Salton Trough Interconnection Project

Submitted by: **The Binational Water Group, LLC**

In Response to: **Request for Information for Salton Sea Water Importation Projects**

California Natural Resources Agency

March 9, 2018

Contents

Introduction

The Salton Sea Management Program ("SSMP") prepared by the State of California ("State") is designed to address the public and ecological health issues at the Salton Sea while securing Colorado River water supplies for the State. The SSMP is a long-range program that includes the development of a long-range plan as part of the first Phase I of the State's Ten-Year Plan, which concentrates on the development of constructed projects at the north and south end of the Salton Sea where playa exposure is the greatest and water inflows are available.

On December 8, 2017, the California Natural Resources Agency issued *Request for Information for Salton Sea Water Importation Projects* ("RFI"). The RFI outlines the information requested by the California Natural Resources Agency to evaluate proposals for a water import project to meet long-range goals of the SSMP. In response to the RFI, the *Binational Water Group, LLC ("BWG")* is pleased to present information on our proposed **Salton Trough Interconnection Project** ("**STIP"**) for consideration in the long-range plan for the Salton Sea.

BWG is a company of professionals with deep economic, policy, scientific and engineering expertise in fields of natural resources, water and the environment. BWG has assembled an experienced and qualified project team for development and implementation of STIP that would deliver up to one million acre-feet per year of seawater from the Sea of Cortez into the State for direct delivery into the Salton Sea for restoration and feedstock for a desalination/treatment program.

STIP would address five key issues confronting the Salton Sea:

- Declining sea elevations
- Degrading environmental conditions due to exposed toxic playa
- Increasing salinity
- Loss of habitat
- Loss of economic development opportunities of local area

For scientific discussion of these aspects, see Attachment A.

Under STIP, BWG proposes a direct delivery of naturally-filtered seawater into the Salton Sea to increase and stabilize the elevation of the Salton Sea and help address public and ecological health issues. The delivery of seawater also serves as feedstock for a desalination/treatment program that will provide supplemental water supplies in the Colorado River region.

STIP is a binational project based on proposed public-private partnerships with the State of Baja and the Natural Resources Investment Center in the Department of the Interior. Project development risks are borne by the private sector. The State of California would purchase delivered seawater as part of its

long-range plan for the Salton Sea. While significant progress has been made on STIP's development, BWG proposes a joint investigation/due diligence effort with the State of California to finalize project definition and provide the information to support negotiation of necessary agreements.

While the information provided below is based on proprietary and confidential information developed over more than three years, BWG does not consider the information provided herein as proprietary other than Attachment B.

1.0 Project Team

The development of STIP requires participation from firms with a diverse set of experience and expertise: energy, engineering, environmental science, geology & geohydrology, oceanography, project economics & finance, public policy, public-private partnerships, socio-economic impacts, technology and water transfers. BWG has assembled a team of world-class engineering and expertise with local knowledge to support project development. See Table 1 for the make-up of BWG's project team and their corresponding major areas of responsibility. A brief introduction of team members is provided later in this section.

Table 1: BWG Project Team.

Major Task Category	Stratecon (BWG)	G3SoilWorks (BWG)	Stantec	NorrisLeal	Via Marina	Z Global	Diurna Energy	Maul Foster Alongi	WestWater Research	EPCOR
Project Conceptualization & Oversight	x	x								
Planning										
Plan formulation	x	x	x							x
Environmental Review and compliance		x	x							
Engineering and cost estimate										
Conveyance and associated facilities			x							
Water treatment/Desalination			x	x						
Geology and Geotechnical		x								
Hydrogeology and Well Fields		x								
Ocean engineering		x			x					
Power supply and transmission		x	x			x	x			
Economics										
Project Economics	x									x
Socioeconomics								x		
Water Transfer and Market	x		x						x	x
Power market and pricing						x	x			
Finance										
Cost allocation and project financing	x		x							x
Public private partnership	x		x							x

The initial development of STIP rests on sound economics, institutional design, science, engineering and policy, which have been developed by BWG. Principals at *Stratecon* and *G3SoilWorks*, who are BWG members have developed the project approach and project conceptualization. They also assume co-lead roles and general technical oversight of the project. *Stratecon* focuses primarily on economics, institutional design, public policy and laws & regulation. *G3SoilWorks* focuses primarily on science, conceptual layout and design and initial engineering of STIP. BWG is supported by *NorrisLeal* for the desalination component. *EPCOR* has participated in an advisory role to assure the underlying contracting structure meets reasonable market conditions for successful project financing.

BWG's project team has been recently expanded to also include *Stantec* for project experience in the United States and Mexico and *Via Marina*, a Paris-based firm with proprietary technology for undersea water pipelines. BWG has also sought specific consulting expertise related to power issues in the United States (*ZGlobal*) and Mexico (*Diurna Energy*), water market research of the Colorado River Basin (*WestWater Research*), and assessment of the socioeconomic impacts of the project on Mexico and the United States (*Maul Foster Alongi*).

In addition to these firms, BWG also has ongoing discussions with major law firms and international infrastructure groups regarding project structure and implementation strategies. BWG has also been in dialogue with a large, well-known, multi-national investment banking firm regarding certain financing aspects of its project. The investment bank has been involved in structuring and financing a number of large, complex water infrastructure projects including project financings, public-private partnerships and traditional municipal bond financings.

As the project moves forward, BWG anticipates entering into agreements with such firms to expand its overall project team. Each project team member brings substantial credentials to the effort:

Stratecon Inc. **www.stratwater.com**

Stratecon Inc. is a strategic planning and economics consulting firm specializing in water. Provides advisory services in the acquisition of water rights throughout the western United States, as well as proprietary research services and expert testimony. Brings together the disciplines of economics, finance, natural resource management and law to develop innovative solutions to commercial and public water policy issues and analytical content for the *Journal of* Water, the *Hydrowonk Blog* and previously for *Water Strategist*. Extensive experience in Colorado River matters and water resources in the State of Baja.

G3 SoilWorks **www.g3soilworks.com**

With over 100 years in combined geotechnical, water resources, environmental, and engineering geologic consulting experience throughout the southwest U.S., G3SoilWorks employs some of the most experienced geologic engineers in Southern California. Principals have strong direct experience with

hydrogeologic, engineering geologic and environmental aspects of the Salton Trough. They have served in expert capacity on water resource and engineering issues in the United States and Baja.

EPCOR **www.epcor.com**

North American utility company and P3 project developer. EPCOR is over 125 years old and owns and operates over $9 billion of utility infrastructure that provides clean water, wastewater services and safe, reliable electricity to residential and commercial customers.

Stantec **www.stantec.com**

Stantec is a top leading global firm for water solutions with over 200 years of world-class project experience in planning, design, construction and management of some of the world's largest and most technically-significant infrastructure projects. Stantec has a long history providing consulting services to local, state and federal water agencies in implementing sustainable and integrated water management solutions in California and other states.

NorrisLeal **http://www.norrisleal.com/**

NorrisLeal is a specialized consulting engineering firm with decades of proven engineering expertise plus outside-the-box thinking that combines the best of both traditional and innovative technologies, including brackish and seawater desalination and water reuse.

Via Marina **www.via-marina.com**

Its proprietary and innovative system for the transportation of water in large quantities over long distances by an underwater pipe (hereinafter SubmaRiver®) using a proprietary and innovative flexible pipe (hereinafter SubmaFlex®) which could also be used competitively in a variety of other applications.

ZGlobal **www.zglobal.biz**

Strategic energy planning, market analytics and energy infrastructure development with extensive knowledge of geothermal and energy resources in the Imperial Valley.

Diurna Energy **https://diurna.energy/**

Strategic energy firm conducting planning and analysis in power markets and policy initiatives in the State of Baja. Founder former executive director of the Baja Energy Commission.

Maul Foster Alongi **www.maulfoster.com**

A multi-disciplinary professional services firm in planning and development including economic analysis.

WestWater Research www.waterexchange.com

Recognized leader in the water rights industry. Founded in 2001, WestWater Research is a leading economic consulting firm in pricing, valuation, and transaction advisory services for water rights and water resource development, completing over $700 million in transaction advisory and valuation services.

2.0 Project Concept and Benefits

A fundamental understanding and appreciation of the integral physiographic and hydrogeologic aspects of the Salton Trough relative to the Salton Sea is what separates the BWG from the rest of the pack. The Salton Sea is not a singular system; rather it is a part of a larger geomorphic province.

There is no feasible way to correct the current situation without addressing it as a component of the greater Salton Trough system. Without a mechanism to drain and recharge / recirculate its waters and to manage salt accumulation, no amount of re-organization of the Salton Sea by itself can correct the problem without serious and severe consequences – including the issues identified in the introduction. The Salton Sea must be given a means to circulate and flush itself out, remove accumulated salts and pollutants, and be given enough volume of influx water to sustain a stable elevation if it is to be a viable resource. This can only happen with a well-organized and integrated plan that includes all of the Salton Trough components – and reunites it with the Sea of Cortez.

A detailed discussion of the Salton Sea and the Salton Trough and the key aspects of the proposed interconnection are provided in Attachment A.

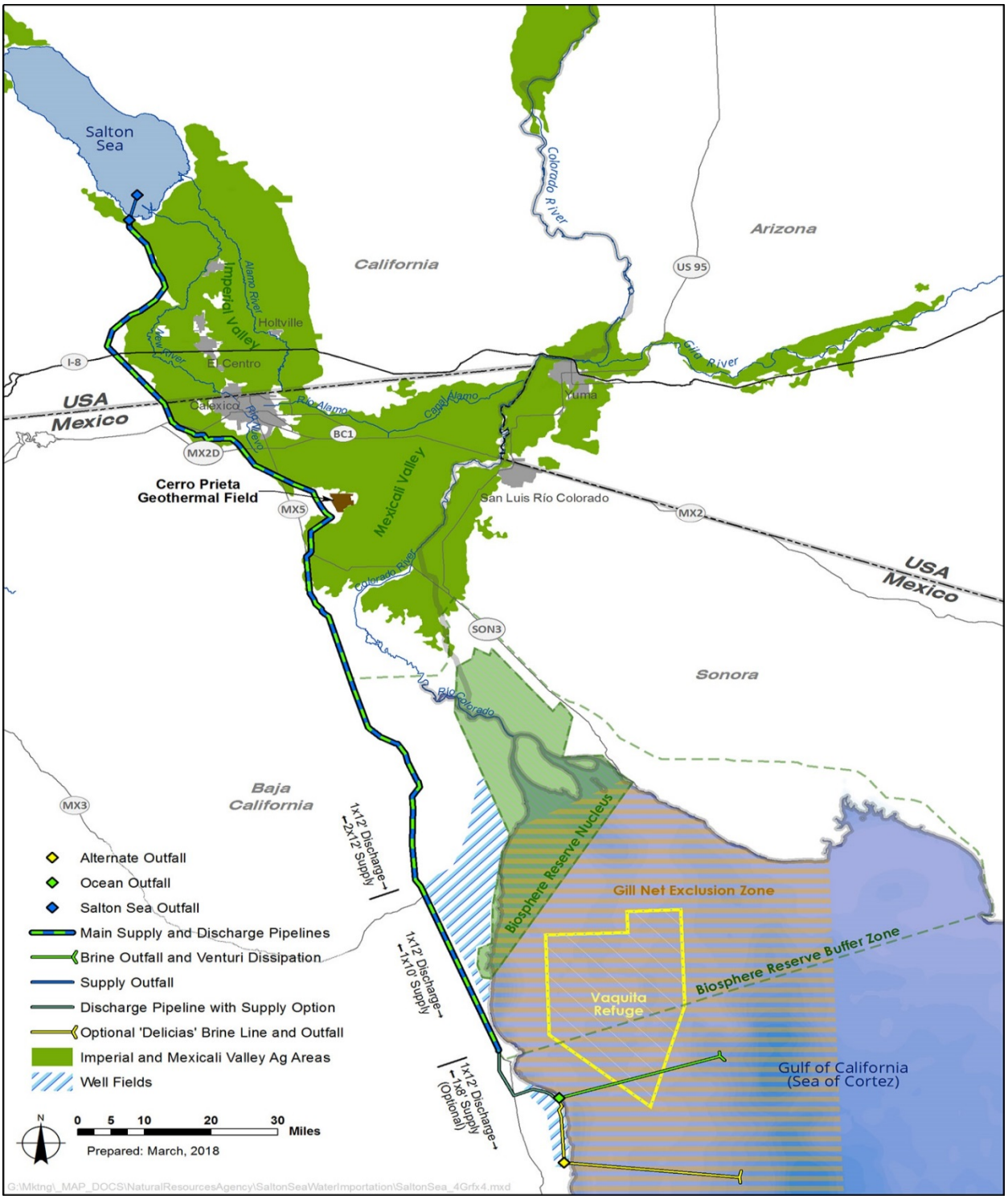
Concept

STIP is a state-of-the-art pipeline system that allows for transfer of substantial volumes of water in and out of the overall Salton Trough. At a glance, the STIP is an infrastructure program that includes the following major components (see Figure 1):

- **Salt water wellfields** – A network of near-shore wellfields in Mexico that produce saline groundwater from shallow strata with direct hydrologic interconnections with the Sea of Cortez.
- **Salt water supply pipelines** – A system of large-volume pipelines to the State for direct delivery of 1,000,000 acre-feet (AF) per year of groundwater into the Salton Sea and delivery as feedstock for a desalination program.
- **Desalination plants** – A series of scalable desalination plants in the U.S. to supplement long-term water supplies for regional water users.
- **Regional brine disposal pipeline** – A pipeline from the State into the deep water of the Wagner Basin of the Sea of Cortez (25 miles offshore of San Felipe) used for environmentally safe disposal of brine from desalination plants and other accumulated salts in the Mexicali Valley and Salton Sea.

For a more detailed layout of the project, see Attachment B (proprietary).

Figure 1: **Overview of the Salton Trough Interconnection Project (STIP).** Not shown is the location of desalination plants, which are to be determined through coordination with the Natural Resources Investment Center.



The State of California can participate in STIP by purchasing seawater for direct delivery into the Salton Sea. The timing, location and amount of water deliveries, as well as payment schedules, would be specified in a long-term agreement with BWG's U.S. project entity.

There are three key components to BWG's project concept: (1) public-private partnerships in Baja and the United States, (2) multi-purpose use of STIP infrastructure, and (3) base project viability on revenues from long-term contracts with the State of California for seawater delivered to the Salton Sea and users of newly created potable water supplies and brine line.

The private sector will bear project development risks, design, construct, operate, and own/finance project infrastructure. The public-private partnerships will facilitate governmental approvals in the respective countries. For discussion of the multi-purpose use and project viability, see discussion of Business Plan below.

Table 2 presents a conceptual schedule for the dual purposes of Salton Sea restoration and water supply augmentation. In the first years, seawater from the Sea of Cortez could be exclusively dedicated to fill and stabilize Salton Sea. Thereafter, approximately 35% of the STIP capacity could be dedicated to long-term inflows to Salton Sea for maintenance of the sea elevation at -227 feet below mean sea level[1]. The remaining STIP capacity could be used to supply desalination plants to create new water supply.

Table 2: Conceptual Allocation of STIP Water Volume by Delivery Year.

Delivery Year	Phase	Operational Objective	Salton Sea Restoration (million AF per year)	Supplemental Supply* (million AF per year)
1	Restoration	Ramp Up	Up to 1.0	0
2-3	Restoration	Bulk Fill	1.0	0
4	Restoration/Augmentation	Bulk Fill	0.75	0.125
5	Restoration/Augmentation	Ramp Down	0.50	0.250
6+	Maintenance/Augmentation	Maintain	0.35	0.325

* 50% of delivered seawater not used for Salton Sea Restoration (secondary water treatment could increase yield)

[1] The -227 foot elevation target is for illustrative purposes. This elevation reflects an interpreted "historic" working elevation found in topo maps. Determination of the ultimate target should reflect an analysis of flooding risks and among other factors.

Salton Sea Benefits

When implemented, the STIP would result in significant environmental improvements. First, the water level elevation of Salton Sea can be stabilized. For example, a stable water elevation of -227 feet below sea level could be achieved within 7 years of seawater deliveries with allowance for ongoing maintenance make-up water and possible future partial draining of hypersaline waters, should those aspects be desired (Figure 2). The STIP would result in essentially immediate re-submerging of toxic playas and immediate reductions in their associated health risks. With Sea elevation stabilized and maintained (Figure 3), the environmental risks posed by exposed playas would no longer exist. Therefore, public exposures to air-borne carcinogens, dust, and residue from toxic/unhealthful chemicals and organics would be largely eliminated.

Figure 2: Projection of water elevation in Salton Sea with and without STIP.

