

Save the Coachella Valley Basin Project Proposal

in Response to the updated Request for Information: Salton Sea Water Importation Projects

Presented to the California Natural Resources Agency and the University of Santa Cruz



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Section 1: Project Team Members

Quantum Consultations is a consulting agency in the city of Desert Hot Springs, located in Riverside County and within the Coachella Valley Basin. Our interests include community and conservation projects, research and development, and action based problem solving. As such, our proposal is aligned with the goals of habitat and air quality improvement at the Salton Sea and follows the Salton Sea Management Proposal (SSMP) timelines. We envision additional team members to join in this cause as this proposal becomes public, and the Torres-Martinez Desert Band of Cahuilla Indians are invited to be a co-partner for this proposal especially.

This proposal is called "Save the Coachella Valley Basin" designed to situate the Salton Sea within the context of its environment and how it impacts the surrounding communities, which extends from Morongo Valley, Whitewater, and La Quinta, in Riverside County to Imperial County (Figure 1). Addressing the Salton Sea in relation to the Coachella Valley Basin gives necessary context on how to best implement mitigation efforts, especially when it involves habitat creation efforts (Figure 2). The "Save the Coachella Valley Basin" proposal complements the short term goals with long term solutions: which envisions better connecting the so called East Coachella Valley region with the West Coachella Valley region in a way that better serves the under-served East Coachella Valley. This initiative seeks to establish a permanent public grounds for a new center of influence of Coachella Valley for the community to gather, complete with an auditorium, attached to conservation grounds in connection with the shoreline.

The primary initiative within this proposal is called "Save the Salton Sea Clean Up Committee" and aims to enhance efforts toward a widespread collective effort to improve the conditions of the Salton Sea immediately, specifically through concentrated clean up, waste removal, and beautification efforts meeting, if not exceeding, the goals outlined in the SSMP by 2028. The strategies outlined within the "Save the Salton Sea Clean Up Committee" addresses the goals of habitat creation and dust suppression via removal of emissive playa expected to be completed in the fall/winter of 2026. The long-term project effectiveness will be managed by the "Save the Coachella Valley Basin" initiative and will in turn build the public grounds destined to become a modern center of influence, with a habitat restoration project completed by the "Save the Salton Sea Committee" as a central feature in order to monitor, research, and maintain the efforts made during the project initiatives at the academic and local cultural levels. As an additional strategy, the "Save the Salton Sea Committee" anticipates offering successful shoreline clean up strategies to stakeholders and landowners that may benefit from these activities toward the collective goals of mitigating the Salton Sea within the proposed timeframes.

As a socio-historical researcher, I have studied the Salton Sea and the ecological surroundings of the Salton Basin for about 7 years. From living in Coachella on the East side of the Coachella Valley and being drawn to the Cahuilla Fish Traps in Thermal and living nearby Toro Canyon and Torres-Martinez Band of Desert Cahuilla lands, to visiting the Salton Sea and exploring Salvation Mountain beyond Niland, this desert region has such a unique biodiversity that is best experienced living here. Presently living in Desert Hot Springs and learning about the West side of the Coachella Valley, as well as learning about the Indigenous tribes in this region such as the local Cabazon, Morongo, and Agua Caliente tribes, there is always so much more to learn and understand. Still, in this time, I have discovered key issues that have

contributed to environmental and economical impacts that can be improved upon. Identifying neglected gaps in research as well as being on the ground, studying the land, and experiencing its surroundings, has resulted in realizing that a dedicated clean up effort of the Salton Sea, particularly its shoreline is necessary for immediate mitigation of the increasing salinity levels within the sea, or lake, however you prefer.

Technically an echogenic lake, the Salton Sea itself is in part presently plagued by a 121 year history of recreational and economical waste that is hindering long term stability of the highly salinated water it holds. This means the Salton Sea has no natural output and is presently sustained by input of Whitewater Riverwater, the New River, as well as agricultural runoff. Until 2017, it was largely sustained by the Colorado River that it was initially created from in 1900 by Mr. George Chaffey on a homesteading permit on the bank of the Colorado River itself and a system of irrigation canals that infamously started this environmental disaster (Voyles, 2016, p. 222-223). In addition to implementing clean up strategies of toxin and waste removal for improving public health, these newly revitalized areas of exposed playa will be primed for habitat creation with the enhancing air quality and dust suppression already being effectively mitigated within this process. As the immediate activities of the "Save the Salton Sea Clean Up Committee are in progress and completed ideally by 2026, the longer term goals will then be addressed under the larger project to "Save the Coachella Valley Basin". This approach combines the labor intensive activities necessary for clean up involved, with long term strategies and goals in mind for community infrastructure and multi benefit uses of recreation areas that also enhance and sustain wildlife and the quality of life in general. In addition to this, it provides a variety of opportunities for wildlife conservancy organizations and academic research groups to study the impacts up close and on a continuous basis.

