's dollars.

As with the Falcon Dam, there was an additional Minute that was signed after the dam was built to address O&M issues:

*Minute 235: Division of operation and maintenance costs of Amistad Dam*

*Signed on December 15, 1969*

Upon review of this project, some points that stand out are as follows:

1. The timeline for the project is now longer than that for Falcon Dam. Assuming that planning for the dam began in approximately mid-1956, the total project timeline was about 13 years. This schedule is starting to align more with current projects.
2. The Minute process appears more streamlined for this project compared to the Falcon Dam project. This could be based on experience gained from the Falcon Dam process.
3. Both dam projects required additional Minutes to address O&M issues. It does make sense that these would be addressed once operational experience informed operational requirements.

### 2.3 CHANNELIZATION OF THE TIJUANA RIVER

The cities of Tijuana (Baja California, Mexico) and San Diego (California, U.S.) share a large watershed that feeds the Tijuana River. This river flows from south to north and can produce flood events that can impact both cities and countries. To address this, the two cities and countries agreed to build a flood control system to manage the Tijuana River. The first Minute for this project was as follows:

*Minute 225: Channelization of the Tijuana River*  
*Signed on June 27, 1967*

Minute 225 was the conceptual approval of the flood control project and directed the further detailed design of the project. This led to the next Minute for design:

*Minute 236: Construction of works for channelization of the Tijuana River*  
*Signed on July 10, 1970*

This Minute directed design work to proceed for the flood control facilities. Of note, the two countries agreed that the project could be split into two sub-projects that would be at the discretion of the two nations. In Mexico, work began on the concrete channel project in Tijuana in 1972. In the U.S., local NGOs protested against a concrete structure and demanded a natural river embankment. In April, 1974 the San Diego City Council voted to stop the design of concrete channel for the U.S. portion of the Tijuana River.

The decision to change the design for the U.S. portion of the project resulted in the U.S. Army Corps of Engineers redesigning the concrete flood control system to a "dissipator channel." This change was formalized in a new Minute:

*Minute 258: Modification of the U.S. portion of the plan for the channelization of the Tijuana River.*  
*Signed on June 8, 1977*

With Minute 258 signed, work began on the U.S. portion of the channel in 1978. Work on the channel project was completed in both countries by 1980. On the U.S. side, the project cost was \$14 million, or \$52 million in today's dollars. In Mexico, the cost was about four times as high, or about \$200 million in

today's dollars. This was due to the fact that the channel in Tijuana was much longer and lined entirely with concrete.

The main points about this project are as follows:

1. The most important point is that the two agreed to bifurcate the project at the countries' discretion. At the time, Mexico was very upset that the U.S. changed its project design at the last minute. However, it does show that the Minute process can be flexible to meet changing political circumstances in either country. It allowed Mexico to begin construction of its project in Tijuana ahead of the U.S. project. In the end, the joint project has worked well to benefit the two nations.
2. Although the project cost is not high by today's standards, the project itself was very important from the standpoint of cooperation at the local, state and federal levels of both countries. It allowed for the redevelopment of the core area of Tijuana and improved land use management in what is now the Tijuana River Estuary.
3. The timeline for this project is about 13 years, or about the same that for the Falcon Dam project.

#### **2.4 INTERNATIONAL WASTEWATER TREATMENT PLANT FOR TIJUANA/SAN DIEGO**

There has been a long history of sewage flows from Tijuana impacting the area of south San Diego. The Tijuana River is fed by a large watershed that originates both in the U.S. and Mexico. As the river course is primarily from south to north, it flows through the city of Tijuana before it crosses into the U.S. in the Tijuana River Estuary and ultimately the Pacific Ocean. In this route, the river picks up uncontrolled discharges of sewage and other contaminants which then cause pollution problems for the community of San Ysidro and the City of Imperial Beach.

As the two cities of Tijuana and San Diego have grown together since the early 1900s, there have been attempts to resolve the issue of cross-border sanitation impacts. In the 1930's, the two communities jointly built a large septic tank in the San Ysidro area to capture the flow from Tijuana. The septic tank effluent was discharged to the Pacific Ocean through a land and ocean outfall.