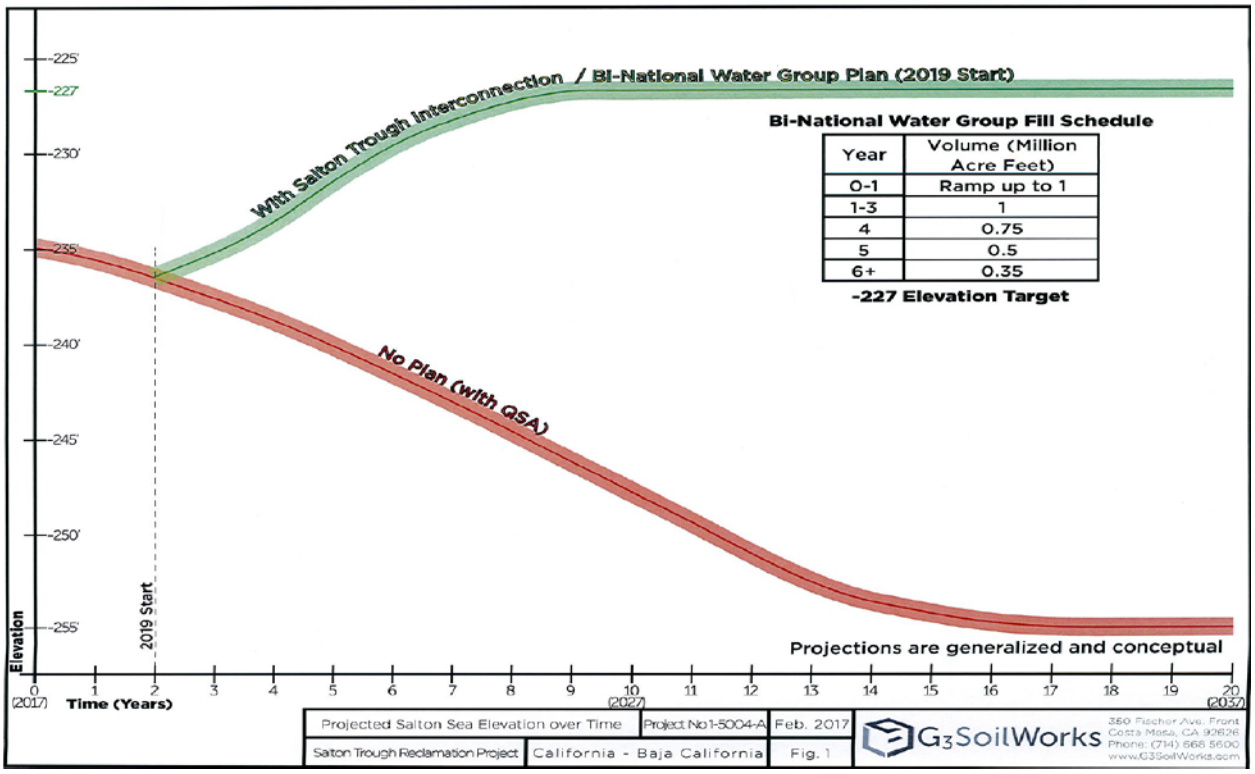
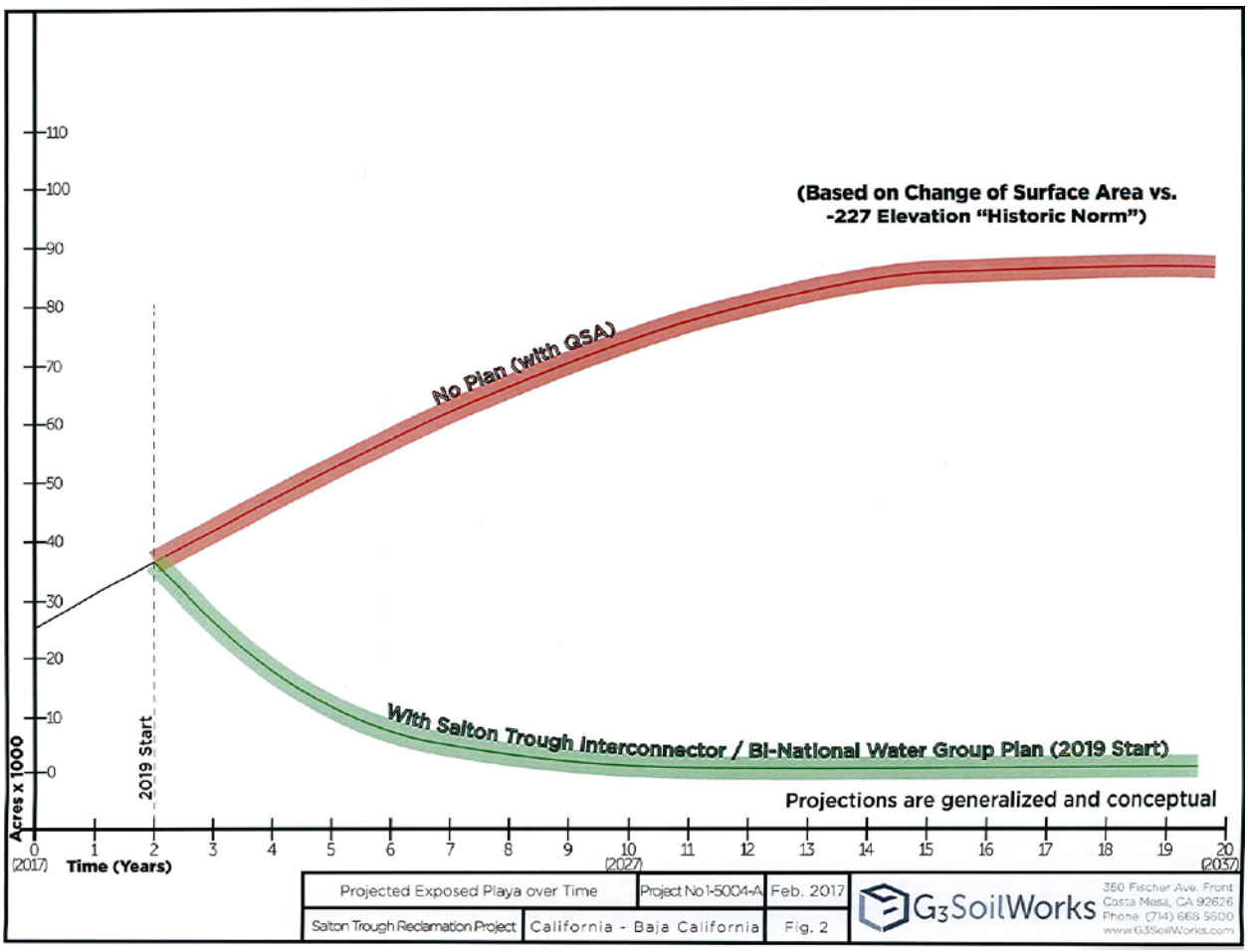
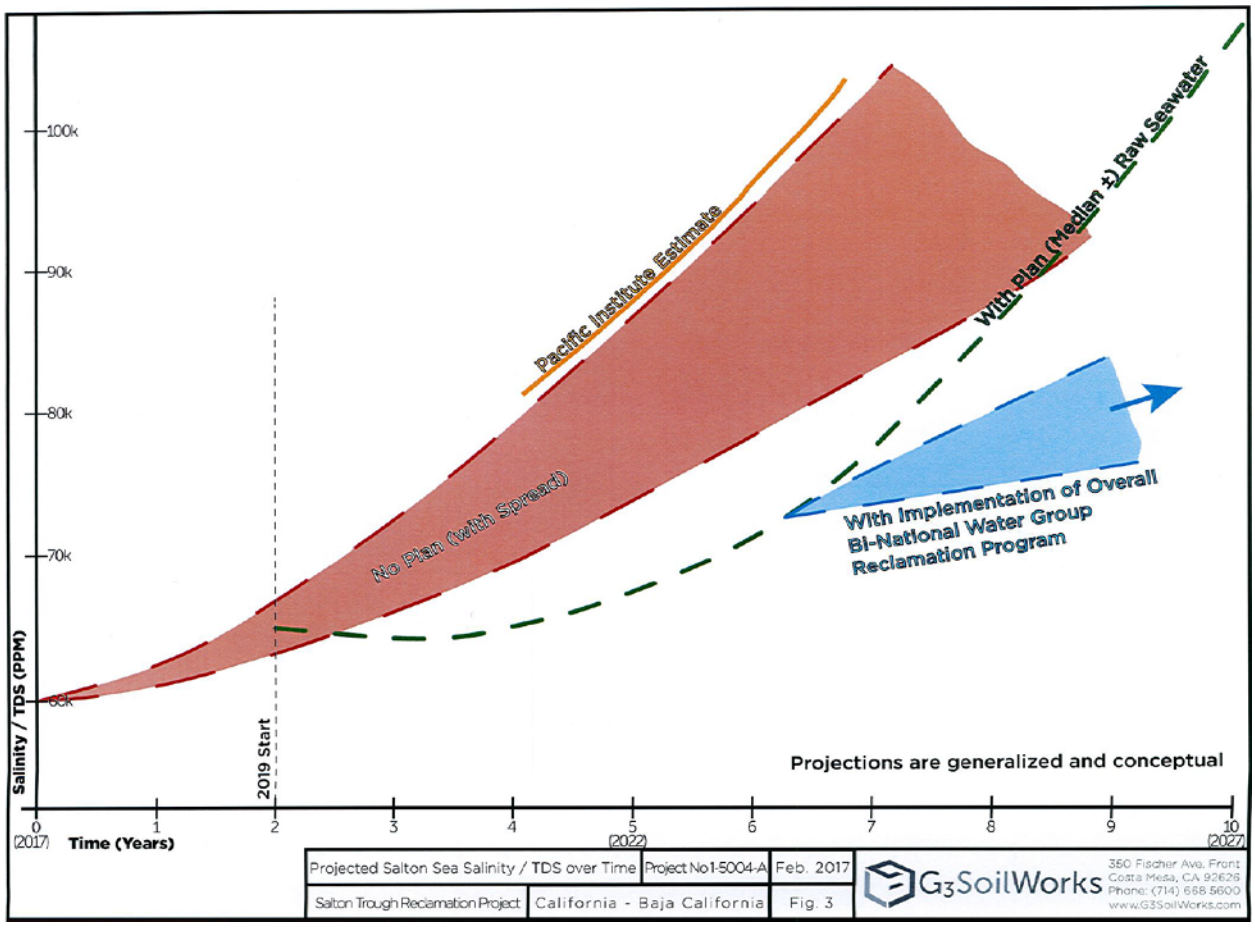


Figure 3: Projection of exposed surface area in Salton Sea with and without STIP.



In the near-term, STIP would significantly reduce the salinity concentration of Salton Sea (Figure 4). Note that the expected condition under the STIP scenario is that the salinity concentration curve dips and flattens during the initial filling period.

Figure 4: Projection of salinity concentrations in Salton Sea with and without STIP.



This initial dilution effect gives a long-term "offset" to salinity concentration increases that are currently projected without the STIP, particularly over the upper bound worst likely case. The imported filtered seawater from the Sea of Cortez would also begin immediately diluting toxic/unhealthful chemicals and organics in Salton Sea, improving overall water quality. In the long-term, as brine was exported from Salton Trough for disposal, the core problem of net salt-loading could be addressed and the trajectory of increased salinity further reduced by additional water treatment programs. The STIP brine disposal line could also provide the backbone for optional follow-on wastewater treatment plants that would address water quality problems in the New and Alamo Rivers and reclamation of impaired groundwater in the Mexicali Valley. Such projects would improve water quality for agricultural and municipal uses and allow for the release of Colorado River water to improve environmental conditions in the Mexican Delta.

There are other environmental benefits of STIP:

- Energy is an essential component in most water conveyance systems that rely on pumping. Geothermal energy resources are prevalent in the Salton Trough. There is an opportunity to co-locate desalination/treatment facilities near geothermal resources so that STIP is a "green

energy project". The geothermal energy is essentially inexhaustible if properly utilized. It also is of a perfect thermodynamic nature for water distillation.

- STIP's use of slant drilling and conventional well fields tapping into aquifer sediments in contact with or otherwise recharged by seawater rather than the conventional open intake for conveying seawater into the pipeline system. This "sea-groundwater" approach, despite the very large volumes of intake water, sharply reduces the environmental impact of the project, and has virtually no long-term detriment to marine life. This methodology also pre-filters seawater to improve performance and limit biologic cross-contamination.
- STIP will use new state of the art brine dilution and dispersion technology in combination strategically locating the outfall into offshore waters approximately 300-ft deep via a 25-mile undersea water pipeline to spread dispersed brine into the Wagner Basin in the Sea of Cortez. The diluted and dispersed brine is to be targeted into the deep mid-water portion of the water column and is picked up and dispersed into the Pacific by tidal and regional current systems. This assures that brine disposal does not threaten sea life.

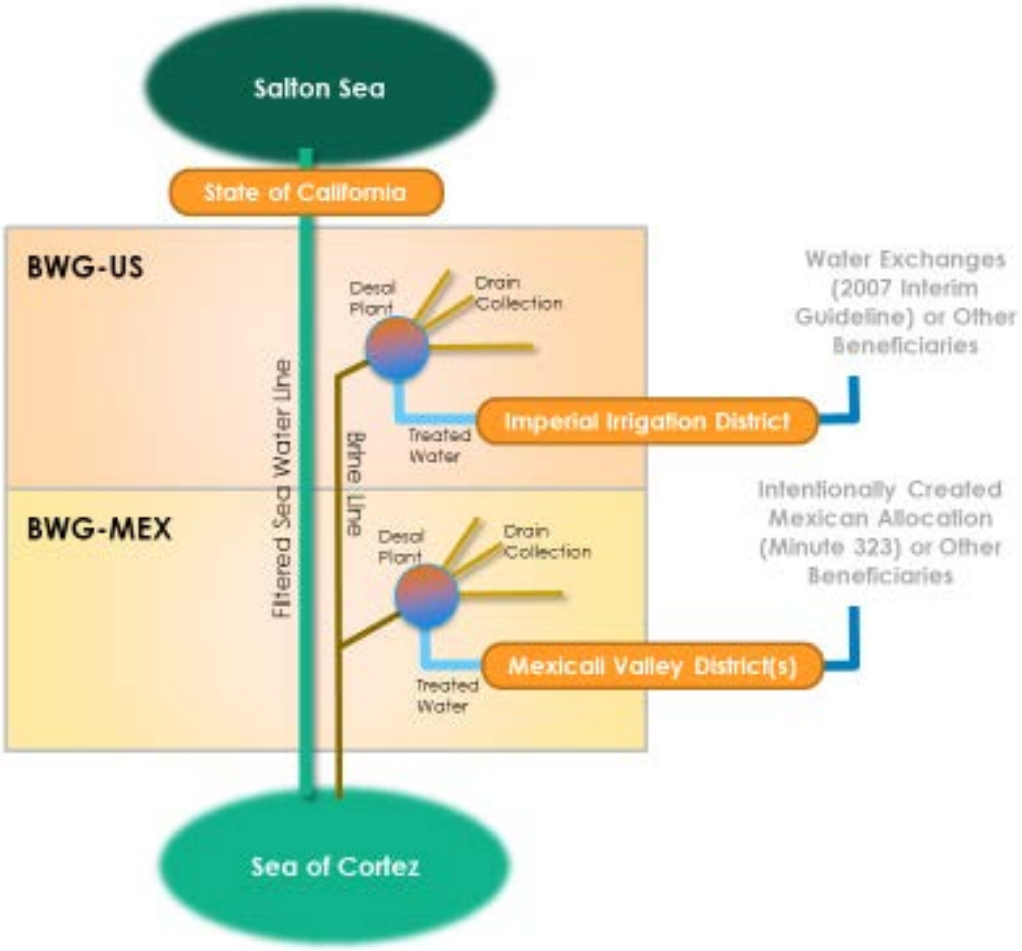
Business Plan

Due to the different governing law and regulations, BWG expects that the project would be developed, owned and operated by two different but affiliated private entities, one in Baja, Mexico, and the other in the United States (see Figure 5). The Mexican entity would deliver seawater to the United States entity for either direct delivery of seawater to the Salton Sea or for feedstock for desalination/treatment plants. Assuming a suitable exchange agreement can be reached with the Imperial Irrigation District, the new potable water supplies would be available at Lake Mead for use in the Colorado River region.

STIP is being developed pursuant to public-private partnerships with appropriate governmental entities in the State of Baja, Mexico, and the United States. In Baja, the Mexican private entity would enter into a public-private partnership with the State of Baja. The private entity would design, build, finance, own and operate the project infrastructure in the Mexicali Valley. The State of Baja would receive a negotiated royalty payment for seawater made available to the project and would assist the private entity secure necessary permits, regulatory approvals and right-of-way in Mexico.

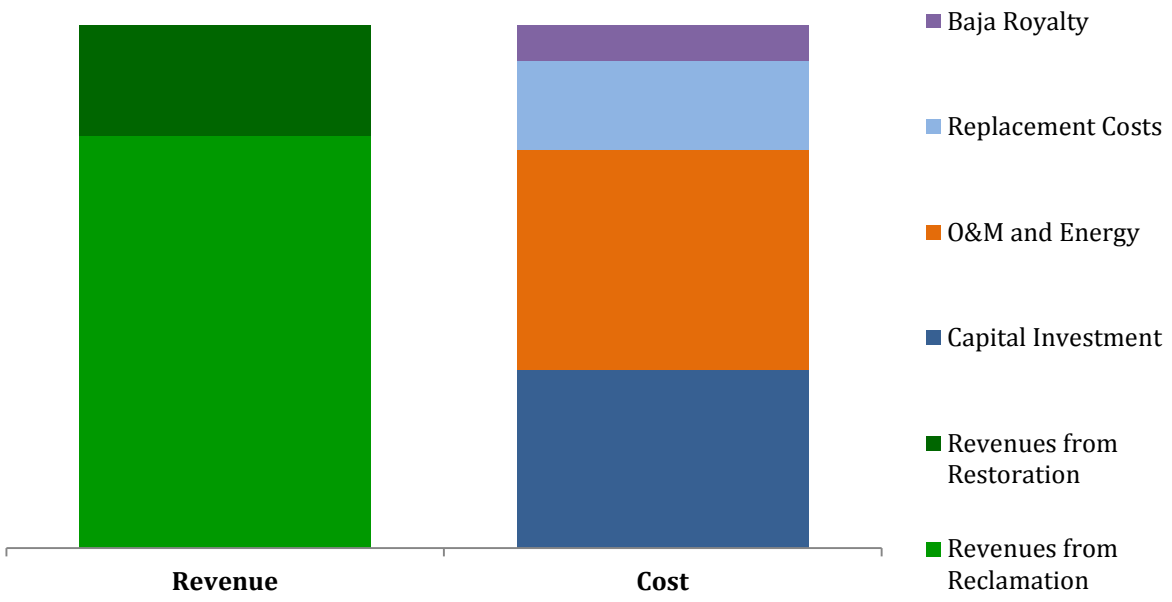
In the United States, BWG proposes that the U.S. private entity enter into a public-private partnership with the Natural Resources Investment Center ("NRIC") in the Department of the Interior. The private entity would design, build, finance, own and operate the project infrastructure in the United States. NRIC would assist the private entity in securing access to Bureau of Land Management lands, expedited federal permitting and cooperation by the Department of the Interior, U.S. Bureau of Reclamation in contract administration. The U.S. group would enter into contracts for the delivery of naturally-filtered seawater for Salton Sea restoration and new potable water supplies.