The long term project "Save the Coachella Valley Basin" is a community based operation that will hold meetings, engage in regular social media and in-person socials with virtual and language accessibility in a communications effort to ensure local competence of what is taking place with the Salton Sea. Ongoing communication and sociology informed research toward best practices will be useful so the local residents may be informed, involved, included, as well as maximizing the benefits from efforts taking place in the community. This initiative includes providing information in accessible ways, including language choice and medium, as well as involving the community's opinions and input on a consistent basis. Collaboration with the local tribes and community residents, state and federal government and all other stakeholders will be central to this project's success. Agencies such as the Bureau of Reclamation, the Bureau of Land Management, and the U.S. Fish and Wildlife Service will also be a necessary resource in the course of this operation. This project also includes an initiative to provide a consistent, ongoing service with the goal of cleaning up the entire shoreline of the Salton Sea within about 5 years time. This initiative is called "Save the Salton Sea Clean Up Committee" and will be able to assist in the goals of habitat creation and dust suppression at the Salton Sea by removing the emissive playa that lines the present shoreline. These areas may be replaced with natural hot springs pools where applicable, and otherwise provide inlet and outlet "fish resting areas" inspired by the regional "fish traps" for a potential "oxygen station" for fish of the Salton Sea to spawn, rest, and reprieve. All together, this proposal hopes to promote a thriving ecosystem in a sustainable way that brings prosperity and a future to the Salton Sea region.

Section 2. Narrative Description

Project Concept

The concept of the "Save the Salton Sea Clean Up Committee" initiative is to have a base of operations in the region that is committing specifically to cleaning up the shoreline of the Salton Sea, particularly the exposed playa that is possibly emissive, in a timeframe relative to the objectives of the Salton Sea Management Plan (SSMP). The "Save the Salton Sea Clean Up Committee" will organize site specific projects with relevant resources and agencies that are anticipated to be requested from the various stakeholders and entities involved in shoreline property. The goal is to clean up the entire shoreline and surrounding area in about 5 years time, by removing the emissive playa altogether. This time allows for work to be completed, with about 2 years to spare, as to allow for room for additional project sites that were not addressed prior to 2026. This initiative will improve the air quality and stabilize and improve habitat conditions that may constitute habitat creation and a continuing dust suppression effect that are central to the goals in these projects at the Salton Sea, by virtue of removing inhabitable qualities in the area such as toxic waste will allow nature to thrive. Each project site will be cleared of the playa and carefully convened into a habitable aquatic ecosystem, through construction of a combination of mudflat regions, as well as inlet and outlet "fish rest stops" that are connected to the larger lake and automatically filtered for a cleaned up area for respite for fish and birds alike.

The purpose of the broader proposal to "Save the Coachella Valley Basin" is to connect the short term range actions of the "Save the Salton Sea Clean Up Committee" shoreline enhancements with the long term benefits in alignment for the most effective results. Therefore, in order to "Save the Coachella Valley Basin", a broader and more intimate understanding of the water resources in the region and how they correspond and interact with one another is crucial. As the shoreline is cleaned and cleared, it may reveal a prime location, elevation, region, stakeholder and project wise- to replace the built up playa with mudflat regions, and/or oasis of tree saplings, as well as "fish rest stops" built in a similar manner as the local "fish traps" in an effort to further understand the apparent connection between such formations in the region and the historical Lake Cahuilla.

I have recently learned more about the fish traps' function from a surveying group, that due to the enormity of the premodern Lake Cahuilla, it had a high and low tide, and so the fish traps were essentially rendered useless as the shoreline receded beyond them. The re-creation of fish traps as fish "rest stops" along the shoreline of the Salton Sea would not function in the same way, even if they were scaled down to match the size of the present lake, since wave action was a primary function for bringing the appropriate fish within them to spawn and be caught. In addition to this, I should clarify that the modern construction of fish rest stops would not be designed to harvest fish from the Salton Sea, but to "herd" or divert them into more easily adaptable aquatic habitats temporarily, with an outlet to swim back into the lake. These modern fish traps would serve as a "resting stop" for the fish as a cleaner oxygen supply could be better controlled and monitored in the water carried into these fish traps via filtration with various sized mesh screens, rocks, and silt. The purpose would be to extend the aquatic life, by providing alternative living space, even for parts of the relative lifespan. This would allow more room for

regular spawning seasons and larger populations of various species to occur more successfully. In a similar function of the original fish traps, these constructions connected with the lake allow for reducing salinity of the water in more easily controlled sizes for the fish to reproduce effectively. Smaller shallow outlets diverting from the inlet leading into the fish rest stop would allow for the natural collection of salts and emissive playa that is pushed up into the shore. Algae blooms would collect and be skimmed away along with other debris. The main idea surrounding the construction of miniature fish traps or otherwise resting stops with connecting inlet and outlet to the lake is to provide a place for the living organisms in the Salton Sea places along the shoreline to safely spawn, rest, and relax before going back into the main body of water. These fish resting stops will start tackling the issues of rising salinity levels of the lake by mitigating the negative impacts on the micro-level while the macro level of how to reduce salinity remains elusive. Depending on the final number of the fish rest stops constructed will determine how much it could impact the lake on a macro level, but the good news is that even if a small number of them are constructed, and we are aiming for 20-60, will help aquatic life thrive, at least in the immediate region they have been created in.

Further, appropriate areas for hot mineral springs to highlight independent water resources could enhance the wildlife and habitat the longer these types of oases are allowed to flourish and thrive. The goal within the "Save the Coachella Valley Basin" is to integrate the short-term goals of habitat creation and dust suppression with assurance that these projects maintain the intended purpose and continue to impact the lake and surrounding area with the long term goals of habitat and dust suppression maintenance. The labor-intensive activities of shoreline clean up treatment carried out by the "Save the Salton Sea Clean Up Committee" will be hallmarked with the capstone achievement that will help "Save the Coachella Valley Basin" by insisting the Salton Sea region is integrated into the wider Coachella Valley community as a central figure for generations to come. This would look like a multi-purpose and convenient public facility to continue to be able to gather for community meetings and functions, with the central theme celebrating the historical, modern, and future development of the Salton Sea region in environmentally conscious ways.