The septic tank system worked well, but Tijuana continued to grow and by the 1950s the system was overloaded and raw sewage began to flow consistently in the Tijuana River. At about this time, the City of San Diego was in the planning stage to build its first municipal wastewater collection and treatment system. Their initial plans were for Tijuana to join San Diego and become part of this new wastewater management system. These plans eventually fell through, however, and the two countries agreed to build an "emergency connection" for Tijuana to make use of the new San Diego wastewater collection and treatment facilities.

By the mid 1950s, San Diego completed its new Point Loma wastewater treatment plant and also the emergency connection to Tijuana. Almost immediately, Tijuana began using the emergency connection at full capacity and on a full-time basis. This helped solve the sewage contamination in the Tijuana River.

The emergency connection worked well until the late 1970s and early 1980s, when Tijuana's population exploded and the connection no longer could handle the increased sewage flows. The increased sewage flows were now a consistent problem in the Tijuana River, causing unsanitary conditions in the Tijuana River Estuary as well as beach closures in Imperial Beach.

The sewage overflows from Tijuana into the U.S. increased as the population in Tijuana continued to grow. Political pressure against the U.S. federal government began to mount as beach closures continued in Imperial Beach but also started to occur in Coronado. This political pressure did ultimately lead to discussions between the U.S. and Mexico on how to resolve this issue. These discussions led to Minute 270:

*Minute 270: Recommendations for the First Stage Treatment and Disposal Facilities for the Solution of the Border Sanitation Problem at San Diego, California/Tijuana, Baja California*  
*Signed on July 17, 1985*

This Minute was recognized as the first step in a multi-faceted approach to resolve the Tijuana/San Diego sanitation problem. It was agreed that a number of collection and treatment facilities were needed on both sides of the border. With this first step, Mexico agreed to build a new pump station and wastewater treatment plant that would have enough capacity to handle Tijuana's sewage flows until 1989.

In approximately a year, Mexico did complete construction of the new pump station and wastewater treatment. Recognizing that this was only a first step, the two countries agreed to continue planning for the needed additional facilities. This planning effort and binational negotiations lead to Minute 283:

*Minute 283: Conceptual Plan for the International Solution to the Border Sanitation Problem in San Diego, California/Tijuana, Baja California*  
*Signed on August 8, 1990*

Minute 283 was a very important agreement in that it proposed building facilities in the U.S. to solve a problem that originated in Mexico. It was truly a binational solution. The conceptual agreement was to build a 25 mgd wastewater treatment plant in the U.S. to treat Tijuana sewage. The treated effluent would be discharged to the Pacific Ocean via a land and ocean outfall.

The binational option made sense from an engineering standpoint since it used gravity flow to avoid building costly and technically difficult pumping plants in Tijuana. Although unstated, there was also

concern about Mexico's ability to build and operate a well managed sewage system. Having that system in the U.S. allowed for better control of construction and operations.

With the signing of Minute 283, work began on the design and then construction of the treatment plant and outfall. The treatment plant was completed in 1997 at a cost of \$239 million, or about \$400 million in today's dollars. An interesting note is that no additional Minute was signed prior to beginning of construction. The next Minute signed was for determining the cost sharing for the O&M of the system:

*Minute 296: Distribution of Construction, Operation and Maintenance Costs for the International Wastewater Treatment Plant*  
*Signed May 5, 1997*

This Minute included the amount of Mexico's share of \$17 million for construction of the treatment plant and an annual payment for its share of O&M costs. Additionally, Mexico agreed to dispose of the sludge from the plant in Tijuana. Finally, the two countries agreed to continue planning for how to manage any increases in sewage flows in the Tijuana area.