Figure 5: Schematic of STIP with prospective water users and Water Management Strategy.



The business case for STIP is supported by two revenue streams: 1) long-term contract for the delivery of seawater to Salton Sea for restoration and maintenance, and 2) long-term contracts for new water supplies produced by desalination plants. An economically viable project requires that the revenues earned over the project life from the sale of restoration water and desalinated seawater must cover the costs incurred over the project life for capital investment, operations maintenance and energy costs, replacement costs, and payment of a royalty to the State of Baja (Figure 6).

Figure 6: Conceptual Sources and Uses of STIP Funds.



Implementation Plan

BWG recommends that BWG and State enter into a Memorandum of Understanding ("MOU") or similar instrument with a mutually agreed upon schedule to conduct a joint Feasibility Study and associated due diligence investigations. The MOU would include assignment of responsible parties for investigating identified issues, costs and deadlines. In parallel with its efforts with the State of California, BWG would also assemble project consortia, launch due diligence investigations, negotiate public-private partnership agreements, and begin discussions with potential customers for the project's new water supplies.

Once the investigation was completed, the State would have sufficient information to decide the value of including STIP in California's Salton Sea Restoration Plan and corresponding participation. Upon completion of these project development efforts, BWG's project consortia would finalize firm pricing proposals, complete arrangements for project financing and, upon the close of project financing, complete environmental reviews, permitting, construction and commissioning to commence project operations. The underlying project agreements will govern the schedule for phased expansions in the creation of new water supplies.

3.0 Project Planning and Design

BWG has undertaken significant work to date and made major progress on project planning and design.

Summary Work to Date

For more than three years, BWG has been engaged in developing critical aspects of STIP and undertaking preliminary due diligence. Development work conducted to date includes:

- Initiated preliminary discussions with the State of Baja regarding the terms and conditions of a public-private partnership under Baja law.
- Initiated discussions with the Natural Resources Investment Center in the Department of the Interior on a proposed public-private partnership in the United States.
- Briefed President's Trump transition team about the federal role in BWG's project.
- Conducted detailed, ongoing discussions and meetings with officials in both the U.S. and Mexico regarding the various elements of BWG's objective to interconnect the Sea of Cortez with the Salton Sea.
- Conducted preliminary research and characterization of the environmental, engineering hydrologic and hydrogeologic aspects of the Salton Trough, with emphasis on the Salton Sea and surrounding areas, Mexicali Valley, and the Colorado River Delta.
- Conducted preliminary research and characterization of the Northern Gulf of California's pertinent history, habitat, engineering geology, oceanography, and hydrogeology.
- Formulated conceptual restoration and planning objectives.
- Identified areas of opportunity to implement a meaningful restoration program.
- Conceptualized the basic elements of STIP through an integrated water resources assessment and action pathway.
- Formulated an integrated conceptual design and layout of the overall STIP system.
- Conducted detailed discussions with major pipeline infrastructure contractors and engineering firms.
- Formulated conceptual design parameters and capacities, pipeline alignment, intake and outfall issues, and pumping, flow control, and management.
- Conducted governmental relation efforts to build a bipartisan political coalition of elected and executive state and federal officials in both countries.
- Initiated an outreach effort to non-governmental organizations interested in restoration of the Salton Sea and the Mexican Delta and estuary.
- Conducted business and operations studies of the aspects of funding, permitting, acquisition, construction, and operations.

Project Feasibility

The BWG team has conducted preliminary studies in developing STIP. The following provides some insights and findings that support the feasibility of the proposed project.

Salt Water Wellfields

Intake wellfields for production of filtered seawater from alluvium are strategically located along the easterly coast of the Northern Gulf of California (NGC). The STIP wellfields will be split into two principal subareas: 1) a northerly primary group in the vicinity of Salinas de Ometepec, and 2) a southerly secondary group southerly of San Felipe. These facilities will collect seawater via low-disturbance-footprint well groups and arrays that extend into appropriate sediments that are connected to and/or underlay the ocean. The wells, including slant, HDD, vertical, and Ranney type wells will withdraw sea-groundwater (saline groundwater) from aquiferious materials that are recharged by ocean water – either by direct contact (in the case of beach / seafloor sediments) or directly recharged by structural hydrogeologic connection (deeper sediment systems associated with the ancient Colorado River system). These sea-groundwater / saline aquifers are not associated with aquifers used for drinking or irrigation. This approach will both protect marine life and provide clean low-scale and fouling water for production use.

Salt Water Supply Pipelines

Filtered saline and sea groundwater will be conveyed to Salton Sea via a conveyance pipeline system that follows primarily along existing Mexico Highway 5, extending to a primary hub system at Cerro Prieto, and from there extending north-northwesterly along existing agricultural roads and canal right-of-ways along the westerly edge of Mexicali Valley to the U.S. Border crossing at El Centinela. Ultimately the alignment heads to the southwestern edge of the Salton Sea near Westmorland. The main pipeline alignment follows along principally Bureau of Land Management land of the Imperial West Mesa.

The STIP Salt Water Supply Pipelines include several control stations and connector stations. There are currently 11 such facilities proposed and located strategically along the route. Control stations are facilities that handle the treatment, blending, valving, flow regulation, backflow prevention, and booster pumping functions of the pipeline. Control Stations also are locations where waters may be diverted off the main pipeline for various uses, and to receive intake waters and brine.

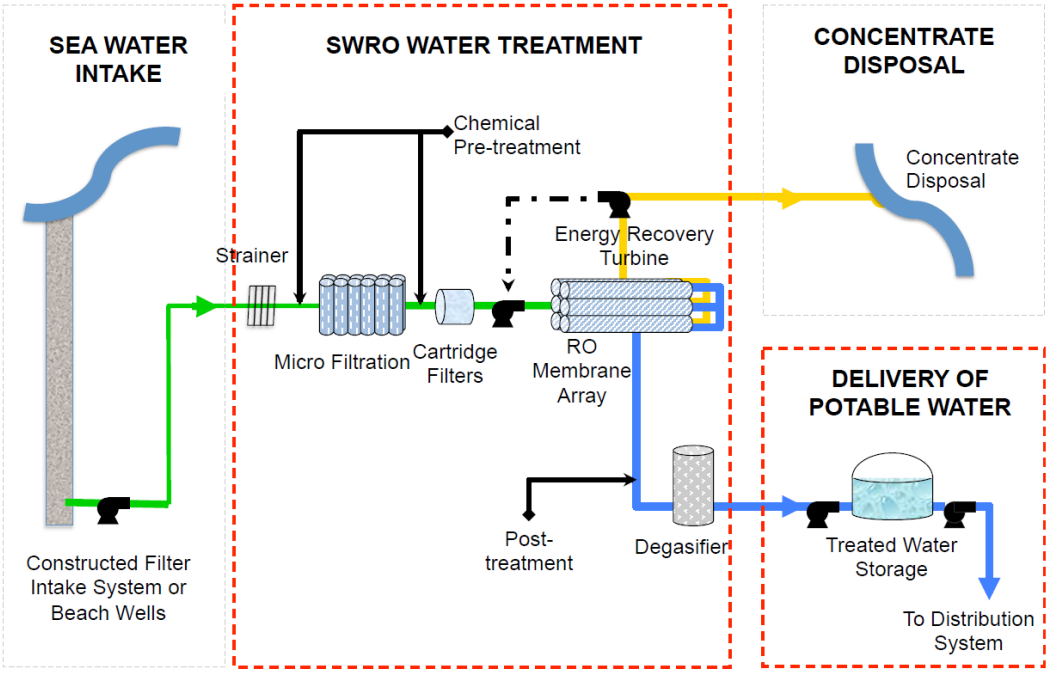
Main/Major control stations will be located along the line at San Felipe, Ometepec, the northerly base of the hills north of La Ventana/southerly of Coyote (junction of Mexicali Valley and Laguna Salada), Cerro Prieto, El Centinela (US Border), Dixieland, and Westmorland. The Cerro Prieto Control Station will optionally include a take-off lateral to serve salt/brine disposal for Morelos Dam and the Yuma Desalter facility. To control flow and reclaim some energy, the Westmorland Control Station will include a turbine system. This station will also serve as the northerly terminus of the brine disposal pipeline.

Filtered saline and sea groundwater would be conceptually discharged into the Salton Sea off the terminus of Poe Road off the Highway 86/78. From there, it will flow approximately 2/3-mile through a rock lined channel into the Salton Sea. The rocks in the channel will serve to aerate and break the water prior to its entrance into the Sea.

Desalination Plants

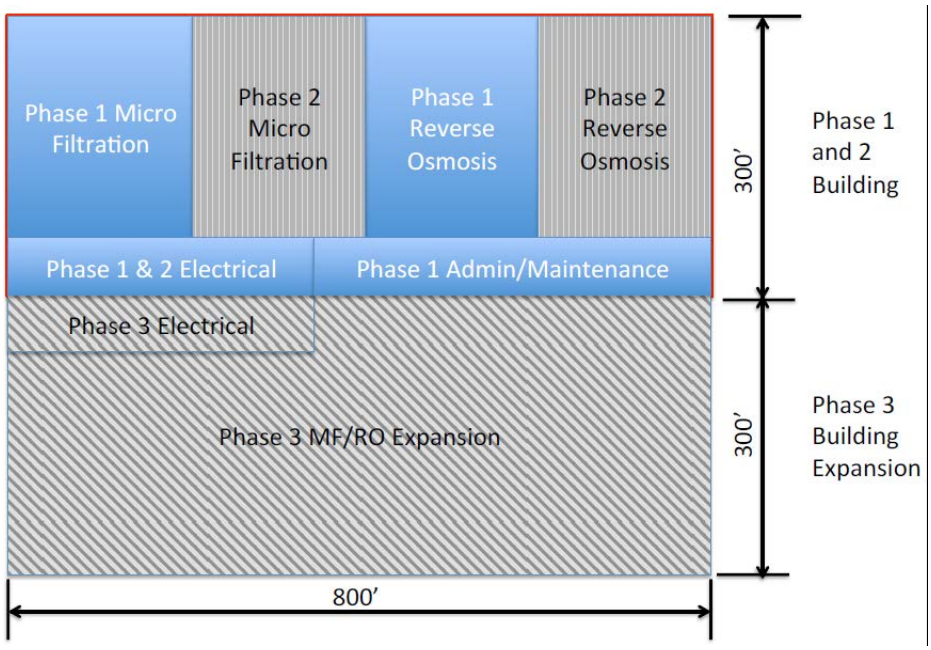
As the water level elevation in Salton Sea is stabilized by the STIP, a portion of the incoming seawater would be diverted to desalination plants to supplement water supplies in the Lower Colorado River basin. The proposed desalination treatment process would use commercial reverse osmosis ("RO") technology (Figure 7). Actual raw water quality data from the Sea of Cortez is not presently available, so process design and cost assumptions were made based on typical seawater. In addition, the proposed Salt Water Wellfield would greatly reduce or eliminate the need for pretreatment of the raw seawater for suspended solids, which should result in substantial capital and operational cost savings.

Figure 7: Conceptual Schematic of the STIP Desalination Process.



Based on BWG's preliminary conceptual analyses, each seawater desalination plant would be a 25-million-gallons-per-day (MGD) facility, expandable in phases to 50 MGD and 100 MGD (Figure 8). The initial plant building would be large enough to accommodate the first 50 MGD in two phases. The second phase expansion cost will not have any building costs associated which will result in a lesser unit cost for the expansion to 50 MGD. The third expansion will include a mirrored building expansion and include the 50 MGD treatment expansion. The ultimate size, location and number of desalination plants will be determined as specific demands are identified and contracted.

Figure 8: Conceptual Building Layout of a STIP Desalination Plant with Phased Expansion from 25 MGD to 100 MGD



Regional Brine Disposal Pipeline

The Regional Brine Disposal Pipeline will parallel the Salt Water Supply Pipelines over much of the overall run from the Main Control Station near Ometepec to the Salton Sea of a double barrel 12-ft diameter sea-groundwater intake line and a single barrel 12-ft diameter brine disposal line. The pipeline mainline running south of the Control Station at Ometepec to the Shorefall Connector Hub and Control Station just southerly of San Felipe will consist of a single 12-ft dimeter sea-groundwater line and a single barrel continuance of the brine pipeline.

A terminal outfall pipeline will carry the outflow from the brine disposal line approximately 25 miles offshore to outlet in about 300 feet of water in the Wagner Basin. The outfall will utilize state-of-the-art tuned venturi eductor systems and micro-bubbler technology to dilute, blend and disperse the discharge in an environmentally friendly and responsible manner where it will avoid both the bottom and surface portions of the water column and be picked up by the prevailing current system of the gulf and ultimately carried out to the Pacific Ocean.

A brief technical summary of the key STIP feasibility elements and assumptions is presented in Table 3 (all values approximate/illustrative and for conceptual planning purposes):

Table 3: Technical Summary of Key Elements of STIP.

Element	Description
Intake Water Volume – Working	1-million acre-feet / year
Primary Water Intake Source	Sea-groundwater from Northern Gulf
Primary Intake Methods	Wellfields – Multiple Well Arrays / Well Groups, Coastal and subsea sediments in hydraulic connection with ocean.
Primary Intake Locations	Northerly Wellfield area – Ometepec Area, Baja Mexico; Southerly Wellfield area – south of San Felipe (area of Estrella / Delicias)
Northern Wellfield – Las Salinas Coastal Intake Well Groups	8 Groups, Vertical and Slant / HDD 12 to 24-inch diameter in sandy ancient and recent alluvial / ancient delta complex sediments in communication with ocean recharge. Each Group – typically 10 to 15 wells, 3k to 5k gpm each (average), manifolded with booster / valving / anti-backflow, chlorination or similar treatment at wellhead. 30k to 75k gpm per group peak, 240k to 600k gpm combined (includes redundancy) 200k to 400k gpm "normal" operating capacity.
Northern Wellfield – Ometepec Flats Well Arrays	8 Arrays, 8 Groups, Vertical, Ranney, 12 to 24-inch diameter in sandy delta complex sediments underlying mudflats, and slant / HDD wells into sandy sediments off shore in communication with ocean recharge. Each Array – typically 10 to 15 wells, 1k to 5k gpm each (average), manifolded with booster / valving / anti-backflow, chlorination or similar treatment at wellhead. 10k to 75k gpm per array peak, 80k to 600k gpm combined (includes redundancy) 80k to 300k gpm "normal" operating capacity.
Southerly "Shorefall" Well Groups So. San Felipe "Estrella" / "Delicias"	10 Groups, Vertical / Ranney 12 to 24-inch, and slant / HDD wells in shallow sandy sediments. 5 to 10 wells per group 3k to 10k gpm each well, 15k to 50k gpm per group (includes redundancy), manifolded with booster / valving / anti-backflow, chlorination or similar treatment at wellhead. Combined capacity estimated at 300k gpm working.
Total Estimated Combined Pumping Capacity - Working	630k gpm, filtered, treated sea-groundwater
Disposal Brine / Water Treatment Residuals Volume - Working	220K to 350K acre-feet / year
Outfall Locations (Alternates 1 and 2)	Estrella; Delicias
Outfall Size / Length Offshore	12-ft diameter, 20 – 25-miles offshore
Outfall Water Depth	Approximately 300-feet
Outfall Disposal Method	Manifolded Array of Tunable Venturi Eductors with Micro Bubblers – Dilute and Blend, no hazardous moving parts.
Outfall Basin / Trajectory	Wagner Basin, mid-water into prevailing currents
Conveyance Method – Intake	Single to Twin Barrel 12-ft diameter Pipe (FRP / Synthetic)

Element	Description
Conveyance Method – Disposal	Single Barrel 12-ft Diameter
Conveyance Control	Multiple Inline Control Stations – Include Intake and Disposal Lines, Accept and Distribute Branch-offs, Have Valving, Anti-Backflow, Treatment, and Booster Pumps
Conveyance Routing	West Side of Mexicali and Imperial Valleys
Conveyance (General) Right-of-Way - Mexico	Mexico Highway 5 in State of Baja / Federal ROW corridor to Cerro Prieto, then along existing Agricultural Corridors to U.S. Border at El Centinela
Conveyance (General) Right-of-Way - U.S.	Eastern limits of West Mesa along BLM and other State / Federal lands. Major Crossings at I-8, S80, Hwy 86/78 (at Westmorland Control Station and Hwy 86/78 at Poe Road)
Delivery to Salton Sea Location	Southwest Salton Sea
Delivery to Salton Sea Method	12-ft Pipe, at end of Poe Rd, transitions to open trapezoidal channel (concrete lined with heavy rip rap) for aeration prior to entry to Sea.
Delivery to Salton Sea Volume	Variable – 0 to 1-Million AF per year
US length – Mainline Alignment	39-miles, elevation relief (+61-ft to -162-ft) = 223-ft, max slope 2.5% to -2.6%, average slope 0.5% to -0.5%
US length – takeoff to Salton Sea	2-miles, elevation relief (-162 to -235) = 73-ft, average slope 1 to 2%
US length overall	41-miles
Mexico length overall (CS A, S San Felipe to U.S. Border)	145-miles
Overall Length – Mainline Alignment	186-miles
Direct Point to Point Overall Length	159-miles
Maximum Elevation Along Alignment	Approximately El. 222-ft
Minimum Elevation Along Alignment (not including Brine disposal Ocean Outfall) - Pipeline	Approximately El. Minus 200-ft
Turbine Energy Recovery at Salton Sea?	Yes
Can Integrate with Large Scale Reclamation Plan	Yes
Energy Use (Estimated working)	75 to 100Mw, geothermal and other renewable (i.e., wind, via La Rumorosa) energy sourced.