Together, the versatility of this proposal is designed to be a community-first project that ensures immediate treatment of the shoreline is thoroughly addressed and completed for highest chance of success in the long term. These efforts are aimed to complement the long term impacts of the region toward quality of life enhancements from air quality improvement, habitat biodiversity and sustainability with residential and communal spaces for celebrations and casual gathering, that will also be beneficial to researchers such as myself with an interest in the incredible diversity to be studied and explored in this beautiful region.

Business Plan

An ideal base of operations would be directly on the shoreline, in order to maximize the work and availability. An ideal location would be central to one of the communities of the Salton Sea, as to provide some necessary infrastructure to the area as a bonus use of the land. The plan would be to purchase a parcel of land to become a conservation based educational campus, that is shoreline accessible, for researchers as well as field trippers and day trippers alike. The shoreline would be an exemplary feature of before and after shoreline cleanup and the results and purpose of doing so. The habitat restoration projects would include a 20-60 fish

"rest areas", that would serve the dual purpose of exploring the connection between salinity levels of the water and the response of such in constructing the "fish traps" built by the Cahuilla in premodern times, as well as creating areas to be able to purposefully filter and clean as to enhance the quality of life of aquatic species. An inlet would be filtered in a series of mesh filters at various levels to catch debris as well as allowing fish to swim in. A fish trap made of natural locally resourced materials (such as rocks and sand) and modeled from the extent fish traps in the area will be connected to the inlet and further able to be carefully monitored and filtered. An outlet connecting back to the Salton Sea will allow the cleaner water and rested fish to flow back into the main body of water. This will act as a natural filtration system and improve the quality of wildlife in the area, and eventually improve the quality of the water, especially if it is successful, and scaled up in number and in various regions. The success of the "fish traps" project would be fish making use of them successfully, by living longer, spawning successfully, as well as measurable improvements in the larger body of the lake.

A parcel of 40 acres would be the ideal size and range for the "Save the Coachella Valley Basin" and its "Save the Salton Sea Clean Up Committee" collective project scopes to have a place to convene in the short term and to be developed into a long term sphere of influence in the community. Bringing together necessary infrastructure and a convenient community gathering venue with accommodations that connect people to nature and improve the health of the Salton Sea would be the overarching theme and goal of sustainable efforts made together. A building, preferably traditional adobe, that would serve as a meeting place during the cleanup of the shoreline would then be prepared to be constructed into a community meeting place complete with an auditorium and cafeteria would be ideal. This could enhance the exchanges and student experiences with guest speakers, cultural showcases, and school performances with fundraising opportunities to have a meal with the presentation. A parking lot would accommodate both travellers and locals and would connect with the trailhead to enjoy the habitat creations on the property. This would include the re-creation of functional fish traps, along with a chain of connecting ponds and mudflats to bring the maximum diversity and bio-enhancement possible. The educational dedication would look like an interactive exhibit of clarifying the modern purpose of the fish traps at the Salton Sea with the pre-modern purpose of the fish traps used at the ancient Lake Cahuilla shoreline. In addition to celebrating the agricultural industry, with features such as date palms, there would be native species and plants destined to thrive on site for aviary habitats as well as much needed shade. Picnicking areas would encourage people to pack a lunch and explore the educational aspects intended to be a part of the overall aesthetic and purpose of the public grounds.

Prior and in addition to establishing the educational center for public use, the "Save the Salton Sea Committee" may team up with local stakeholders and individual projects that would be in need of such services of consultations between entities at the organizational level, as well as waste removal and cleanup of the exposed playa in the area. Quantum Consultations would survey the project area and come up with a plan of action, and outline the goals in cooperation with the necessary entities. Collaborations with the Torres Martinez Band of Desert Cahuilla Indians would be crucial in this development. Even without the educational center in place, the "Save the Salton Sea Committee" plans on sharing the 5 year process and findings publicly in order for the public to gain additional interest in the region.

Implementation

Implementing these initiatives will be in accordance with grants and awards dedicated to these goals. Quantum Consultations would be responsible for any grants received from the state and federal levels and meeting the goals issued for them, specifically toward the efforts of habitat restoration suitable for fish and wildlife as the primary function; with additional benefits of dust suppression of the lakebed areas by completely removing them. The site to be used for long term public grounds will also be sponsored in part by or in total by grants and contracts with the appropriate agencies. This site will serve a multipurpose function that is accessible to the shoreline and it's improvements regarding the fish resting stops, that also serves the community in the space it holds by being open to the public.

Section 3: Planning and Design Process

Project Feasibility

The project includes the use of naturally and locally sourced materials in the construction of aquatic habitats such as rock and silt lined small ponds and inlets on the lakebed to improve the water quality with the use of screens of various sizes and purposes. This is extremely feasible because it does no harm to the lakebed, only improves upon it. It is a small scale project compared to the size of the lake, so it is easily controlled and doesn't add nor take from the actual water, only removes what does not belong, such as debris and potentially emissive playa. Naturally occurring substances such as salt and silt, may be removed in the course of keeping the habitats balanced. Also anticipated is a construction of an auditorium, meeting center, and public grounds on a formerly privately owned lot in the current market for sale, as a developmental space to access the lakebed and improve the conditions of the water on site, and eventually opening the completed grounds to the public. The grounds will have a multipurpose benefit of establishing a space to monitor the conditions of the lake, and having a pleasant area to meet, gather, and use as recreational space, in a low maintenance strategy once the area is cleared and designed for this purpose.