The main points for discussion for this project are as follows:

1. One important aspect of this project is that it has several components that are built and operated on both sides of the border to solve a problem originating primarily in Mexico. And importantly, the one main component (wastewater plant and outfall) is built in the U.S. at a cost paid almost entirely by the U.S.
2. As noted above, this project's Minute process was different in that it did not require an additional Minute before proceeding to construction. In the other projects presented earlier, a conceptual Minute was normally followed by a "construction" Minute. In this case, since the treatment plant was solely in the U.S., construction it could proceed without formal approval from Mexico.
3. The timeline for the project is approximately 12 years from initial concept to completion of construction.
4. This issue is still ongoing. In the last ten years, the Tijuana River contamination has resurfaced and there are now plans to expand the capacity of the international plant to treat additional sewage flows from Tijuana.

## **2.5 BINATIONAL STUDY FOR DESALINATION PLANT AT THE SEA OF CORTEZ**

This project is still in the feasibility stage, but it is interesting to review from a process standpoint. Since Minute 317 was signed in 2010, the U.S. and Mexico have been cooperating to address drought management issues on the Colorado River (CR). Minutes 318, 319 and 323 have produced a number of cooperative efforts by the two countries to deal with cutbacks to CR supplies to both countries.

Minute 323 contains a number of binational actions that could be undertaken to develop new water sources in the CR basin. Section IX (Investments and Projects), Part B of the Minute presents "New Water Sources Projects", that include Item 3., "Binational Desalination Plant, Sea of Cortez." This project contemplates the construction of a large desalination plant in Mexico that can serve customers both in Mexico and the U.S.

Soon after the Minute was signed in September, 2017, several U.S. water agencies took a number of steps to advance the project. First, they agreed to fund an initial feasibility study for the project. Second, they partnered with the state of Sonora, Mexico, to be the lead Mexican agency for the study. Lastly, they worked with IBWC to form a Desalination Workgroup under the auspices of Minute 323 to manage the development of the project.

Thus far the U.S. agencies have contributed approximately \$700K to develop a feasibility study produced by Black & Veatch in April, 2020. That report is entitled, "Binational Study of Water Desalination Opportunities in the Sea of Cortez." The key findings of the study are as follows:

1. Developed 3 final alternatives along the Sea of Cortez in Sonora.
2. Proposed to deliver an initial quantity of 100,000 AFY to a location near the U.S. border near Yuma, AZ. This quantity could be doubled as part of a second phase of the project. This new supply could be delivered to both U.S. and Mexican users.
3. Initial capital costs range from \$3.0 to \$3.7 billion dollars.
4. The proposed price at the delivery point is \$2,000 per acre-foot (AF).

The study is at the feasibility level and a number of key issues still need to be resolved. They include:

1. The exact route and point of delivery need to be better defined and determined.
2. U.S. customers for the desalted water need to be identified and the water price needs to be confirmed.
3. The source of power for the desalination plant has yet to be determined and is crucial to the operation of the plant.
4. Mexico needs to develop a legal mechanism that allows for the sale of desalted water to customers in the U.S.

If and when this project moves forward, it is anticipated that several Minutes will be needed to manage its development. As a side note, this concept of a binational desalination plant in Sonora has been analyzed in different forms since the 1990s. It remains to be seen if there will be political and financial support to advance the project to the next stage.

### 3.0 Summary and Implications for Salton Sea Water Importation

After review of the large binational projects that have been implemented since the late 1940s, there are key observations that can be made. Below is a list of some of those observations as well as a discussion of the associated implications for Salton Sea Water Importation:

#### **1. Large water projects are not common.**

Just by their nature, large projects are complex and expensive. As we have seen by this review, the early projects were storage dam projects that were in essence part of the 1944 Water Treaty and as such had full support by the governments of the two countries. As time went on, some large projects dealt with sanitation and flood control issues. Recently there has been interest in exploring the potential for building large binational desalination plants that can provide additional new water resources to both countries. These are still in process and have not yet received even conceptual approval by the two countries.

The WIS are all large scale projects. Additionally, key components of these proposals introduce complex technical, environmental and even social issues that have not been addressed in previous major binational projects. For example, the concept of transporting sea water and/or desalinated water across the border on a grand scale has never been attempted before. Managing the potential environmental issues alone could be a major challenge.

For the WIS, one major challenge will be the management of the project on a binational level. As mentioned earlier, these types of projects will necessarily need to be bifurcated into U.S. and Mexico components. This will entail a well coordinated program management approach that can plan, design, build and finance two separate projects in two countries that ultimately meet at the border and function as one integrated system.