Water Source Identification

Under the proposed terms of public-private partnership with the State of Baja, Baja would assist the project consortium in securing necessary permits for access to state and federal lands in Mexico and acquire water rights from Mexican landowners.

The primary water source will be groundwater mined from wells that extend into nearshore and coastal aquifer materials. This groundwater will have a direct hydrologic connection to the Sea of Cortez and will therefore be naturally-filtered sea-groundwater. These waters are controlled by the State of Baja and Federal government bodies of Mexico.

Land Use

The STIP alignment passes through approximately 145 miles of Mexican land and 41 miles of U.S. land, for an approximate total of 186 miles. The majority of the land within the U.S. is controlled by the Federal government agencies, and essentially undeveloped land associated with the West Mesa of Imperial County. A small portion of it crosses State and County rights-of-way at freeway, highway and road crossings. The terminal outlet at the Salton Sea along Poe Road is assumed to be within CalTrans or County jurisdiction, and the outfall channel would likely be located on Bureau of Reclamation or IID controlled land. BWG team will further investigate the ownership and easement issues as it refines the locations and alignment of facilities.

Within the Mexican portion of the alignment, the majority of the alignment from San Felipe to Cerro Prieto will follow State and Federal Highway rights-of-way controlled by the Mexican Government. Cerro Prieto will serve as a major control hub of the STIP system and is controlled the Comisión Federal de Electricidad. Northerly of Cerro Prieto, the alignment generally passes through existing agricultural road and drainage corridor rights-of way controlled by Irrigation Districts of Mexicali Valley (i.e., Distrito de Riego 014, Rio Colorado), including sharing right-of-way along the corridor for the Reforma Canal. There are a few major crossings, such as at Highway 2 near Ejido Choropo at the take-off for the Tijuana Aqueduct at the Reforma Canal, that include some private property or have unclear ownership, sharing the right-of-way along the corridor for Ave Progresso and the Progresso Canal, at the Highway 2 Tecate-Mexicali/Tecate-Rumorosa Libre junction, and at the U.S. Border at El Centinela. The State of Baja, our partner, will be addressing the issues of right-of-way and acquisition. In the area of San Felipe, there may be some private and municipal property permissions needed to facilitate the alignment.

Land use within the wellfield and discharge areas would either be by grant, permitting, and where private lands or private held crossings are involved, by lease or similar arrangement.

Environmental Impact

The environmental impact preliminary assessment described herein is to date based on the research performed by the BWG team, which includes field observations, direct experience, desktop review of available publications, and consideration of a variety of information and data from consultations with various resource agencies and stakeholders. BWG has supplemented its research in Mexico with detailed discussions with Mexican officials, the scientific teams at CICESE, and officials of the International Boundary and Water Commission ("IBWC"). In the U.S., BWG has supplemented its research with detailed discussions and meetings with local experts, geothermal operations representatives, land owner groups, Bureau of Reclamation representatives, State officials, and State and Federal elected officials.

Key environmental impact issues of the STIP and its associated facilities primarily include those resulting from the construction and operation of the pipelines and various control stations, the construction impacts of the wellfields and shorefall stations, the marine components of the outfall assembly, and the discharge plumes of the brine pipeline discharge into the Sea of Cortez, and the introduction of saline groundwater into the Salton Sea. However, the overall positive environmental impacts the STIP cannot be overstated and must be considered when evaluating any negative environmental impacts from the construction and operation of the STIP facilities.

A summary of the key environmental impact issues associated with the STIP and their potential mitigation are provided in Table 4:

Table 4: Summary of Key Environmental Impact issues for STIP.

Location *and Issue*	**Potential Impact**	**Applicable Mitigation**
Ometepec Saltflats (Mudflats) – Buffer Zone of Marine Biosphere Reserve *Surface Impact; Well Arrays in Ometepec Mudflats; Access Roads; Drilling; Well Installation and Operations*	Moderate Negative, surface disturbance and influence of construction and operations.	Minimize footprint, work with environmental / habitat specialists to minimize disturbance.
Ometepec Flats and Las Salinas Alluvial units in connection with and recharged by ocean waters *Pumping Operations, Northerly Wellfields*	Minor, net positive, wells to be located in deeper sediments to gain permeability and filtration effects, very limited disturbance to benthic or suspended marine life, slight positive gain by improvement of oxygenation of upper sediments due to seawater infiltration.	Keep adequate separation of well screening from sea floor / surface.

Location *and Issue*	**Potential Impact**	**Applicable Mitigation**
Coastal facilities namely between Estrella and Delicias *Surface Impact; Shorefall Stations; Wellfields South of San Felipe*	Moderate, surface disturbance due to construction and operation of facility. Pipeline facilities may impair accessibility / crossings.	Minimize footprint, work with environmental / habitat specialists to minimize disturbance.
Shore and shallow water facilities namely between Estrella and Delicias *Pumping Operations; Southerly Wellfields*	Moderate from surface disturbance due to construction and operation of facility. Minor due to actual pumping - wells to be located in deeper sediments to gain permeability and filtration effects, very limited disturbance to benthic or suspended marine life, slight positive gain by improvement of oxygenation of upper sediments due to seawater infiltration.	Minimize footprint, work with environmental / habitat specialists to minimize disturbance.
Estrella or Delicias *Outfall; Pipeline, marine segment*	Moderate near shore where pipeline will need to be protected by revetment and other armoring. May have localized effect on littoral processes of sediment transport. Would need to be markered as nearshore navigation concern. Overall likely to be a net positive as armoring and anchoring of overall pipeline will serve as artificial reef habitat. Disturbance grates in construction and preliminary start up – offset over time by benefits of reef effects.	Minimize footprint, work with environmental / habitat specialists to minimize disturbance and maximize environmental benefit as artificial reef.
Offshore 20 to 25 miles along upper west edge of Wagner Basin, approximate water depth 300-ft. *Outfall Discharge Array Area*	Moderate local disturbance to bottom, however, is to be located strategically on sand/ mixed bottom type to limit biologic disturbance / damage. Pipeline manifolding and its anchoring / protective cover expected to develop over time into deepwater artificial reef complex.	Minimize footprint, work with environmental / habitat specialists to minimize disturbance and maximize environmental benefit as artificial reef.
Marine environment at brine outfall, water depth of discharge is at approximately 300-ft depth and focused to disperse into midwater of	Low / Sub-moderate. The diffusers will be tunable for both focus of jet and overall valving with a conceptual "open" working diameter of 3-ft, CSA = 7 sq ft, tight focus may be 1.5-ft diameter, conceptually looking at 14	Processed blended discharge plume is expected to stay in deep midwater to avoid surface / near surface and benthic habitats. Plume is anticipated to be very close to surrounding water salinity / density

Location *and Issue*	**Potential Impact**	**Applicable Mitigation**
Wagner Basin mid-water column. *Outfall Brine Plume*	to 20 diffusers to be located on the terminal distributary manifold at the end of the outfall. Outfall will be at the 50-fathom / 100m line leading into the Wagner basin. The working pressures will be on the order of 200-psi at the shore-fall station, and approximately 50-65 psi working at eductors (similar to garden hose pressures). The diffusers are conceptually to be made of fouling resistant 90/10 Copper-Nickel alloy. Eductors have no moving pump parts, rely on venturi effect and are similar to mixing eductors used for sensitive marine reef aquarium systems. Jet focusing, mixing ratio, and micro bubble curtaining blend discharge to near the salinity / density of surrounding waters.	a short distance from eductor field where it is expected to be picked up by prevailing current systems through increasingly deep stair stepping basins to the Pacific Ocean. Significant further research to prove out.
Pipeline Alignment option diverges from Highway 5 to avoid mountains – runs alignment along westerly edge of mudflats lowlands. *Overland Pipeline, Diversion option at Las Salinas and Condensadora*	Moderate - Hugs lowland edge along mountain-front – edge of Marine Bio-sphere Buffer Zone. Disturbance in construction and start-up, may have impacts to wildlife crossing unless pipe is buried.	Minimize footprint, work with environmental / habitat specialists to minimize disturbance.
Pipeline Alignment in general, which follows existing rights-of-way and developed land in Mexico. Pipeline follows east edge of West Mesa in U.S. – essentially undeveloped land of low environmental issue *Overland Pipeline, general*	Low to Sub-moderate – typical for predominately buried pipeline system.	Minimize footprint, work with environmental / habitat specialists to minimize disturbance.
Various locations located strategically along alignment for control of pipeline flow and to provide mixing, branch-	Low to Moderate – disturbance to local area during construction and by operations; blow-off and related waters need detention and disposal (likely to be fed into brine disposal	Minimize footprint, work with environmental / habitat specialists to minimize disturbance.

Location *and Issue*	**Potential Impact**	**Applicable Mitigation**
offs, treatment, boost, and anti-backflow valving. *Control Stations*	pipeline). Noise and traffic locally increased. Offsetting positive effects include incidentally bringing stable power to local areas by associated substations along the route.	
Outfall into Salton Sea – open concrete lined trapezoidal channel, rock lined for aeration. *Salton Sea Discharge*	Low where fenced off for safety. Located in highly disturbed / impaired habitat. Water will flow through rocky channel at several feet per second on its way to Salton Sea. Potential for some preliminary scour and disturbance of playa and nearshore sediments. Offsetting positive effect is wetting of playas and formation of zone much lower salinity and high water quality – immediate formation of viable habitat in expanding "bubble" of imported sea-groundwater.	None, other than to work with environmental / habitat specialists to minimize disturbance in construction.
Coastal Groundwater entering plume of sea-groundwater *Salton Sea Influx Plume*	Unknown – variations in chemistry between Salton Sea waters and sediments and influx water need to be explored but are expected to have a positive effect. Positive effect early on by dilution. Strongly Positive effect by drowning playas.	
Salton Sea overall *Salt Loading, Salton Sea from imported sea-groundwater*	Moderate – Inevitability of salinity increases regardless of water sourced in Colorado River or Ocean. Salt loading will be much higher than historically during initial refilling (first 3 to 4 years) then taper off as refilling makeup volumes reduce to make-up volumes. Further reduce in long-term as sea-groundwater becomes replaced with other lower salinity waters developed in future Reclamation efforts. Offsetting positive is also that highly polluted New River Water may be removed as influx with available offset capacity provided by the pipeline.	Opportunity to drain off hypersaline conditions via brine disposal pipeline in future. Mitigation may also include segregation of lake to nearshore lower salinity and central hyper-salinity regions for habitat and recreation purposes.

Salton Sea Salinity and Salt Loading

It is recognized that salinity increases to the Salton Sea are inevitable, regardless of whether an influx of new water is sourced from the Colorado River or the Sea of Cortez. The Sea will continue to receive dissolved and suspended loading measured in millions of tons per year. The functions of the total dissolved solids (TDS) loading and equilibrium thermodynamics controlling the precipitation and dissolution of the salts deposited on the sea floor and playas are in a sensitive balance. As salinity of the waters in the Salton Sea decrease, the precipitated salts would tend to go back into solution, raising the salinity. As salinity increases, equilibrium is driven to favor precipitation of the salts from the water onto the bottom as a solid.

Thus, even if Salton Sea could be drained and refilled with fresh water overnight, it would soon begin to become salty again. This was what is understood to have happened in its initial filling and early life of the first half of the 1900's. Freshwater is simply not available to send to the Salton Sea in sufficient quantities to be meaningful. Even if freshwater were available, salt would accumulate.

Therefore, the immediate future must be addressed first. The STIP would restore and stabilize water elevation in Salton Sea, allowing for the re-submergence of the playas. This approach addresses two of the most profound issues facing the Salton Trough (environmental quality of air and water and options to augment water regional water supplies). Addressing the thermodynamics of precipitated materials on the playas and bottom of Salton Sea would remain as a long-term challenge (the brine disposal pipeline offers the ability to drain off hyper-saline water from the Sea).

The result of implementation of the STIP will result in a more favorable condition in Salton Sea and should be considered vastly superior to the current condition or non-import solutions. No other plan offered to date provides for an environmentally responsible means of brine waste disposal.

Water Use

Because the STIP is based on importing an essentially inexhaustible source of water and has a flow capacity that exceeds the evaporative losses of Salton Sea, it is considered immune to the issues of many other water sources with respect to mass balance or decreases in influx flows. The STIP will be sized to minimize energy demands and to facilitate future upgrades in flow rate capacities. It will be capable of moving sufficient volumes of water to bring the Salton Sea back to a historic 'normal' pool level within 7 years, with the majority of the filling happening in the first three years. This will re-submerge the playas and allow for the Sea level to be maintained at a near-constant elevation.

Once the main filling of the Sea has been accomplished, maintenance flows will be used to make up for lost influx while the remaining flow capacity will be utilized by the region for augmenting water supplies. BWG will use the best technology available for desalination efforts to extract as much fresh water as possible and to minimize and concentrate brine disposal flows. The regional brine disposal pipeline will

receive brine and water treatment residuals from both the desalination facilities, as well as other restoration efforts.

For conceptual purposes, it is helpful to proportionally envision the Salton Sea as a puddle: very shallow given its surface area. For example, if the Salton Sea were reduced to a football field in length, it would be less than an inch deep. The Salton Sea had, until the last few decades or so, had a working surface elevation of about minus 227 feet (below sea level). At that elevation, it has a surface area of about 375 square miles. The Sea is understood to have an evaporative loss rate of about 5 to 6 feet per year, which translated into about 1.3 million acre-feet per year. Influx reductions and climate has caused the Salton Sea to recede, and it currently is at an elevation of about -236 feet.

In the early 1980's, the influx volumes are understood to have been about 1.2 to 1.3 million AF per year. That rate on average declined moving to the present time. From data provided by USGS and IID, the surface elevation of Salton Sea from 1987 to 2002 (15-yrs) ranged from -226 to about -229 feet (approximate 3-ft bracketing). From 2003 through first of 2016, the elevation decreased from about -228 feet in 2003 to its recent value of about -236 feet (approximate 8-ft decline), with an influx of 1.0 million AF. The QSA and other factors have now begun to cut the recharge rate over time to somewhere about 700 to 900k AF per year. As a consequence, the Salton Sea will now begin to shrink and salinate much faster after 2018.

Cross Border Governmental Coordination and Permitting

The STIP would require extensive coordination among multiple binational stakeholders and regulatory agencies. The major forum for cross-border coordination and permitting is the International Boundary Water Commission, which has been informed of BWG's project plans. In Mexico, the key federal agencies include the Secretariat of Environment and Natural Resources ("SEMARNAT") and the National Water Commission (Conagua). Key Mexican state agencies include fisheries, agriculture, economic development and environmental protection.

In the United States, key federal agencies include the Department of State (Presidential Permit for Border Crossing), the Bureau of Reclamation (cooperation in administering contracts for new potable water made available at Lake Mead), and the Natural Resources Investment Center in the Department of the Interior (public partner in BWG's proposed public-private partnership in the United States). The State Water Resources Control Board will be the key California agency who must approve the terms of conditions of delivering project water into the Salton Sea.

BWG has initiated preliminary discussions with the major agencies in Mexico and the United States. The specific terms of necessary permits and approvals will be identified as part of the joint Feasibility Study and associated due diligence conducted in support of contract negotiations. Regarding environmental review under federal and state law, the Bureau of Reclamation and Natural Resources Agency may be suitable candidates to serve as lead agencies.

Project Development Schedule

Figure 9 provides a high-level schedule for major project development activities. The overall objective is to enter into necessary agreements, complete environmental reviews and secure regulatory approvals within four years. Pipeline construction would start in year 5 and deliveries of seawater to the Salton Sea would commence during project Year 8. With the first three years of deliveries of seawater exclusively provided to the Salton Sea, the construction of desalination plants would commence a few years later.

BWG proposes a joint investigation and due diligence effort with the State of California. The initiation of this 12-month joint Feasibility Study would trigger formal efforts to form the public-private partnerships in Mexico and the United States, form project consortia and initiate due diligence in advance of negotiations with buyers of potable water. Assuming the results of the joint investigation are favorable, BWG would form its project consortia, initiate negotiations of public-private partnerships in Mexico and United States and initiate negotiations with water users.

The objective of these negotiations would be to enter into acceptable conditional agreements with the State of California and water users within two years. These agreements are anticipated to have conditions precedent related to environmental reviews and regulatory approvals in both countries. Permitting efforts in both countries would be conducted within the context of the public-private partnerships in the respective countries. BWG anticipates entering into an exchange agreement with the Imperial Irrigation District in parallel with environmental review and permitting efforts. BWG believes these efforts can be completed within two years after entering into the various agreements. The timeline conforms to the regulatory process in Mexico and President Trump's "Presidential Executive Order on Establishing Discipline and Accountability in the Environmental Review of Permitting Process for Infrastructure."[2] The public-private partnerships in Mexico and the United States are anticipated to facilitate timely execution of project treaty minute and presidential permits.

Construction of the wellfield/pipeline system would start in project year five. With an anticipated pipeline construction schedule of three and a half years, the delivery of seawater to the Salton Sea would start in the middle of the eighth project year. Construction of the treatment plants would start later because the one-million-acre-foot annual project water supply will be dedicated for delivery into the Salton Sea for the first three years. The staging of treatment plants would reflect the delivery schedules specified in agreements with water users. Given the dedication of the full project water supply to the Salton Sea for the first three years of project operations, the soonest new potable supplies would be available would be in the middle of project year eleven.