Water Source Identification

The primary water source is the lake itself, temporarily diverting small portions of the lake water to freshly cleared areas of lakebed in an inlet construction of a pond-like feature built up from locally sourced material on the shoreline. This allows for skimming and filtering the water manually and with natural fiber mesh in a way that welcomes the fish in as a rest stop with improved oxygen before returning to the sea along with the filtered lake water. As the Salton Sea is allowed to gently come into a gravitationally lowered canal about 1-2 feet wide, and 12-24 feet long (relative to the size of lakebed exposed), it will have small outlet canals designed to collect silt and salt, the bane of the Salton Sea's existence. This inlet canal will lead to a pond designed with rocks with local fish traps created by the Cahuilla tribe in premodern times, about 400 years ago in mind. Here, the fish will spawn and rest before swimming at will through a connecting outlet back to the Salton Sea. These can be constructed as the playa along the shoreline is removed.

Land Use

Acquisition of a lot for sale in the real estate market for the purpose of developing into a multi-beneficial habitat and air improvement and public recreation/educational gathering place would be ideal. The shoreline accessible to this gathering place will have the functioning fish resting stops in place, as well as space to celebrate the inspiration behind the fish resting stops, to offer an opportunity to learn about the fish traps and Ancient Lake Cahuilla and its people. Otherwise, landowners and stakeholders will be contracting with Quantum Consultations to make use of the clean up services and habitat restoration strategies local to their region of the Salton Sea shoreline.

Environmental Impact

The project is designed to prioritize the environment by removing the playa from the exposed lakebed which is eliminating dust particles and in its replacement and in ideal locations, habitat creation. Natural flooding for the creation of mudflats, and/or the immediate construction of a variety of fish "rest stops" for habitat creation and enhancement of the wildlife are options immediately after the emissive playa has been freshly removed off the premises. Pupfish, tilapia, and other species important to the food web may swim into these gently filtered ponds and will ideally be able to thrive better in the "fish rest stops" of better controlled aquatic habitats. The combination of trash and debris screens, with salt collection and removal from the waters would impact the environment on the micro level that needs attention in the present. The longer the fish resting stops are implemented the better towards long term and measurable improvements of salinity levels on the macro level of the sea itself. The more areas and opportunities wildlife has to thrive, the better, which may or may not be obvious. What is less obvious is that the more areas and opportunities the lake itself has to circulate, the better. This is why the fish rest stops are designed to be natural circulation points of the sea itself. Similar to a human body, lymph nodes within the blood circulation system allow for some filtration points so the blood can be at its healthiest. Like water in the environment, without any filtration and circulation occurring, it can be at its healthiest. The Salton Sea lies on top of water resources, but the lake itself has no natural outlets, thus is not being circulated, only added to and evaporating. Because of the arid region and being surrounded by mountains, many local rainstorms are prevented from moving over the Coachella Valley Basin and the Salton Sea. The "best water" then gets evaporated and none gets returned, reducing the quality of the seawater. Therefore, the most immediate solution involves enhancing the quality of the water in manageable ways rather than the whole lake at once.

Salton Sea Salinity

This project is designed with the pre-modern uses of the highly salinated waters in the region in mind. Historically the Salton sink was the site of salt mining works, first by local tribes and continued more labor intensively when the railroad came through it in the 1870s prior to it being filled with Colorado River water (Voyles, 2016, p. 221-22). The noted incarnations of the Ancient Lake Cahuilla have been measured and estimated to be about 6 fill ins, with the second to last premodern 1600 incarnation likely leaving the "bath tub" like rim on the surrounding

foothills of San Jacinto Mountain and the last 1700s fill in likely followed the subsequent fish trap construction and usage (Phukan et. al, 2019, p. 4 & 9). The Cahuilla tribes constructed many many fish traps of various but specific 'U' or 'J' like shapes in order to achieve the goals of likely catching a variety of fish (Phukan et. al, 2019, p. 9 & 10). It is also noted that the Ancient Lake Cahuilla may have been salty, and also may have evaporated in a way that created many smaller lakes and ponds across the Coachella Valley, which would have created oases, and important habitats and water resources (Voyles, 2016, p. 217-18). This part of the cycle would have also changed the salinity levels and would have varied in each pond-like to small lake feature. If the natural annual cycle for the Cahuilla included salt trades, this would have likely further changed salinity levels in the area, and possibly a reason for harvesting the salt in certain regions around the Salton sink prior to first contact. It is still not yet determined what the circular fish traps may have been used for, and these circular fish traps will be the design idea behind the present fish rest stops to be constructed at the modern Salton Sea shoreline. Thus, this project works toward managing the salinity levels of the Salton Sea regionally, at specific sites, and treats the lake water as salvageable rather than changeable in nature.