#### **2. To receive binational support, a project must demonstrate benefits to both countries.**

As can be seen in this review, large binational projects require political support by both countries to be implemented. The early projects in the 1940s through 1960s were primarily those that were needed to implement the intent of the 1944 Water Treaty for management of the water rights established under the Treaty. After that, specific projects arose that became necessary to resolve either water quantity or quality issues along the border.

In the case of water supply projects, the benefit to both countries can be easier to establish than for water quality projects. As an example, the early water storage projects (dams) were supported by both governments since local and state entities benefitted directly by these projects. Also, long standing water disputes were settled through implementation of these projects.

For water quality projects, the benefits are not as direct as for water supply projects and also the benefits can be different in each country. In the San Diego/Tijuana project example, the benefits in the U.S. were the resolution of local contamination issues and in Mexico the benefits were better management of municipal wastewater discharges.

A key component of governmental support for a project is how costs for each country are allocated for project implementation. For water supply projects the benefits can be identified much easier and therefore the costs can also be allocated easier. For water quality projects, the costs are harder to quantify since the benefits can be viewed differently in each country. In the case of the San Diego/Tijuana example, the U.S. essentially subsidized the cost of the binational treatment plant and outfall in exchange for Mexico to cooperate in the management of the wastewater flows from Tijuana.

It is obvious that the WIS will require the support of both nations to succeed. At this stage, the benefit to the U.S. is more apparent than the benefit to Mexico. There may be a political risk in assuming Mexico will allow transfer of Mexican water to the U.S. As an example, even though Minutes 319 and 323 were considered success stories in binational cooperation, there was some local opposition in Mexico. This opposition was based primarily on the concern that strained local water supplies were transferred to the U.S. without proper compensation.

Several WIS include some proposed benefits to Mexico, including desalinated water and a new fishery industry in the Laguna Salada. However, the details of how Mexico participates in these proposals will be crucial. For example, what will be Mexico's share of the cost for these benefits? Who in Mexico benefits? What are the social and environmental impacts to Mexico?

For this particular item, there appears a lot of work to be done. Very little effort has been made to date in approaching Mexico about the WIS. Politically, how this proposal is presented to Mexico is crucial and sensitive. Support at the local, state, tribal and federal levels will all be essential.

### **3. Large projects usually will have long timetables for implementation.**

As we have seen through this report, large projects can take a number of years to go through the implementation process. Those we have reviewed all had a timeframe of around 12-15 years. Given the complexity of the WIS, it would be reasonable to assume a timetable of at least 15-20 years for implementation.

Given the lengthy timetable, it may be necessary to evaluate how the WIS fit into the overall timeframe for restoration of the Salton Sea. This is especially important given that there already ongoing mitigation and restoration efforts that will be implemented within the next 15-20 year period. How

these efforts and the WIS can be coordinated will be crucial to the overall success of the Salton Sea restoration effort.

#### **4. Binational projects require management through the IBWC process.**

For a binational project to be implemented, it must be managed through the IBWC process. Although this adds another layer of government oversight, it is the only available process that is sanctioned by the two governments. Additionally, once approved through this process, a project has a strong legal foundation for proper long-term implementation.

In the case of WIS, there is an existing framework for projects undertaken in the Colorado River basin established under Minute 317 and expanded through Minutes 319 and 323. This framework calls for projects to be managed through Work Groups for project types. As an example, the proposed Sea of Cortez desalination project is being vetted through the Minute 323 process under the Desalination Workgroup that is part of the Projects Workgroup.

An important factor in the IBWC process is that there needs to be a project co-sponsor in each country that can act as the project leads. For WIS, it makes sense for the project sponsors to be the states of California and Baja California. However, the effort could be delegated to other parties if necessary. The designation of project sponsor can be part of the effort to establish support for the project. An important consideration in this decision is responsibility for costs associated with development of the project, such as the initial feasibility studies.

As has been noted in the large projects presented above, several Minutes are needed as these projects are implemented. It is very likely WIS will be no exception.