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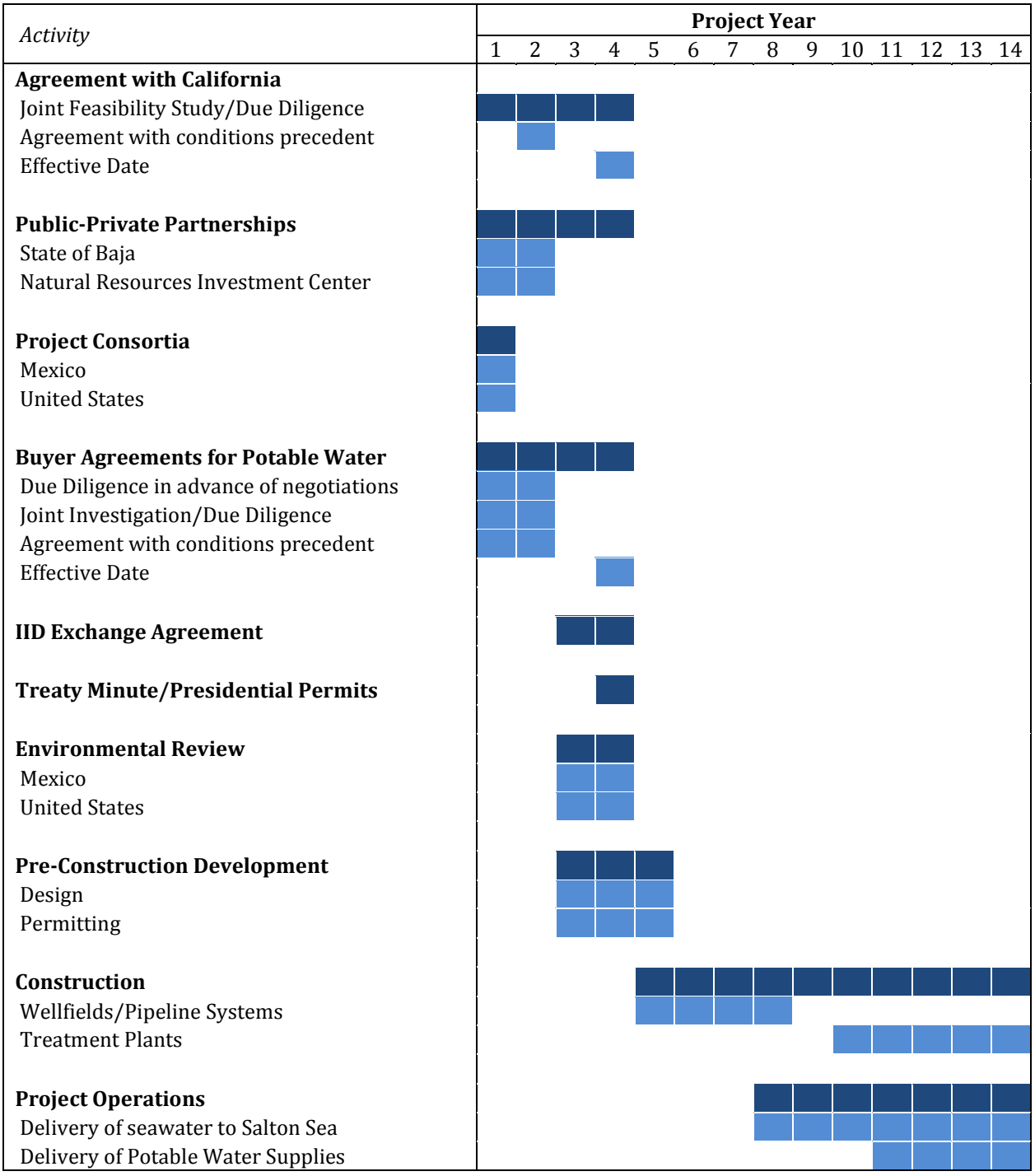
[2] Issued August 15, 2017, https://www.whitehouse.gov/presidential-actions/presidential-executive-order-establishing-discipline-accountability-environmental-review-permitting-process-infrastructure/.

Figure 9: STIP Project Development and Implementation Schedule



Operations Schedule

BWG estimates that the elevation of the Salton Sea can be increased to an elevation of -227 feet within seven years of delivery of seawater to the Salton Sea and eliminate any exposed playa (see discussion of project's environmental benefits in Section 2). With deliveries commencing in project Year 8, STIP would raise the level of the Salton Sea to recover exposed playas within 15 years.

4.0 Cost Projection

The preliminary STIP cost projections are presented by major component:

- Salt water wellfields
- Salt water supply pipelines
- Desalination plants
- Regional brine disposal pipeline
- Brine outfall to Wagner Basin

Assumptions

Planning-level STIP cost estimates were developed with the assistance of contractors, consultants and BWG industry experience. For all components, labor estimates assumed U.S. labor rates, and each component includes its own power grid tie-in estimates, such as from existing service to the proposed pump stations, wellfields and desalination plants. Component-specific cost assumptions are as follows:

For the **salt water wellfields**, well construction budget includes vertical and slant well considerations.

For the **salt water supply pipelines**, a minimum of three pipeline suppliers where utilized to determine pipe cost. A qualified pipeline contractor provided a pipeline bid based on best available pipe supplier price and delivery scenario, in a per foot bases on segments between pump stations, wellfields and pipe size variations. Pipeline bid includes items such as underground tunneling as required, road and other crossings, generalized soil and or rock conditions, creek and or storm channel protection, buried construction, backfill utilizing native soil materials, U.S./Mexican border security, steel and concrete lined pipe and other appropriate considerations. Pump Station considerations include main structure, pumps and manifold transitions, blow off considerations, 100-foot pipe intake and exit construction either side of structures for tie in to main lines, ability to connect to additional supply and or discharge lines and power and control facilities.

For the **desalination plants**, all cost estimates are based on upon previous industry experience for RO technology and include engineering, permitting, construction, labor, power, chemicals, and sustain capital, and maintenance. The desalination budget includes a total of 150,000 feet of supply and brine discharge pipeline (84-inch supply and 60-inch discharge) to the proposed main line construction. This budget also includes a total of 60,000 feet of new desalination water supply to purchase destination via a 60-inch pipeline.

For the **regional brine disposal pipeline and outfall** into the Wagner Basin, estimates assume bottom of sea floor construction with adequate protection from tides, currents and potential lighter ship anchor

interference. In addition, a brine discharge diffusion system is based on both proprietary and active devices utilized throughout the world.

The budget provided is desktop-level research. It can be considered conceptual level and based on the working drawings/maps and concepts developed as part of the team's due diligence. The numbers provided can be subject to considerable refinement as the project evolves. For the numbers provided, supporting tables and summaries have been developed that can be available for review. Preliminary energy factor includes total 100Mw energy power requirement for the project backbone main line supply and discharge.

Planning-Level Estimates

Capital and operational cost projections for STIP are presented in Table 5. The total capital investment is estimated at $8.1 billion over the construction periods specified in Figure 9. The salt water supply pipelines delivering seawater to the Salton Sea and the desalination plants accounts for slightly more than half of this total. The regional brine disposal pipeline and outfall to Wagner Basin totals approximately $2.0 billion. The project's collection of desalination plants producing annual potable water supplies of 325,000 acre-feet (290 MGD) requires a capital investment of about $1.6 billion. An annualized cost of capital investment is also provided.

Table 5: Planning-level cost projections for STIP by major component (2018 dollars).

	Capital Investment			Maintenance		Power	
Project Component	Amount ($M)	$/AF*	Annual $/AF[3]	Amount ($M)	Annual $/AF	Amount ($M)	Annual $/AF
Well Field	$757.3	$757	$42	$11.4	$11	$15.5	$15
Pipeline System	$3,728.2	$3,728	$208	$ 7.4	$7	$31.4	$31
Desalination Plants	$1,558.2	$4,794	$268	$49.8	$153	$185.9	$572
Brine Line to San Felipe	$1,882.2	$5,791	$323	$1.9	$6	$20.0	$62
Outfall to Wagner Basin	$142.0	$437	$24	$0.7	$2	$3.3	$10
Total	**$8,067.9**			**$71.1**		**$256.1**	

*The well field and pipeline system has an annual capacity of 1,000,000 acre-feet and the desalination plants, brine line to San Felipe and Outfall to Wagner Basin has an annual capacity of 325,000 acre-feet.

[3] The calculation of the annualized cost of capital investment is based on the financial structure of the Carlsbad desalination plant. For discussion, see "Economic Perspective on San Diego County Water Authority's Carlsbad Desalination Plant," Rodney T. Smith, Journal of Water, January 15, 2015, http://journalofwater.com/jow/economic-perspective-on-san-diego-county-water-authoritys-carlsbad-desalination-project/. The key factors are the debt/equity structure (82/18), yield to maturing on debt (4.72%), equity return (10.7%), escalation of debt and equity payments by 2.5%. This structure yields a weighted average cost of capital of (about) 5.8% and a real rate of return of 3.22%. Of the total $923 million of capital uses at closing, $210 million was used for reserves & interest and $44 million for financing and other costs. Therefore, total capital uses exceeded EPC and permitting costs by 38%. Applying the same percentage increase to the capital investment costs in the text, yields an amortization factor of 5.588% (1.38 multiplied by a payment factor based on 3.22% for a term of 50 years).

The projected annual operations & maintenance and power costs total $327 million. Operations and maintenance accounts for 22% of the total and power accounts for 78% of the total. Desalination plants account for about 70% of the totals.

These planning-level cost estimates are preliminary but provide a framework for identification of the potential costs of STIP's major components. BWG anticipates that the initial project definition will be refined during joint investigations, due diligence and negotiations with potential customers. More specific information on the nature of potential customer demands would be used to "value-engineer" STIP so that it meets customer demands at the lowest lifecycle cost.

These planning-level cost estimates do not consider the favorable circumstances of using naturally-filtered seawater rather than securing seawater from an open intake. The use of naturally-filtered seawater will materially reduce the capital investment requirements for pre-treatment facilities of desalination plants, eliminate fouling of plant filters and reduce power costs. BWG's continuing due diligence efforts include further investigation into the project benefits conferred by the use of naturally-filtered seawater.

A key component of BWG's continuing project development efforts involve the potential use of distillation desalination rather than reverse osmosis, which is the basis of the planning level cost estimates. There are two potential advantages of distillation desalination: (1) increased product yields and (2) reduced power costs when distillation plants are co-located with geothermal power resources. As distillation technology become commercially viable, it will be a favorable development for project economics by further reducing capital investment and power costs per acre foot of potable water produced.

5.0 Project Funding

BWG proposes to fund STIP as a traditional privately-funded, public-private infrastructure partnership with multiple tranches of private financing. The initial round, early-stage project development, is the most speculative. Once public agencies in both Mexico and United States step up and express potential interest in securing water for Salton Sea restoration and entering into proposed public-private partnerships, there will be an identified pathway for project success. This pathway will allow BWG and its partners to secure a series of capital commitments necessary for funding the planning, design, permitting and construction to implement the project.

The BWG business plans call for contracts for the delivery of seawater for Salton Sea restoration and sale of new potable water supplies. Therefore, the project consortium in Mexico and the United States will be responsible for paying the operation and maintenance costs (in fact, all costs) of STIP. For STIP to be economically viable, the contract prices must generate sufficient revenue to cover all aspects of BWG's project (see Section 2).

BWG is also in discussions with private equity firms investing in lithium recovery technology. As these technologies become commercially viable, there will be additional income streams generated by STIP.

Conclusion

STIP's direct delivery of seawater into the Salton Sea will help address public and ecological health issues at the Salton Sea. The delivery of seawater as feedstock for a desalination/treatment program will supplement water supplies in the Colorado River region. The joint use of STIP's infrastructure for these purposes enables the State of California to import seawater at the lowest cost for inclusion in its long-range SSMP.

The scope of STIP is ambitious. It proposes public-private partnerships in Baja and the United States. In addition to the project development efforts, BWG has been engaged in an outreach program. See Attachment C for letter of support from Congressmen Vargas and Ruiz to Secretary of the Interior Ryan Zinke See Attachment D for letters from Congressmen, local communities and unions to Secretary Laird requesting that consideration of the BWG project receive "full and fair consideration on its merits, in compliance with all applicable rules and regulations."

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ATTACHMENT A

Supplemental Discussion Regarding the Salton Trough, Salton Sea, and Insight to BWG's Restoration Approach

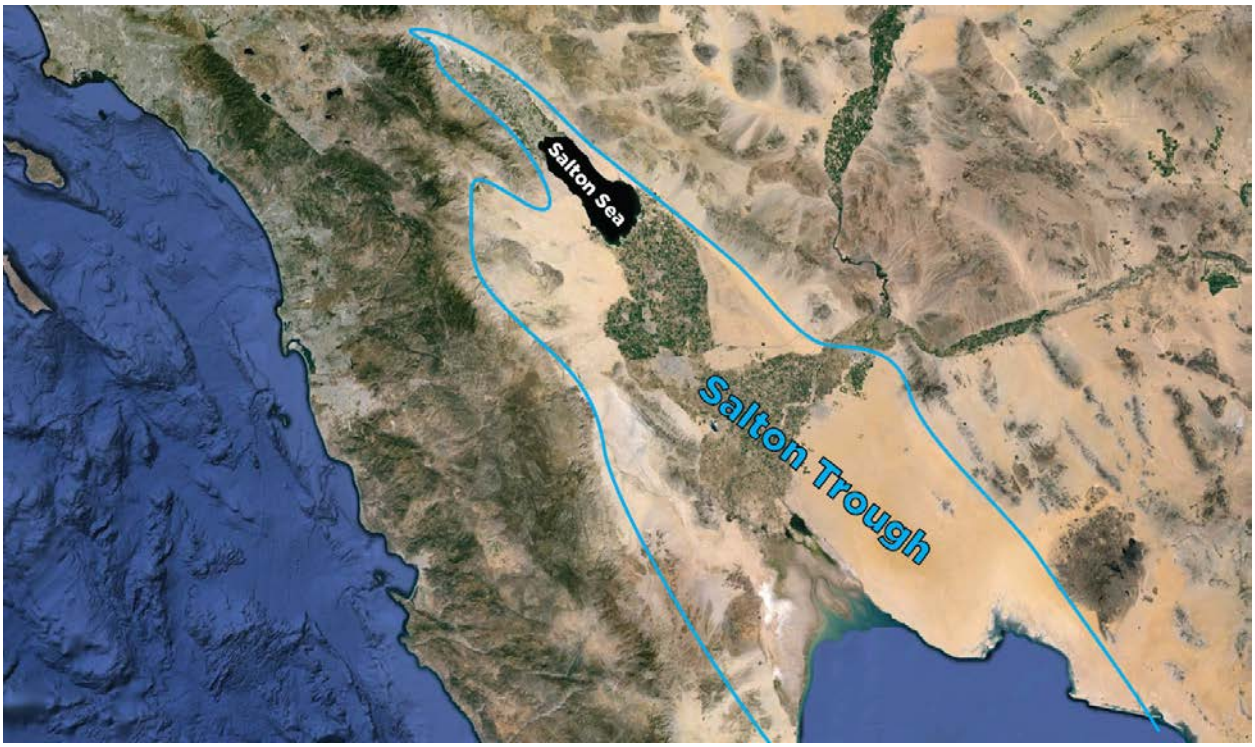
BACKGROUND

Salton Sea vs. Salton Trough

As can be readily seen in the following graphic, the Salton Sea is only a portion of a greater overall system – the Salton Trough, a large tectonic depression created by the "unzippering" of Baja and the southern California borderland from the North American continent. The Salton Sea is a blind sump with a bottom that sits about 271 feet below sea level. It is interconnected by drainage, climate, and structural geology to the adjacent Coachella and Imperial Valleys, and the Colorado River Delta complex. Drainage in the intensely productive agricultural valleys is entirely into the Salton Sea.

The Salton Sea is NOT a singular system. As a closed system, it can only deteriorate. To successfully mitigate the Salton Sea, we must have an integrated program that includes all the components it is associated with and treats the causes of the problems, not the symptoms.

Problem with the majority of plans being put forward regarding the Salton Sea is that the Sea is a part of a greater whole – a major component albeit – that cannot be effectively addressed on its own without significant adverse side effects. The Salton Sea is a part of a greater geologic system, that system being the Salton Trough.



Brief Recent Geologic History of the Salton Sea

The Salton Trough is a primary geomorphic province of California and includes Mexicali Valley and the northerly limits of the Sea of Cortez, the Imperial Valley, lower reach of the Colorado River, the Salton Sea, and the Coachella Valley.

In the not too distant geologic past, the Salton Trough was connected to the young and opening Sea of Cortez that formed when the transform and spreading centers of the East Pacific Rise rifting joined with strike slip faulting along the Pacific and North American Plates to replace a subduction belt that built the Sierras, Baja, and the Coast Ranges. The new tectonic regime split Baja off the mainland of Mexico and opened the Sea of Cortez. These new tectonics – namely rifting – also caused the crust to separate and the area along its alignment to downdrop into a trough.

Around the end of the Miocene, about 5.3 million years ago, the ocean extended well into the trough, as far as the modern Palm Springs. Meanwhile, significant uplift was happening in the area of the Plateau States centered on Colorado. This created the basis for the development of the modern Colorado River.

The river, from this uplift and the associated redirecting of pre-existing drainages, now had significant elevation and flow driving it and began to erode the rising terrain of the Plateau area. The sediments from this erosion were deposited in one small area – the upper portion of the newly formed gulf. By Pleistocene time, about 2 million years ago, sediments from the Colorado fill in the Gulf.