Instead of relying on water importation in the expectation of changing the entire salinity levels of the lake as a whole, this project is strategically aimed at how we can save, or more pointedly, salvage the Salton Sea in immediate ways that will improve the conditions of the aquatic life within the lake. Pond features that are connected with an inlet and outlet of naturally pressured and flowing water via gravity will allow for "aquatic rest stops" that act similar to rest stops alongside the highways. These ponds would gradually reduce salinity levels by design of depositing the salt and silt out of the water as well as debris, to be collected, which would allow the aquatic life to swim in for a reprieve from the larger body of the Salton Sea, coming and going on their own. While this largely manually monitored activity is small considering the enormity of the Salton Sea, it could have a great mitigation effect as potentially emissive playa is replaced with these healthy oxygen producing sea-side rest stops along the shoreline that connects back into the lake. Between having the fish die off without emergency-like shelters and having such alternatives in existence, this scenario may have more benefit for the environment than initially expected. These activities probably won't dramatically change the salinity levels of the Salton Sea, but what they will do is be a reliable habitat resource for the aquatic life in the Salton Sea. The health of the aquatic life and food web in the Salton Sea, even if it begins along the shoreline, will in turn improve the health of the birds who rely on the health of the fish and the water they consume as they use the area as a rest stop area in their own right.

Throughout the Salton Sea's 121 year history as an irrigation reservoir, the agricultural industry is what drives most of the decision making surrounding the Salton Sea region, with not much accomplished toward minimizing let alone mitigating these activities' negative impacts on the environment. The Salton Sea has also become a crucial stopping point for many avian species and such, need to be taken into consideration as what drives the activities of conservation and preservation in this region. This follows that the Salton Sea doesn't necessarily need to be a certain length or depth in order to be at its healthiest, but simply more in tune with its environment. It can still be a giant gnarly lake, and/or it could be many lakes and ponds serving the environmental needs as well. Better managing the agricultural runoff, geothermal mining and brining, and continued irrigational impacts independently rather than attempting to simply dump them into one body of understanding or in this case, water known as

the Salton Sea, is important to "Save the Coachella Valley Basin" in the environmental sense of habitat restoration.

Water Use

The idea is to improve the quality of the water already available and in use within the Salton Sea. Removing toxic playa build up will open up the opportunity to control the quality of the new shoreline being created, by constructing mudflats and ponds as a replacement for the newly cleared areas. Removing 5 feet deep and 5-10 acres wide of toxic playa at a time would improve the Salton Sea shoreline area by area in a way that would in turn, start to connect the Salton Sea back to a more naturally balanced and healthy environment, even if this activity is accomplished in one or two areas. Filtering the water going into the Salton Sea is a key feature of the water use: any water that floods in for the creation of mudflats, for example, would be carefully filtered and monitored to ensure that it's intended purpose for aquatic life, thrives. Playa cleared away would have a mild flooding effect that could be carefully diverted to fill the ponds that will also be consistently filtered and monitored as well as adjusted as needed so that it's intended purpose for aquatic life is achieved.

Governmental Coordination and Permitting

Necessary regional, county, state, tribal, and federal coordination and permitting are expected to ensure the project meets environmental protection standards. I also anticipate advisory meetings with the necessary agencies at the various levels so that all goals match, if not exceed the ideas outlined in the Salton Sea Authority Act of the Salton Sea Management Plan's 10 year plan and Long term Action Plan.

Project Development Schedule

Fiscal Year 2020-2021:

In the Spring and Summer, resources were dedicated to the "Save the Coachella Valley Basin" project and it's "Save the Salton Sea Clean Up Committee" initiative has been in Research and Development, organizing project scope, best practices and approaches as well as conducting benefit to risk analysis of engaging in a long term project at the Salton Sea. Researching the history of the Salton Sea region, it's development, as well as gaining an understanding of the infrastructure needs in light of the multiple power outages at Desert Shores and other locations at the Salton Sea this past year has revealed gaps and therefore potential solutions. Discussing this project with locals as well as exploring the Salton Sea shoreline this past summer and discussing the fish traps with Archaeologists surveying the Friends of the Mountain project site, has bolstered the decision to apply for the grants and funding necessary for the project.

Land acquisition along the shoreline of the Salton Sea is the next step to begin acquiring the necessary permitting to commence cleaning up of the shoreline in an environmentally conscious way. Once the shoreline has been cleaned, the water will be carefully brought into replacement mudflat regions and ponds with the inlet and outlet connection back to

the Sea. Breaking ground ideally this winter, completing the shoreline cleanup and replacement aquatic features within three months time.

Fiscal Year 2022-2023:

Spring of 2022 would be developing the ground for public access. In addition to monitoring the newly created habitats, filtering debris, removing salt, and ensuring aquatic life is making use of them, the connecting lot would ideally be developed into an educational center that could also be used as a community auditorium and meeting place. Organization of other shoreline cleanups would also be coordinated between the involved stakeholders at the project site. In this case, Quantum Consultations would be acting as a facilitator for such projects to maximize coordination efforts between projects aimed at habitat restoration at the Salton Sea.

Summer 2022 would be largely planned to record and monitor the conditions of the newly created aquatic habitats, any changes that occur and publishing the results. A careful examination of the impacts of the project during the hot summer months is crucial when algae blooms occur. Press releases, meetings, and public input would also steer the direction of the next season's projects.

Fall 2022 would ideally be putting the finishing touches on the construction portion of the public grounds, and ready for a grand opening that winter, which would include some press releases and a planning schedule for strategic activities that invite the public to come out and examine the grounds.

Winter 2022-2023 would be the local opening of the public park and recreation grounds, which would include adequate parking, shaded areas for picnicking, access to the restoration area, and a theme that connects the agricultural successes with the ways of life prior to the agricultural boom in the region.

Fiscal Year 2023-2024

Spring of 2023 would mark the time in which the public grounds are open, therefore will be needed to be operated and maintained. Focus on the success of the restoration will be combined with activities aimed to gather interest, tourists, and visitors to the site. In addition to inviting guest speakers, schools, and day trippers, the locals could also make use of the public grounds for local recreational spots to picnic, gather, play, and potentially provide resources otherwise not readily available in the area.

Summer of 2023 would mark the first annual investigation of the impacts of the aquatic restoration efforts at the project site. More press releases and findings will be written and published to keep the public informed and the goals on track. Focusing on indoor recreation, the public access building would ideally be an air conditioned resource for those needing to simply cool off in this desert region. Meetings with other stakeholders in the region to solicit my services where needed or wanted.

Fall of 2023 would mark getting back to work in cleaning up the shoreline at large as projects within the short term goals are expected to be lined up at this time as the shoreline is projected to increasingly change around this time if it is not managed and mitigated in time. Assisting federally protected lands and looking for contracts in this regard would be also investigated during this time or prior to this timeframe.

Winter of 2023-2024 would mark the time to measure how much of the lakebed is now exposed and/or restored. The goal ideally would be close to or over half of the collective project goal of 29,800 acres total of habitat restoration and dust suppression at lakebed areas, but is to be assessed at this time to measure how close or far the goal is to the deadline of 2028. Depending on the goals, the next year's directions would either focus on more shoreline clean up and habitat restoration project sites, granted the success of the initial site.

Fiscal Year 2024-2025

Spring of 2024 will be met with an anticipated full schedule of shoreline clean up projects lined up and executed under the direction of the "Salton Sea Clean Up Committee".

Summer 2024 will be met with a change in pace for a research period of assessment and measurement, meetings with local communities and stakeholders, addressing and guiding the next steps to take. Summers will generally be more research based and less labor intensive due to the heat in the region.

Fall and Winter 2024-2025 will resume an anticipated schedule of holiday themed events on the public grounds under the direction of "Save the Coachella Valley Basin". Meanwhile, shoreline clean up projects are expected to resume with the "Salton Sea Clean Up Committee".

Fiscal Year 2025-2026

Spring 2025 is marked to be the busiest year yet in regards to completing shoreline clean up projects. With the goal of wrapping up the "Salton Sea Clean Up Committee" activities in full within a year's time, the scheduling and meeting with remaining regions to be addressed will be pursued.

Summer 2025 will be another research based season for Quantum Consultations, as well as indoor meetings to be scheduled. Additional activities to be determined at a later date.

Fall and Winter 2025-2026 will resume community activities scheduled to be held at the public grounds. Also at this time, the "Salton Sea Clean Up Committee" intends to see the fruits of its labors and expects to take any last calls for services at this time.

Fiscal Year 2026-2027

Spring 2026 will be dedicated to celebrating what hopefully is an improvement of the Salton Sea, and the habitat in many areas is anticipated to be restored at this time. Spring time merriment will commence with activities planned on site of the public grounds.

Summer 2026 to be determined.

Fall and Winter 2026-2027: Traditionally successful and past popular community events are scheduled to take place during this time. In addition to the closing of the "Salton Sea Clean Up Committee", there will be an awards ceremony to the most successful habitat created and/or restored in the region, to recognize everyone's efforts toward this goal.

Fiscal Year 2027-2028

Spring of 2027 will mark a 2nd annual spring time tradition of events held for the community for celebratory gatherings and to ensure the public is aware of this facility for their use and any services and events coming up.

Summer of 2027: open ended; whatever work to be done will be addressed at this time.

Fall and Winter 2027-2028: In addition to planning holiday and other celebratory events to be held at the public grounds, this will mark the official ending of the "Salton Sea Clean Up Committee" activities. The public grounds that have been managed by the "Save the Coachella Valley Basin" initiative will also be completed at this time. Bids to release all responsibility of the public facility and grounds to the best qualified agency or entity will be looked into at this time, so that by 2028, all projects guided by this proposal will be completed by Quantum Consultations.

Fiscal Year 2028-2029:

Spring 2028 hallmarks a very important decision making period regarding the long term future and direction of the Salton Sea. Anticipating this proposal's success, Quantum Consultations will either continue in it's capacity, acting responsible for the public grounds under the "Save the Coachella Valley Basin" initiative, or at this time will donate the lands to the entity or agency that will continue to use it as it's intended purpose, completing the proposal's goals. Completion of grant obligations will be ensured at this time, measuring the initial goals, actual real progress, and matching impact of the collective goals that are to be achieved at this time.

Summer 2028 will likely be spent determining what kind of impact the 2021 goals of today have had at this time. Research reports, scholarly articles, and findings are to be written up at this time.

Fall and Winter of 2028-2029 is left open for room for anything pressing that wasn't accomplished in the prior seasons to be completed at this time, as well as a budget for operations for the public grounds for an additional season to ensure it remains open until turning it over to a more qualified entity for the long term management and responsibility.