For millennia the river deposition interplayed with the sea and the trough began to be filled in, but just barely. Eventually the sea was pushed back by the deposition of the sediments from the Colorado River, creating a divide in the area of Mexicali, and what was ocean was now land. Tectonics continued to drop the trough, and the delta area of the river fed the divide.

By Holocene time, 11,000 years ago moving forward, from time to time, the river would change course at the fork created by the divide and instead of draining into the sea, it would drain inland into the down-dropped land of the modern Imperial and Coachella Valleys and begin to fill it with water – forming stands of lakes known collectively as Lake Cahuilla. Since the Colorado River would flow unfettered by man or other restrictions, Lake Cahuilla was filled to exceptional depths and extent (as much as 300 feet deep and extending from Mexicali to Indio within the trough). At approximately elevation 39ft, the lake would overflow through Mexicali Valley into the gulf.

Approaching recent time, over the last few thousand years, the river would eventually swing its discharge back into the gulf, and the lake stand would evaporate off and be again replaced by dry land and salty ponds. The Salton Sea was created as a man-made occurrence of the above process. In 1905, work on the river combined with an exceptional storm year caused the river to jump its banks and flow literally uncontrolled into the Salton basin. Within a few years this was "corrected" and the river redirected back to its flow into the gulf. The accumulated water formed the basis of the Salton Sea.

Following the formation of the Salton Sea, major works were performed on the Colorado River to control and impound flows, and to bring controlled irrigation into a fertile valley created by the accumulated lake and alluvial deposits. These improvements also brought problems that the natural system was changed. Flushing by natural cyclic processes was no longer active, salts and agricultural runoff began to accumulate, and development altered the processes even further.

The Salton Sea had a surface elevation of about -195 feet following its preliminary flooding in 1905 through about 1907 and had a surface area of over 500-square miles. Once the Colorado River was cut off, the Salton Sea began to shrink. By 1948, it had a surface elevation of -240 feet. During that time, the salinity ramped from about 3,000ppm to about 40,000ppm. In the late 1940s and 1950s, the Bureau of Reclamation and IID implemented a major irrigation improvement program, and made an attempt to stabilize the sea. By 1956, the elevation was brought up to about -235 feet and had a salinity of about 33,000ppm – about that of seawater. A variety of marine fishes were introduced in the 1950's to replace the fresh / brackish water species that died off as the salinity increased. Between the 1950s and the 1970s, the Salton Sea level and its salinity were partially stabilized and it supported a recreation and habitat boom. This corresponded to a surface elevation of about -227 feet. By the 1980s, water diversions and other factors combined such that the level and water quality of the Salton Sea could not be maintained while balancing all the needs of the now deficit Colorado River influx. The Salton Sea began a slow salty death spiral – most of the recreation and fishery was destroyed and replaced by massive fish kills, uncontrolled algae blooms, nasty odors, massive fly populations, and playas of selenium and other pollutant enriched salty dust. The result was disastrous to the area.

Existing Condition of Salton Sea

Once the Salton Sea lost its interconnection with the ocean and the large flushing flows of the Colorado River, it became a sump in an agricultural valley that had no outlet. It was now forced to accumulate large volumes of runoff, salt, and pollutants with no way to drain. Water had one outlet – evaporation. The replacement water, which contains thousands of pounds of salt per acre-foot kept the Salton Sea from evaporating away, but also added more and more salt. The salinity and pollution can only build.

As of current, the Salton Sea has seriously declined as high quality water is diverted elsewhere, and the influx waters increasingly consisting of agricultural drainage combined with polluted runoff and sewerage. The Salton Sea has begun to shrink away, and is now almost twice saltier than the oceans, and gaining in salinity by thousands of parts per million a year. The surface elevation, per the USGS Station at Westmoreland (USGS 10254005 SALTON SEA NR WESTMORLAND CA) is now about -236 feet (below sea level) and shrinking. It currently has a salinity of about 60,000ppm and climbing. The Laws of Conservation must be obeyed if the Salton Sea is to be saved. There must be an interconnection to replenishment waters and for salt removal. History has shown that the needs of development and agriculture combined with the changes to the natural systems of the Salton Trough have created a condition that there is

simply not enough resource to provide for a healthy and viable Salton Sea without restoring the critical interconnections it once had.

Problems and Needs

Overview

There is no way to feasibly correct the situation and to create a stable Salton Sea without addressing it as a component of the greater Salton Trough system. Without a mechanism to drain and recharge / recirculate its waters and to manage salt accumulation, no amount of re-organization of the Salton Sea by itself can correct the problem without serious and severe consequences – including to any of the above issues. The Salton Sea must be given a means to circulate and flush itself out, remove accumulated salts and pollutants, and be given enough volume of influx water to sustain a stable elevation if it is to be a viable resource. This can only happen with a well-organized and integrated plan that includes all of the Salton Trough components – and reunites it with the Sea of Cortez.

The Salton Sea is a sump. The influx sources of water into the Sea are salty and / or impaired. The Sea is located in one of the most arid on Earth. The scale of the problems at the Salton Sea is relatively large and has taken over a century to develop. The problems to be addressed have wide ranging and serious ramifications if they are not solved properly. It is possible to work with and capitalize on the current Salton Sea Authority and related methodologies to mitigate the Sea's problems to an acceptable level – however, the successful overall plan will need to address the causes, not the symptoms. The major causation issues include:

- Evaporation;
- Low influx;
- Water Quality;
- Pollutants;
- Nutrients and algae;
- Circulation;
- Salt;
- Shoreline and Sea level fluctuations; and
- Climate change.

It must be recognized that once the Salton Sea lost its interconnection with the ocean and the large flushing flows of the Colorado River, it became a sump in an agricultural valley that had no outlet. It was now forced to accumulate large volumes of runoff, salt, and pollutants with no way to drain. Water had one outlet – evaporation. The replacement water, which contains thousands of pounds of salt per acre-foot kept the Salton Sea from evaporating away, but also added more and more salt. The salinity and pollution can only build. This salinity builds up in both soil and water.

The Salton Sea is currently in a losing battle with its surroundings. Under current conditions, the Sea loses its water at a rate of about 5 to 6 vertical feet per year. This translates into a loss of about 1 to 1.2-million acre feet of water, depending on the "footprint area of the Sea, with 1 acre foot equating to about 326-thousand gallons. As the water evaporates, it leaves anything "solid" suspended or dissolved in it behind.

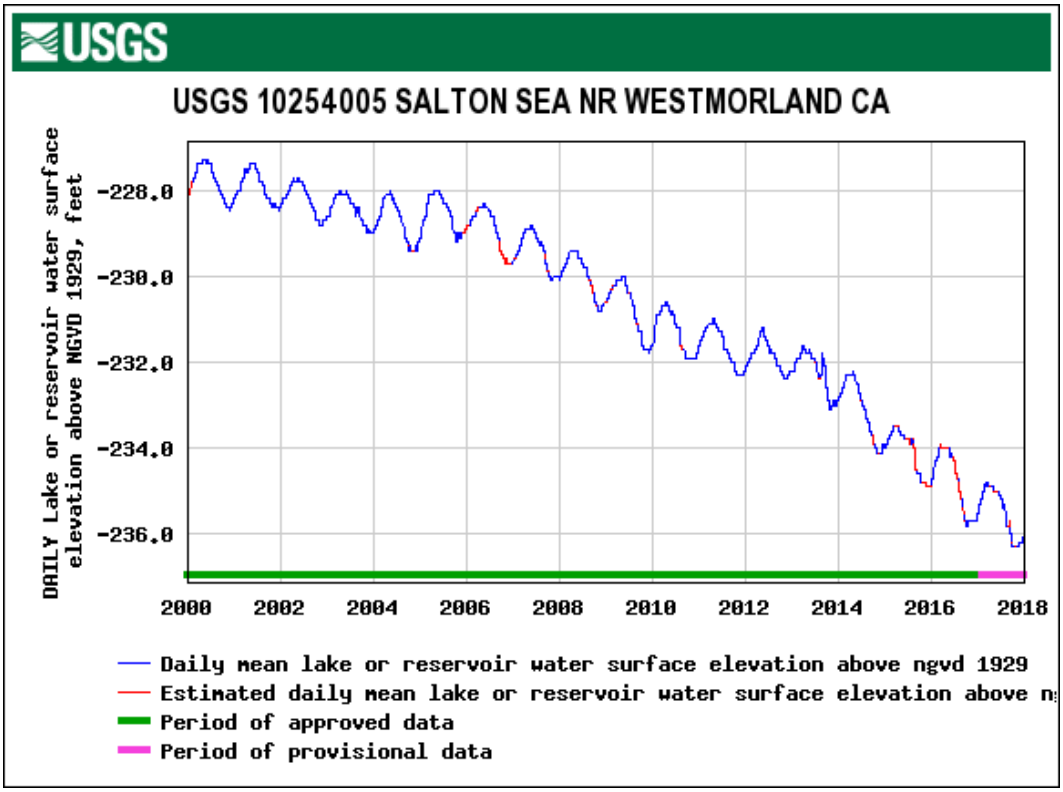
The majority of water entering the basin that ultimately drains to the Salton Sea are sourced in the Colorado River out and start out with a salt concentration of about 1-ton per acre foot. Along the way, they pick up a variety of chemicals from agricultural, rural, and municipal sources. These chemicals include salts, nutrients, and pollutants. Other sources include essentially raw sewerage effluent and other septic waters. As these waters approach the Salton Sea, the total loading of salts and other dissolved / suspended solids increase dramatically.

High Salt and Pollutant Loading

The fate of these included solids – salts, pollutants, nutrients – is sealed, there is no escape from the basin now that there are no flushings as when the Lake Cahuilla existed. These continue to accumulate at a rate of tons per acre foot. As the water evaporates, the salt concentration increases. This is exacerbated by decreases in inflows, and in particular, where accompanied by an increase in TDS of the inflowing waters that no longer have benefit of flushing / dilution. At some point, some of the salts and other solids settle or precipitate out on the bottom. Currently, we understand the total dissolved solids content of the Sea to be about 60,000 parts per million (ppm) and climbing. For reference, this is nearly twice that of ocean water – which is only about 33 to 35,000 ppm – and much higher than water that can support typical fish and other marine life. Much of the higher lifeform biomass has long since died and their remains dissolved into the Sea and their bones deposited on the bottom. The Sea has also become enriched in a variety of pollutants, including heavy metals (including Selenium, Arsenic, Chromium, Cadmium, and Lead), herbicides, pesticides (including DDT and its daughters), fertilizers and other nutrients, septics, and industrial chemicals. Bacteria (ie. Cyanobacteria) and primitive algae periodically feed off of this "soup" and create massive blooms. These blooms can be seen from space. When these die off, they decompose and create anoxic conditions and horrible odors – including large burps of poisonous hydrogen sulfide, as well as create new pollutant and bio-toxin forms.

Declining Inflows and Exposed Flats

In recent times and into the unmitigated future, the Sea suffers from a critical loss of inflow predominately via a combination of climate change / drought, QSA reassignments, and improvements to agricultural irrigation practice / decreased agricultural runoff. This has had at least two primary effects – namely, 1) an increase in proportion of "bad" waters from other runoff sources, and 2) an upset of the inflow : : evaporation balance favoring increased evaporation, and an increase in that trend over time. The evaporation rates now have caused the Sea to recede at an alarming rate as shown in the USGS elevation graph below:



The rates of decline will tend to increase in the unmitigated future as the QSA and other man-made factors cause more water to be diverted elsewhere.

As the Sea declines, the very shallow nature of its basin causes a proportionally high area of playa (from the Latin / Spanish word for "beach") to be exposed. As the surface area of the Sea shrinks, the area of exposed lake bottom playa increases. At current, approximately 26 thousand acres (over 40-square miles) of playa are exposed. Unmitigated, this value is expected to triple in the next 25-years.

As discussed earlier herein, significant amounts of salts and other solids precipitate or settle out onto the lake bottom, and these deposits become exposed as the water recedes. The waves formed by wind chop wet the playas, along with wicking of water by the sediments around the water's edge. As this water evaporates too, it adds to the crusts exposed. These solids are the noxious toxic leavings, and are comprised of a mixture of salts, pollutants, septic organics, pulverized wastes from runoff, algae / bacteria crusts, and dead fish bones and barnacle shells.

Habitat and Environmental Quality Degradation

The Salton Sea has already declined past the point that without mitigation, desirable gamefish and other higher marine life forms cannot live. Most of the macroscopic animal life forms in the Sea now other than transient birds, are invertebrates – shrimps and other small crustaceans, worms, and similar, along with a variety of microscopic plankton, bacteria, and algae – with a

tolerance for exceptional salinity. The only higher life forms in the waters of the Sea now are exceptionally hardy small fish such as tilapia and the Desert Pupfish, and as the salinity has increased, these fish are forced increasingly to live only where the water is diluted in the vicinity of inflowing drainages. The drainages themselves, however, support a variety of small fish species.

Salinity is only one consideration regarding the biology of the Sea. Eutrophication from blooms of algae and bacteria – driven by nutrients washed into the Sea, and past fish die offs cause the water dissolved oxygen content to dive, driving anaerobic activity, and the production of poisonous byproducts such as ammonia, nitrite, carbon monoxide, and hydrogen sulfide. As the Sea becomes shallower, it becomes less resistant to thermal fluctuations, and given the average daytime temperatures of the Salton Sea area in summer being in excess of 100-deg F – this will have an increasingly profound effect on evaporation, chemical processes, and support of desirable life.

Of course, the Salton Sea in only a part of the overall physiographic / environmental province of the overall Salton Trough. It should not be looked at as a stand-alone condition, as described earlier herein, rather, an interactive component of the overall Trough. The degradation of the Sea, and in particular, its salinization and saturation with hazardous / toxic materials combined with the exposure of playas covered in crusts of concentrated precipitates are subject to attack by strong windstorms and dust-devils that create profound airborne dust hazards that are carried Trough-wide from the Sea to Palm Springs and to Mexicali.

A healthy, stable Salton Sea is indicative of a healthy overall environmental quality of the overall Trough and provides several critical benefits – including major habitat for over 400 species of migratory birds, recreation, a dedicated agricultural sink, and regulation of thermal and humidity conditions. An unhealthy, unstable and declining Salton Sea is a hazard that is derogatory to the overall Trough – including human development. Examples of the tragedy that awaits where the issues of the Salton Sea are not mitigated properly include Owens Lake, and of particular note, the Aral Sea of central Asia. In the case of the Aral Sea, which was the fourth largest lake in the world in 1960, it was allowed to dry up due to diversions of water elsewhere to a proportion similar to the unmitigated trajectory facing the Salton Sea over the next several decades. The result was that a thriving area was turned into a toxic dustbowl, and toxic fugitive dusts can be traced 1000km from it – disastrously affecting the environmental and health to such an extent that it has been dubbed the "quiet Chernobyl."

The Salton Trough, Southern California QSA, and the Colorado River Hydrologic Perspective

The climate is very arid, and is a portion of the most arid hydrologic region of North America. Rainfall is infrequent and typically 3-inches a year or less – with periods of time in some areas that may not see appreciable rainfall for years. Monsoonal precipitation is a common form of storm activity, with scattered / localized thunderstorms that can dump large amounts of water over relatively short durations of time. Temperatures are warm in winter and hot to very hot in summer.

With rainfall averaging under 3-inches per year, and the Monte Carlo effects of climate change, local natural influx can only be viewed as incidental. That said, the overall plan should not discount it entirely, rather, it should be looked at as a "wild card" of sorts. Exceptional weather systems may bring significant rainfall to the area, and given the meteorological setting, this may occur violently – as was witnessed in the past where the level of the Sea was raised markedly. These kind of events are difficult to predict.

A hydrologic factor that can be counted on is that of the Quantification Settlement Agreement (QSA), and the desires of the coastal southern California metro areas for more and more water from an already overloaded system. The QSA plans to divert hundreds of thousands of acre feet of water to these metro areas, with claim that it was "wasted" on the maintenance of the Sea.

According to the Delta Water Trust, this region is in the worst drought of the approximately 500-years. Current theories and data trends in climate change suggest this pattern is more likely than not to continue into the foreseeable future. Climate shift is likely to move to patterns of increasing periods of drought, which may persist for years, interrupted by periods of exception and heavy precipitation. For this reason, the Colorado River should be considered a potentially unreliable water source moving into the future.

Thusly, if the Salton Sea is to remain, and to remain in an environmentally positive and viable state, alternative sources of water will be needed. Ultimately, the factors described above will begin to affect the overall Salton Trough – and that planning should look to the Gulf of California for the answer.

Environmental Considerations

The Salton Sea also includes aspects of environmental quality and control that are not necessarily intuitive or obvious. These include:

- Climate Moderation – the Sea acts as a large heat and humidity sink and regulator that greatly improves agricultural utilization;
- Agricultural Sump – the Sea is the "bottom" of the Salton Trough, drainage in the Coachella and Imperial Valleys collects in this sump;
- Fugitive Dust Control – the sediments of the sump area now covered by the Sea are generally fine grained, dusty, and enriched in a variety of health-hazardous chemicals and salts that would be wafted through the valley and destroy air quality;
- Environmental Habitat – the Sea is home to more than 400 resident and migratory bird species, including several endangered ones. The sea is a critical pit stop for migratory birds flying south along the Pacific Flyway, and it is one of the most heavily used bird habitats in the country.

These factors must be accounted for – the "environmental quality" equilibrium of the Salton Trough is in many ways tied to the Salton Sea. The Salton Sea is a central sump of a larger trough system. It was healthy and self-maintaining when it had its interconnections with the Ocean and the Colorado River. Everything from the US Border to the upper Coachella Valley ultimately drains into the Salton Sea. Since the Sea is interconnected by both climate and drainage to the surrounding land – remediation must focus on the overall setting contributing to its disposition, as well as restore its natural interconnection with the Ocean.