Operation Schedule

The estimated amount of time necessary to raise the water levels at the lake to recover potentially emissive playa cannot be determined exactly because it is uncertain that this project will raise the water levels at the lake per se. This project's focus is on recovering potentially emissive playa by removing it from portions of the shoreline and replacing the playa with aquatic habitats that interconnect and interact with the Salton Sea. This will act as an immediate habitat creation and dust suppression activity with the potential to be multiplied to have more widespread effects, but does not guarantee a raise to water levels at the lake within the scope of this project. If anything, the change of shoreline features at the site are not predicted to impact the water levels significantly one way or another. Our focus is to include sustainable habitats given the condition of and reclaiming beneficial interaction with the Salton Sea and its surrounding environment. However, the versatility and flexibility of this project may be implemented in cooperation with projects that may include water importation as a pre-treatment to the project area playa and exposed lakebed to ensure the highest quality of water at that site, ensuring habitat restoration goals are implemented broadly and have the opportunity for consistency.

Section 4: Cost Projections

Cost projections are modest thanks to the sustainable quality of this plan to mitigate the Salton Sea by situating it in the context of being located in a habitat that had thrived with and without its presence, which eliminates a lot of the "empty costs" of attempting to import additional water to meet a standard that never really made sense in the first place. The Salton Sea, after all, is prioritized as an irrigation reservoir and should be considered as such in realizing the possibilities and probabilities, as well as general limitations and most effective results in considering mitigating its environmental impact. In other words, the Salton Sea having become a major stop for migratory birds in the North-South Pacific Flyway has been the serendipitous fortune that changed the narrative of the Salton Sea from environmental disaster to in need of being "saved", typically via water importation. It has only been 5 years since the end of the QSA agreement that lasted from 2003-2017, in which the 113 year long flowing of Colorado River water into the Salton Sea finally ceased via legal agreement. Its dramatic change has left people scrambling for more water to refill it. I see this as an opportunity to clean these newly exposed areas of the shoreline up now that the historical effects of neglect are more obvious now that it is observable, measurable, and most importantly, can easily be managed better without water in the way for this brief window of time, especially prior to any new schemes of water importation at large.

Considering it to be in the southern end of the Coachella Valley Basin, and connected to a smaller version of itself in the form of modern lake Cahuilla, these reservoirs need better circulation and filtration systems designed for its biome (as oppose for additional farming irrigation or reclamation facilities) in order to not be so stagnated. It is often asserted that the Salton Sea should get credit for the North-South Migratory birds that stop in the region, but my hypothesis is that the Coachella Valley basin has likely always seen a similar aviary pattern, with the Salton Sea actually having done more harm than good comparatively speaking. The real credit for this being a known resource for migratory birds is more likely due to the complex chain of sub-basins beneath the surface coupled with the super fertile grounds with minerals and salts. It was only until this region was heavily developed by the railroad company and others, such as IID in the late 19th and 20th century as well as presently that this region has changed its natural water courses and environment. With this in mind, the question becomes less and less about water importation, (and on the opposite extreme "letting it dry up") and more about reclaiming the more natural ecosystem of chains of lakes and streams to support the what could be viewed as the Salton Sea's temporary and mismanaged sustainment of the habitat rather than perceiving the Salton Sea as having to be one body of water in order to best manage dust suppression and enhance wildlife. With every portion of the shoreline mitigated and especially with functioning fish rest stops in place, the potential to offset the initial start-up costs by enhancing the reasoning for these activities through cultural, educational, and artistic interpretation and evaluation and press to the area, can generate a broader understanding of this region. These activities also have the goal of an upswing of economic activity in mind and may be achieved through the excitement of a broadened understanding of the complexity of the region.

Annual costs for the "Save the Salton Sea Clean Up Committee" to operate and carry out the projects outlined for shoreline cleanup and habitat restoration is estimated to be

1,000,000 dollars annually for 5 years, for a total of 5,000,000. This is based on the 2028 year deadline to assist in meeting the goals of a total 29,800 acres total in habitat restoration and dust suppression on lakebed areas expected to be exposed by then. Apart from the start up costs such as organizational necessities and contracting bids for environmentally safe waste processing, a large percentage of the annual costs, at least 70%, will be set aside for heavy equipment needed and labor necessary: including backhoes, dump trucks, and conveyor belts so the waste can be safely transported "poco a poco" toward solid ground for processing and removal, at the rate of about 20 miles of the shoreline per year. This rate is based on the ~130 mile shoreline and the inevitability that about 80% of the shoreline will be actually completed in this mission, with about 20% of the shoreline likely being not addressed given that not 100% of the landowners and stakeholders are expected to request such services, but this is subject to change, through a public outreach initiative aimed and social media campaigns, aimed to advertise for this service of shoreline clean up.

The "Save the Coachella Valley Basin" strategy looks at acquiring a 20-40 acre lot at an estimated 1,250,000 and 200,000 for construction of a public facility making it about a 1,550,000 total cost for the purpose of demonstrating the long term effectiveness of the shoreline clean up strategy toward habitat restoration and dust suppression within the "Save the Salton Sea Clean Up Committee" initiative of creating a more supporting ecosystem of connecting smaller bodies of water to better circulate the Salton Sea water. A series of varying 20-60 fish rest stops designed for the various aquatic species in mind to spawn in will replace freshly cleaned shoreline. Depending on the region, this will either be mudflats, natural ponds, or a combination of the two strategies for the most enhanced biodiversity. The short term idea is to be able to assist all regions of the Salton Sea shoreline with the "Salton Sea Clean Up Committee". The long term idea would be able to demonstrate the work accomplished in a publicly accessible way, so that it may continue to offset and circulate a region of the Salton Sea in a monitorable and measurable way. In this sense, the "Save the Coachella Valley Basin" initiative is the community based and academically accessible aspect of this proposal, so that the labor intensive portion of the "Salton Sea Clean Up Committee" not only mitigates the problematic shoreline, but also creates a space to attract educational, cultural, and community opportunities into the future.