Current Key Water Resource Issues – The Need for an Integrated Reclamation Approach and Plan:

The combination of climate change and its impacts on natural water supplies; the influence of current practices, management, and infrastructure problems; and the expansion / growth plans of the Trough demand a major assessment and evaluation that will ultimately lead to a pathway for the formulation and implementation of a General Plan that emphasizes appropriate elements of Resource and Environmental Management, and a Water Specific Resources Management. Without such planning and implementation, the Salton Trough will lack adequate and sustainable environmental quality and resources (namely water related) to achieve the objectives for the economic growth of the Salton Trough region.

This will not be an easy task, as there are many elements to consider, including:

- Limited Water Resources;
- Increasingly Impaired Water Sources;
- Limited and Impaired Infrastructure;
- Sewerage and Solid Waste Management Issues;
- Cultural / Political Considerations;
- International Considerations relative to water rights and the Imperial / Mexicali watershed;
- Economics and Funding;
- Quality Control in Implementation;
- Re-designation of land areas, and land uses;
- Energy;
- Education;
- Long Term Effective Monitoring, Management, and Mitigation;

Simply put – to address the Salton Sea and the overshadowing issues of the Salton Trough such that the incredible potential of the area can be reliably realized into the future for both the US and Mexico – there needs to be a means of bringing in significant amounts of water, putting that water to the best uses, including direct use in the reclamation of the Salton Sea and for the use in geothermally driven desalination to produce high quality fresh water; and being able to responsibly dispose of the resulting brine and water treatment residuals. That is the backbone of the BWG plan.

The introduction of appropriately large new sources of water, and the means to dispose of large volumes of salt is THE means to start taking the pressure off the Colorado River, address the Salton Sea, and begin the hydrologic and environmental reclamation of the overall Trough.

The overall conceptual BWG Salton Trough Assessment and Action Program (STAAP) integrates the entire Salton Trough as a single overall basin. The subcomponents of that overall basin include the Coachella Valley Segment, the Salton Sea Segment, and the Mexicali Valley and Colorado River Delta Segments. Only the Salton Sea Segment (SSS) is focused on here. The backbone of the STAAP and the resulting Reclamation Plan is the interconnection element that reunites the Salton Trough with the Gulf of California – the Salton Trough Interconnection (ST-Interconnection or "STIP").

PROJECT CONCEPT

The ST-Interconnection – The Reclamation Backbone

The proposed project is a portion of a larger overall conceptual approach to a Reclamation Program that the Bi-National Water Group (BWG) has formulated to address the overall Salton Trough. The project concept as it applies to the Salton Sea is also the backbone of the overall BWG Reclamation Plan – the Salton Trough Interconnection (ST-Interconnection). The ST-Interconnection is a state-of-the-art pipeline system that allows for transfer of substantial volumes of water in and out of the overall Trough. The ST-Interconnection brings in filtered, clean sea-groundwater obtained in coastal and near-shore wellfields along the eastern coast of the Northern Gulf of California in Mexicali, Baja Mexico and conveys it to the southern limits of the Salton Sea ("the Sea") in Imperial, California. The ST-Interconnection more importantly also includes a brine / water treatment disposal line that carries brine and water treatment waste residuals from along the length of the interconnection and disposes of it in an environmentally responsible manner into the deep water of the Wagner Basin offshore of San Felipe. The ST-Interconnection is currently rated at being capable of moving up to 1,000,000 acre feet per year of filtered sea-groundwater to the Salton Sea, and being capable of disposing of up to 350,000 acre feet per year of heavy brine / water treatment residuals – and will also serve as a major backbone component of future Salton-Trough wide Reclamation efforts – for both Mexico and the US.

The pipeline has been conceptually designed with two key notions in mind:

- Environmental Sensitivity;
- Engineering Considerations to Minimize Energy Use and Allow for Future Expansion.

A common problem in pipeline conveyance systems is under sizing the pipes for sake of economy – only to pay the price with interest in the long run when energy demands take effect, and there is no room for additional capacity without adding more pipe and/or significantly more pumping power. The pipeline is purposely oversized to reduce the friction losses through the system and sharply limit energy uses. The wellfields have significant redundancy to both help

assure long term performance and reliability, and also to allow for extra added capacity if needed in the future, just by switching on more pumps.

A summary of the ST-Interconnection key benefits are described below:

- Provide, upon construction, a means of moving up to 1,000,000 acre feet of water to the Salton Sea to allow for it to be refilled to its historic normal pool elevation of approximately -227-ft.
- By backfilling with water at rates of this order of magnitude, the Sea can be backfilled in a period as short as 3 to 5 years, including a "ramp-down" of progressively lower flows.
- This rapid backfilling will immediately begin to re-submerge the toxic playas, and begin to reduce the associated health threats.
- The water used – filtered sea-groundwater obtained from aquifer materials adjacent and connected to and/or underlying the ocean in the Gulf – will be clear and essentially free of any wastes, excess nutrients, or pollutants associated with waters currently entering the Sea for recharge. Although the water is seawater based, it is only about half the current salinity of the Sea, and would also have an immediate positive effect on water quality and offer some dilution – both mitigating considerations to offset the issue of salt loading.
- The ST-Interconnection allows for long-term maintenance inflows to make up for influx waters diverted or lost by the implementation of the QSA, changes in irrigation practice, and other factors, and can readily provide 350,000 acre feet or more per year without limit.
- The remaining capacity of the ST-Interconnection would be put to use in the production of new high-quality drinking/potable water supplies – under the BWG's Reclamation Plan, these waters would be developed using desalination techniques that focus primarily on the utilization of the abundant geothermal reserves and energy. This water would go to drought relief and to take the load off the expectation demands of the Colorado River.
- Salt Management – both at the Salton Sea, and Salton Trough-wide – would now be available on a large scale to facilitate mitigation of existing salt damage, disposal of brine and water treatment wastes, desalination efforts, Salton Sea specific salinity management, and related efforts both in the US and Mexico – and would be a major first step in meaningful salt management within the Trough.

The ST-interconnection includes:

- Intake wellfields for production of filtered "sea-groundwater," strategically located along the easterly coast of the Northern Gulf of California (NGC) – these wellfields will be split into two principal subareas – a northerly primary group in the vicinity of Salinas de Ometepec; and a southerly secondary group southerly of San Felipe. These facilities will collect seawater via low-disturbance-footprint well groups / well arrays that extend into appropriate sediments that are connected to and/or underlay the ocean. The wells, including slant / HDD, vertical, and Ranney type wells will withdraw sea-groundwater from aquiferious materials that are recharged by ocean water. This will both protect marine life and provide clean low-scale / fouling water for production use.
- Supplemental sources of water, per the BWG's Reclamation Plan, may also become available for use in the Salton Sea and other habitat objectives. These sources of water are primarily related to the BWG's future reclamation objectives throughout the Salton Trough. Namely, these waters are associated with efforts to reclaim impaired groundwater for beneficial use in course of preparation of areas to be used for water banking and drought relief storage (ie. high quality reclaimed waters).
- Dedicated high-capacity brine disposal outfall for salt-brine and water treatment residuals developed in the reclamation programs. The outfall will carry the outflow approximately 20-25 miles offshore to outlet in about 300-ft of water of the Wagner Basin. The outfall will utilize state-of-the-art tuned venturi eductor systems and micro-bubbler technology to dilute, blend and disperse the discharge in an environmentally friendly and responsible manner where it will avoid both the bottom and surface portions of the water column and be picked up by the prevailing current system of the gulf and ultimately carried out to the Pacific.
- A conveyance pipeline system that follows primarily along existing Mexico Highway 5, extending to a primary hub system at Cerro Prieto, and from there extending northerly – northwesterly along existing agricultural roads and canal right-of-ways along the westerly edge of Mexicali Valley to the US Border crossing at El Centinela. Ultimately the alignment heads to the southwestern edge of the Salton Sea near Westmorland. The main pipeline alignment follows along principally BLM land of the Imperial West Mesa.
- The pipeline mainline of the ST-Interconnection includes several Control Stations. The stations include both Control Stations and Connector Stations. There are currently 11 proposed facilities strategically located along the route. Control stations are facilities that handle the treatment, blending, valving / flow regulation, backflow prevention, and booster pumping functions of the pipeline. Control Stations also are locations where waters may be diverted off the main pipeline for various uses, and to receive intake waters and brine.
- Major / Main Control Stations will be located along the line at San Felipe, Ometepec, the northerly base of the hills north of La Ventana / southerly of Coyote (junction of Mexicali Valley and Laguna Salada), Cerro Prieto, El Centinela (US Border), Dixieland, and Westmorland. The Cerro Prieto Control Station, although not described in the RFI

Response, will optionally include a take-off lateral to serve salt/brine disposal for Morelos Dam and the Yuma Desalter facility.

- To control flow and reclaim some energy, the Westmorland Control Station will include a turbine system. This station will also serve as the northerly terminus of the Brineline.
- The water is conceptually to be discharged into the Salton Sea off the terminus of Poe Road off the Highway 86/78. From there, it will flow approximately 2/3-mile through a rock lined channel into the Salton Sea. The rocks in the channel will serve to aerate and brake the water prior to its entrance into the Sea.
- The pipeline mainline system will consist over much of the overall run from the Main Control Station near Ometepec, Mexico to the Salton Sea of a double barrel 12-ft diameter sea-groundwater intake line and a single barrel 12-ft diameter brine disposal line ("Brineline").
- The pipeline mainline running south of the Control Station at Ometepec to the Shorefall Connector Hub and Control Station just southerly of San Felipe will consist of a single 12-ft dimeter sea-groundwater line and a single barrel continuance of the Brineline.
- The intake is conceptually conservatively estimated to flow 1-million acre-feet / year sea-groundwater. The Brineline is conceptually conservatively estimated to flow 220,000 to 350,000 acre-feet / year heavy brine / water treatment residuals.

There are many elements to the overall BWG's Salton Trough Hydrologic Reclamation Plan. Only the mainline components of the ST-Interconnection that are directly germane to the control of the Salton Sea issues are included in this Response to the CNRA RFI.

Environmental Impact

Key environmental impact issues of the alignment and its components include the overland portion of the alignment mainline, the influence of the various control stations and their operations, the influence of the wellfields and shorefall stations, and the marine components of the outfall assembly, and the discharge plumes of the Brineline discharge into the Gulf and sea-groundwater into the Salton Sea. This discussion focuses only on the ST-Interconnection assembly.

The environmental impact preliminary assessment described herein is to date based on the research performed by the BWG team – including field observations, direct experience, desktop review of available publications, and consideration of a variety of information and data from our meetings with various concerned entities. We have supplemented our research in Mexico with detailed discussions with Mexican officials, the scientific teams at CICESE, and officials of the International Border Commission. In the US, we have supplemented our research with detailed discussions and meetings with local experts, geothermal operations representatives, land owner groups, Bureau of Reclamation representatives, State officials, and State and Federal Congressmen.

Even without the other aspects of the conceptual BWG Reclamation Plan, the overall positive environmental impacts of the ST-Interconnection cannot be overstressed and must be held

firmly in mind when contexting the various environmental impact considerations of the various components. No other system is on the table that has the united support of both Mexico and the US, and has the capacity to actually perform as intended – to serve as the backbone for reclamation and recovery of a high level of environmental quality for the overall Trough. These capacities include:

- Adequate volume through Environmentally sensible and sensitive means – sustainable on level of hundreds of thousands to 1-million acre feet per year;
- Environmentally responsible means of dispersing hundreds of thousands of acre feet of salt brine and water treatment residuals;
- Putting clean energy to work that has been largely underutilized to date;
- Providing a means of implementing meaningful waste water treatment in the New River basin – a primary source of pollutants to the Sea; and, the
- Cooperation of Mexico.

Salton Sea Salinity

As described elsewhere herein, it is recognized that salinity increases to the Salton Sea are inevitable – regardless of whether the influx water is sourced from the Colorado River or the Ocean. The Salton Sea, as already described herein, is a sump that when stabilized, lays at a surface elevation of 227 feet below sea level. It receives dissolved and suspended loading measured in millions of tons per year. Currently, the Sea is entering into a runaway condition of decline there the Sea shrinks away, exposes more and more toxic playa, and sharply increasing salinity. With that said, it must be recognized that that the following issues must be recognized in approaching a restoration plan for the Sea:

- Available water supplies;
- Elevation control;
- Salinity / TDS loading – hand in hand with
- Thermodynamics of precipitated materials on the playas and bottom of the Sea.

The functions of Salinity / TDS loading and equilibrium thermodynamics controlling the precipitation and dissolution of the salts deposited on the sea floor / playas are in a sensitive balance. As salinity of the waters in the Salton Sea decrease, the precipitated salts would tend to go back into solution, raising the salinity. As salinity increases, equilibrium is driven to favor precipitation of the salts from the water onto the bottom as a solid. Therefore, even if by magic the Sea could be drained and refilled with fresh water, it would soon begin to become salty again – and this was what is understood to have happened in its initial filling and early life of the first half of the 1900's.

Fresh water is simply not available at this stage of the program to send to the Salton Sea in sufficient quantities to be meaningful. It is also a portion of the Reclamation Plan that as the area is developed following the initial phases of the Plan and stabilization of the Sea and the population increases, water reclamation and wastewater recovery will begin to generate more and more water that may be put to beneficial use in habitat for tributaries to the Sea ultimately

serving in the maintenance flows to the Sea itself. As that occurs, the seawater influx flows will decline proportionately – and be put to other beneficial uses – namely geothermal desalination. The BWG Reclamation Plan also includes implementation of bioswale and vegetative restoration of the Sea's tributaries to reduce pollutant and nutrient loadings.

Therefore, in the near future that we are namely concerned with here, it is not considered feasible to control all of the above bulleted issues. The issues of salinity / TDS loading and precipitate equilibrium may be combined. This results in three principal factors of the equation to solve the Salton Sea issue of stabilization. We can feasibly only control 2 of the three – possibly mitigating the third through reclamation. BWG's approach is to solve the dilemma by solving for water supply and elevation – since that will allow for the playas to be re-submerged, and provide an ongoing means to stabilize the surface elevation. This approach addresses two of the most profound issues facing the Salton Trough – Environmental Quality, by elimination of toxic fugitive dusts from the playas, and improving water quality of the Sea; and by providing a stabilized elevation / shoreline to the Sea. These factors, particularly in combination, also provide opportunity to attract economic interests to drive redevelopment of the areas around the Sea.

Incidentally, although it is recognized that the use of seawater will increase salt loading to overall Sea system, considering the high influx volumes and rates involved, it is our position that the Sea will experience a preliminary dilution effect that will decrease over the first several years and then increase in the years following – however, by that time, the seawater influx will also be decreased markedly, and be replaced by fresher waters developed in the course of the Reclamation Plan.

ATTACHMENT B (Confidential)

Layout of the Salton Trough Interconnection Project (STIP)

Index of Figures

Figure A — U.S. Portion of STIP (redacted)

Figure A has been redacted due to confidential and proprietary nature of the material.

Figure B — Mexico Portion of STIP (redacted)

Figure B has been redacted due to confidential and proprietary nature of the material.

Figure C — Salton Outfall of STIP (redacted)

Figure C has been redacted due to confidential and proprietary nature of the material.

ATTACHMENT C

Letter of Introduction to

The U.S. Secretary of the Interior

Letters

- Joint Letter of Introduction from Representative Juan Vargas and Representative Raul Ruiz to Secretary of the Interior Ryan Zinke

Congress of the United States
Washington, DC 20515

June 12, 2017

The Honorable Ryan Zinke
Secretary
U.S. Department of the Interior
1849 C Street NW
Washington DC, 20240

Dear Secretary Zinke:

We are writing to you with regard to the Binational Water Group and their Plan for Drought Relief and Ecosystem Restoration in the Salton Trough. We are pleased to submit a description of their project in the Lower Colorado Basin, including the Salton Sea and the Mexican Delta.

The Binational Water Group is a consortium of water professionals interested in improving long-term water resource management and undertaking related infrastructure investments in the Salton Trough. Groups such as this, with broad expertise, can have the skills necessary to develop and implement a cost-effective series of public-private partnerships in Mexico and the United States.

The Binational Water Group's proposal consists of a comprehensive water resource management and infrastructure plan with numerous components for public-private partnerships, including a seawater pipeline from the Sea of Cortez to delivery points in the Mexicali Valley and the United States. The plan also proposes the creation of ten to twenty distillation desalination plants, serving both American and Mexican communities around the Salton Trough. The plan could also contribute to drought relief, enabling current and future water demands in the Salton Trough to be supplied by newly desalinated water. In an effort to restore ecosystems, new water would be made available for environmental and conservation purposes. Finally, the plan would permit more efficient wastewater treatment and recycling to improve water quality in the region, addressing the long-lasting sewage problems in the Mexicali Valley. A preliminary analysis concludes that full implementation of this plan would generate more than 1.2 million acre feet per year of new water for the Salton Trough.

Thank you for the opportunity to bring to your attention the Binational Water Group and their Plan for Drought Relief and Ecosystem Restauration in the Salton Trough. We appreciate your service and hope that you will give this proposal full and fair consideration on the merits in compliance with all applicable laws and regulations.

Sincerely,

JUAN VARGAS
Member of Congress

RAUL RUIZ
Member of Congress

ATTACHMENT D

Letters of Introduction, Consideration and Support to

California Natural Resources Agency

Letters

- City of Calexico, California
- California State Pipe Trades Council
- City of Calipatria, California
- City of El Centro, California
- City of Holtville, California
- City of San Diego, California
- Southern California Pipe Trades, District Council No. 16
- United Association of Plumbers & Steamfitters Local Union #230
- U.S. Representative Juan Vargas
- City of Westmorland, California

CITY OF CALEXICO

608 Heber Ave.
Calexico, CA 92231-2840
Tel: 760.768.2160
Fax: 760.768.0992
www.calexico.ca.gov

Office of the City Manager

March 2, 2018

Mr. John Laird
Secretary for Natural Resources
California Natural Resource Agency
1416 Ninth Street, Suite 1311
Sacramento, California 95814

Re: Request for Information (RFI) for Salton Sea Water Importation Projects

Dear Secretary Laird,

Please accept this letter regarding the Binational Water Group (BWG) and Stantec's proposal in response to the California Natural Resources Agency's RFI for Salton Sea Water Importation Projects. BWD and Stantec believe that their proposal addresses several issues such as:

1. The stabilization of the Salton Sea, in terms of receding shoreline and salt overload;
2. Providing new reliable water supplies to a desert region that is and has been experiencing a continued and prolonged drought;
3. Extensive salt management of the Salton Trough and Brine disposal;
4. Reclamation of the degraded farmland in the Mexicali Valley.

The proposed public-private project could have a positive impact to the local economy and quality of life on both sides of the border. Please give the BWD/Stantec proposal full and fair consideration on its merits and in compliance with all applicable rules and regulations. If you have any questions, please do not hesitate to contact our office at 760/768-2110.

Sincerely,

CITY OF CALEXICO

David Dale
City Manager

CALIFORNIA STATE
PIPE TRADES COUNCIL
PUBLIC, LABOR AND GOVERNMENTAL RELATIONS

1121 L Street, Suite 207
Sacramento, CA 95814
T: 916.446.7311 F: 916.446.3520
www.calpipes.org

March 8, 2018

The Honorable Jerry Brown
Governor of California
State Capitol Building, Room 1173
Sacramento, California 95814

Re: Request for Information (RFI) for Salton Sea importation Projects

Dear Governor Brown,

The California State Pipe Trades Council commends Governor Jerry Brown and Secretary John Laird, Natural Resources Agency on their decision to issue a Request for Ideas, regarding the problems related to the Salton Sea. With over 1,800 members in San Diego and Imperial Counties, the Council has taken a vested interest in addressing the environmental and economic impact of a comprehensive Salton Sea restoration. Due to the impact on our members' well-being with severe air pollution, increase in toxic dust, and high Asthma rates for our members children; we would like to see a comprehensive restoration. We believe the Binational Water Groups (BWG) and STANTEC have developed the prerequisite components in their proposal to "meet the public and ecological health issues at the Salton Sea, while securing Colorado River water supplies for the state." This reclamation program addresses environmental and water supplies issues confronting the Colorado River Region:

- Stabilization of the Salton Sea
- Desalination program generating new reliable water supplies
- Extensive Salt Management of the Salton Trough and Brine disposal
- Reclamation of degraded farmlands in the Mexicali Valley
- Surface water quality improvements

It will make 1,200,000 Acre Feet per year of ground water extracted from a network of well fields in the Mexicali Valley to the United States for direct delivery to the Salton Sea and feedstock for desalination in the United States. A brine disposal pipeline for waste streams and accumulated salts. Waste water treatment plants to address water quality in the New and Alamo Rivers. Reclamation of impaired ground water and ground water storage and banking projects for Drought Relief. According, to Binational Water Group/ Stantec estimates these multifaceted Infrastructure projects will create over 5,000 jobs and provide a tremendous boost to the economy of Imperial County.

We appreciate your consideration of Binational Water group and STANTEC's proposal based on its merit and compliance with all applicable laws and regulations. If you have any questions, please feel free to contact my office at (916) 446-7311.

Sincerely,

Gregory A. Partch
Executive Director
California State Pipe Trades Council

cc: Mike Hartley

City of Calipatria

125 North Park Avenue
Calipatria, California 92233
Telephone: (760) 348-4141
Fax: (760) 348-7035

March 7, 2018

Mr. John Laird
Secretary for Natural Resources
California Natural Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, California 95814

RE: Request for Information (RFI) for the Salton Sea Water Importation Projects
Dear Secretary Laird,

I am writing to you to consider in relation to the Binational Water Group (BWG) and STANTEC'S proposal in response to the Californian Natural Resource Agency's RFI for Salton Sea Water Importation Projects.

Reclamation of the Salton Sea is essential to sustain ecological health issues of the region, and protect Colorado River supplies for the state BWG and STANTEC state that their proposal addresses all the environmental and water supply issues confronting the Salton Trough, Colorado River region. The group's long-term reclamation program addresses the following issues:

1) Stabilization of the Salto Sea.
2) A desalination program that creates new reliable water supplies.
3) Extensive Salt Management of the Salton Trough and Brine disposal.
4) Reclamation of the degraded farmlands in the Mexicalli Valley.

I've been told that the program is based on multifaceted infrastructure projects that will produce over 5,000 jobs and provide an economic boost to the Imperial County. The program will be carried out through public-private partnership with the States of Baja and California and the Federal government.

I appreciate your consideration to give the Binational Water Group and STANTEC's proposal full and fair consideration on its worthiness and in consent to all applicable rules and regulations. If you have any questions, please feel free to contact my office at (760)348-4141.

Sincerely,

City Manager

March 2, 2018

Mr. John Laird
Secretary for Natural Resources
California Natural Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, California 95814

RE: Request for Information (RFI) for Salton Sea Water Importation Projects

Dear Secretary Laird,

I am providing this letter in relation to the Binational Water Group (BWG) and STANTEC's proposal in response to the California Natural Resources Agency's RFI for Salton Sea Water Importation Projects. BWG and STANTEC believe they have developed the prerequisite components in their proposal to "meet the public and ecological health issues at the Salton Sea, while securing Colorado River water supplies for the state."

BWG and STANTEC state that their proposal addresses all the environmental and water supply issues confronting the Salton Trough, Colorado River region. The groups believe that their proposal addresses the following issues:

1) The stabilization of the Salton Sea.
2) A desalination program that generates new reliable water supplies.
3) Extensive Salt Management of the Salton Trough and Brine disposal.
4) Reclamation of the degraded farmlands in the Mexicali Valley.

I have been told that the program is based on multifaceted infrastructure projects that will create over 5,000 jobs; therefore, contributing to the economy of Imperial County. The program will be implemented through public-private partnerships with the States of Baja and California and the Federal government.

I respectfully ask you to give the Binational Water Group and STANTEC's proposal full and fair consideration on its merits and in compliance with all applicable rules and regulations. If you have any questions, please feel free to contact my office at (760) 337-4540.

Respectfully,

Cheryl Viegas-Walker
Mayor

El Centro City Hall
1275 Main Street, El Centro, CA 92243 (760) 337-4540 Fax (760) 352-6177

CITY OF HOLTVILLE

121 West Fifth Street
Civic Center · Holtville, California 92250 · (760) 356-2912
"The Carrot Capitol of the World"

March 6, 2018

Mr. John Laird
Secretary for Natural Resources
California Natural Resource Agency
1416 Ninth Street, Suite 1311
Sacramento, California 95814

RE: ***Request for Information (RFI) for Salton Sea Water Importation Projects***

Dear Secretary Laird:

Please accept this letter regarding the proposal submitted by the Binational Water Group (BWG) and STANTEC in response to the California Natural Resources Agency's RFI for Salton Sea Water Importation Projects. BWD and STANTEC believe that their proposal addresses several issues such as:

1. The stabilization of the Salton Sea, in terms of receding shoreline and salt overload;
2. Providing new reliable water supplies to a desert region that is and has been experiencing a continued and prolonged drought;
3. Extensive salt management of the Salton Trough and brine disposal;
4. Reclamation of degraded farmland in the Mexicali Valley.

The proposed public-private project could have a positive impact on the local economy and quality of life on both sides of the border. Please give the BWD/STANTEC proposal full and fair consideration on its merits, in compliance with all applicable rules and regulations.

Sincerely,

Nicholas D. Wells, City Manager
(760) 356-4574 Direct
NWells@Holtville.ca.gov

cc: Jim Bates

Office of Council President Pro Tem Barbara Bry
City of San Diego
District 1

March 6, 2018

Mr. John Laird
Secretary for Natural Resources
California Natural Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, California 95814

RE: Request for Information (RFI) for Salton Sea Water Importation Projects

Dear Secretary Laird,

I am writing to urge you to consider the Binational Water Group (BWG) and STANTEC's proposal in response to the California Natural Resource Agency's Request for Information, regarding the Salton Sea Water Importation Projects.

Restoration of the Salton Sea is imperative to preserve the ecological health of the region, and secure Colorado River water supplies for the state. BWG and STANTEC state their proposal sufficiently addresses all environmental, and water supplies issues confronting the Colorado River region. The group's long-term reclamation program addresses the following issues:

1) Stabilization of the Salton Sea,
2) A desalination program generating new reliable water supplies,
3) Extensive salt management of the Salton Trough and brine disposal, and
4) Reclamation of the degraded farmland in the Mexicali Valley.

BWG and STANTEC told me the program addresses the challenges of salt accumulation and over-reliance on the Colorado River. The groups also represented the program is based on a multi-faceted infrastructure program, which will create 5,000 jobs and provide an economic boost to Imperial County. Additionally, the program will be implemented through public-private partnerships with the State of Baja and the State of California.

I appreciate your consideration of BWG and STANTEC's proposal based on its merit and compliance with all applicable laws and regulations.

Sincerely,

Barbara Bry

Council President Pro Tem Barbara Bry

Southern California Pipe Trades
District Council 16

MIKE LAYTON
Business Manager
Financial Secretary/Treasurer

March 9, 2018

Mr. John Laird
Secretary for Natural Resources
California Natural Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, California 95814

Re: Request for Information (RPI) for Salton Sea importation Projects

Dear Secretary Laird,

The Southern California Pipe Trades, District Council No.16, and its affiliated Local Unions which includes the United Association of Plumbers, Steamfitters, and HVACR Service Techs Local Union #230 of San Diego and Imperial Counties, commend you, Governor Jerry Brown, and the Natural Resources Agency on their decision to issue a Request for Ideas, regarding the problems related to the Salton Sea.

With over 7,500 members covering 12 counties, the Southern California Pipe Trades has taken a vested interest in addressing the environmental and economic impact of a comprehensive Salton Sea restoration. The impact on our members well-being with severe air pollution, increase in toxic dust, and high Asthma rates for our members children; we would like to see a comprehensive restoration. We believe the Binational Water Groups (BWG) and STANTEC have developed the prerequisite components in their proposal to "meet the public and ecological health issues at the Salton Sea, while securing Colorado River water supplies for the state." This reclamation program addresses environmental and water supplies issues confronting the Colorado River Region:

- Stabilization of the Salton Sea
- Desalination program generating new reliable water supplies
- Extensive Salt Management of the Salton Trough and Brine disposal
- Reclamation of degraded farmlands in the Mexicali Valley
- Surface water quality improvements

It will produce 1,200,000 Acre Feet per year of ground water that is extracted from a network of well fields in the Mexicali Valley to the United States for direct delivery to the Salton Sea and feedstock for desalination in the United States. It will develop a brine disposal pipeline for waste

501 Shatto Place • Suite 400 • Los Angeles, CA 90020 • (213) 487-4262 • FAX (213) 384-5619

streams and accumulated salts and the Waste Water Treatment plants address the water quality issues in the New and Alamo Rivers. It also addresses the reclamation of impaired ground water and ground water storage and banking projects for Drought Relief. According to Binational Water Group/ Stantec estimates, these multifaceted Infrastructure projects will create over 5,000 jobs and provide a tremendous boost to the economy of Imperial County.

We appreciate your consideration of Binational Water Group and STANTEC's proposal based on its merit and compliance with all applicable laws and regulations.

If you have any questions, please feel free to contact my office at (213) 487-4262.

Sincerely,

Michael Layton
Business Manager
Financial Secretary/Treasurer
Southern California Pipe Trades
District Council No. 16

ML:ab
Opeiu#537/afl-cio

UNITED ASSOCIATION
of Journeymen and Apprentices of the
Plumbing and Pipe Fitting Industry of
the United States and Canada

Mark McManus
General President

Patrick H. Kellett
General Secretary-Treasurer

Michael A. Pleasant
Assistant General President

Founded 1889

Letters should be confined to one subject

UA Local Union:

Subject:

Plumbers & Steamfitters Local Union #230
6313 Nancy Ridge Dr., San Diego, California 92121
(858) 554-0586 fax (858) 554-0591
www.ualocal230.org
Serving San Diego for over 117 Years
1900 – 2018

March 6, 2018

Mr. John Laird
Secretary for Natural Resources
California Natural Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, California 95814

Re: Request for Information (RFI) for Salton Sea importation Projects

Dear Secretary Laird,

The United Association of Plumbers, Steamfitters, and HVACR Service Techs Local Union #230 of San Diego and Imperial Counties commend you, Governor Jerry Brown, and the Natural Resources Agency on their decision to issue a Request for Ideas, regarding the problems related to the Salton Sea.

With over 1,800 members in San Diego and Imperial Counties, Local Union #230 has taken a vested interest in addressing the environmental and economic impact of a comprehensive Salton Sea restoration. The impact on our members well-being with severe air pollution, increase in toxic dust, and high Asthma rates for our members children; we would like to see a comprehensive restoration. We believe the Binational Water Groups (BWG) and STANTEC have developed the prerequisite components in their proposal to "meet the public and ecological health issues at the Salton Sea, while securing Colorado River water supplies for the state." This reclamation program addresses environmental and water supplies issues confronting the Colorado River Region:

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Mr. John Laird
Secretary for Natural Resources
California Natural Resources Agency

Re: Request for Information (RFI) for Salton Sea importation Projects

issues in the New and Alamo Rivers. It also addresses the reclamation of impaired ground water and ground water storage and banking projects for Drought Relief. According to Binational Water Group/ Stantec estimates, these multifaceted Infrastructure projects will create over 5,000 jobs and provide a tremendous boost to the economy of Imperial County.

We appreciate your consideration of Binational Water Group and STANTEC's proposal based on its merit and compliance with all applicable laws and regulations.

If you have any questions, please feel free to contact my office at (858) 554-0586.

Sincerely yours,

Mike Hartley
Business Manager
Financial Secretary-Treasurer

MH/jlj
opeiu 537, afl-cio

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Congress of the United States
House of Representatives
Juan Vargas
51st District, California

COMMITTEE ON FINANCIAL SERVICES
CAPITAL MARKETS, SECURITIES, AND INVESTMENT
MONETARY POLICY AND TRADE
TERRORISM AND ILLICIT FINANCE

VARGAS.HOUSE.GOV
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@REPJUANVARGAS

February 22, 2018

Mr. John Laird
Secretary for Natural Resources
California Natural Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, California 95814

RE: Request for Information (RFI) for Salton Sea Water Importation Projects

Dear Secretary Laird,

I am writing to introduce you to the Binational Water Group (BWG) and STANTEC's proposal in response to the California Natural Resources Agency's RFI for Salton Sea Water Importation Projects. BWG and STANTEC believe they have developed the prerequisite components in their proposal to "meet the public and ecological health issues at the Salton Sea, while securing Colorado River water supplies for the state."

BWG and STANTEC state that their proposal addresses all the environmental and water supply issues confronting the Salton Trough, Colorado River region. The groups believe that their proposal addresses the following issues:

1) The stabilization of the Salton Sea.
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3) Extensive Salt Management of the Salton Trough and Brine disposal.
4) Reclamation of the degraded farm lands in the Mexicali Valley.

I have been told that the program is based on multifaceted infrastructure projects that will create over 5,000 jobs; therefore, contributing to the economy of Imperial County. The program will be implemented through public-private partnerships with the States of Baja and California and the Federal government.

I respectfully ask you to give the Binational Water Group and STANTEC's proposal full and fair consideration on its merits and in compliance with all applicable rules and regulations. If you have any questions, please feel free to contact my office at (619) 422-5963.

Juan Vargas

JUAN VARGAS
Member of Congress

CITY OF WESTMORLAND
355 South Center Street · Post Office Box 699
Westmorland, California 92281
Tel: (760) 344-3411 · Fax (760) 344-5307

March 7, 2018

Mr. John Laird
Secretary for Natural Resources
California Natural Resources Agency
1416 North Street, Suite 1311
Sacrament, California 95814

RE: Request for Information (RFI) for Salton Sea Water Importation Projects

Dear Secretary Laid,

City of Westmorland wishes to thank Governor Edmund G. Brown Jr. for taking a Leadership role in solving the problems of the Salton Sea. We would like to bring back the millions of visitors and revenue to this valley which we used to enjoy back in the 60's.when the sea was a vibrant place for people to vacation and do weekend visit.

I am providing this letter in relation to the Binational Water Group (BWG) and STANTEC"s proposal in response to the California Natural Resources Agency's RFI for Salton Sea Water Importation Projects. BWG and STANTEC believe they have developed the prerequisite components in their proposal to "meet the public and ecological health issues at the Salton Sea, while securing Colorado River water supplies for the state."

BWG and STANTEC state that their proposal addresses all the environmental and water supply issues confronting the Salton Trough, Colorado River region. The groups believe that their proposal addresses the following issues:

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4) Reclamation of the degraded farmlands in the Mexicali Valley.

I have been told that the program is based on multifaceted infrastructure projects that will create over 5,000 jobs; therefore, contributing to the economy of Imperial County.
The program will be implemented through public-private partnership with the States of Baja and California and the Federal government.

I respectfully ask you to give the Binational Water Group and STANTEC's proposal full and fair consideration on its merits and in compliance with all applicable rules and regulations. If you have any questions, please feel free to contact my office at (760) 344-3411.

Respectfully,

Lawrence Ritchie
Mayor

"Gateway City to Imperial Valley"