The public access area would be connected with a preservation for wildlife and the shoreline area for active fish spawning and protection and may be compared to "fish traps". Experimental archaeology seeks to understand how prehistorical structures functioned by recreating them for use in modern times. While the modern day fish resting stops would not be designed and used in the exact same way, the inspiration is there nonetheless. An estimated 300,000 investment would go toward construction of a public amphitheatre, beautification of the grounds, and water fountains, on this centrally located lot to the treated shoreline so that it may fit local community needs as well. A 300,000 expected cost to construct and permit a natural mineral water well pumped pond in either a separate initiative or as part of the amphitheatre park. A 100,000 cost to construct a pleasant and eco-friendly parking lot with 2 bathrooms for travellers, locals, and guests to the area. The total estimated cost for a public park grounds with access to the shoreline as well as open space for recreation, are projected to be 2,250,000 to be constructed and opened to the public within 2-3 years. Maintenance and utility costs are then to be supported and supplemented by sponsorships and fundraising campaigns aimed to bring

people to the area for events that will help boost long term economic and infrastructural support to the area. Ultimately, after a few successful seasons of advertising this new community resource, the plan would be to take bids for a qualified agency to then take responsibility for it as the 2028 goals are expected to be completed at this time.

Section 5: Funding Plan

Planning, design, and construction funding

"Save the Salton Sea Clean Up Committee" planning involves meeting the short-term goals of habitat creation by designing a comprehensive and versatile clean up schedule and course of action tailored to each region of the shoreline and the applicable landowners involved. This initiative is planned on being funded by applicable Salton Sea related grants for the purpose of habitat restoration. Also through eligible sponsorships, fundraising, and volunteer activities organized by Quantum Consultations for the necessary equipment and labor that cleaning up the potentially emissive playa and converting the space into mudflats and/or inlet-outlet ponds where best applicable, may require in the process. Reclamation lands for example, may contract the "Save the Salton Sea Clean Up Committee" through its funding and resources available toward these necessary activities.

The "Save the Coachella Valley Basin" planning involves the long-term public facility construction and maintenance for the multi-purpose educational and public grounds. The land acquisition may be funded by a combination of research based grants toward best practices of the environmental and social region of the Salton Sea and funding available for this purpose. The design of the public building shall celebrate the historical construction of the region, such as pueblo style, and ultimately the ideal candidate would have an emphasis on Indigenous knowledge of local materials and construction, such as the Torres-Martinez Cahuilla Band of Indians. Partnerships and cooperation will be part of the process toward design and construction, from surveying the field for cultural value, to making use of the land in the most respectable ways possible each step of the way. Sponsorships and donations for the process of land surveying, research, and biological interpretations of the shoreline and playa will ideally come from academic resources and higher educational facilities such as grants from Universities and the like to ensure these grounds are fully accessible to the public in the near future.

Operation and Maintenance (and Annual Cost)

The "Save the Salton Sea Clean Up Committee" initiative's operation and maintenance annually is projected to be around 1,000,000 dollars over a 5 year period in an effort to clean up the shoreline and to replace the playa with aquatic habitats where applicable. As a service based initiative, this facet of the proposal is designed to be on-call to meet the short term goals of the SSMP by 2028. Depending on the amount of projects, with the upwards possibility of treating the entire shoreline, and the least amount of projects being portions of the shoreline making use of such services, the least amount of cost to operate annually on a stand-by, on-call, and continuously active basis is estimated to be around 5,000,000 dollars. Depending on how

close to the goals of dust suppression and habitat creation are by 2026, will determine how much more work there is to be done in this capacity, with around 80% of the work possible having been completed already. The last projected 20% affected areas of the shoreline is an expectation where the removal of the playa is unwarranted, not feasible, or not desired by the stakeholders and landowners of those portions. At this time, the "Save the Salton Sea Committee" will either wrap it's project up, if expected goals have been met; or continue to be of service until the total completion of the project scheduled for 2028, when the goals of habitat creation and dust suppression have been met in full, whichever comes first.

The "Save the Coachella Valley Basin" portion of the project has an expected annual cost of 250,000 for operation and maintenance of the grounds, for utility costs and employee salaries. This cost is expected to begin once the grounds are open to the public, expected to be in 2028. The opening of the grounds would ideally fall in with the celebration of the hard work completed and measurable impact to the environment outlined in the State of California's 10 year plan to do so. This will also mark the observable point at which the short term goals meet and match the long term sustainability goals at the Salton Sea, which ideally includes a sense of quality of life improvement for the people. There will be a budget set aside for seasonal activities that will be designed to boost visibility of the region and create community opportunities. Artists will also have open invitations to put on regular showcases and performances on the grounds aimed to attract sponsorships and donations from patrons of the arts so that it remains open and fully operable.

Conclusion

Thank you for considering Quantum Consultations to assist in these important decisions and ongoing discussions regarding the Salton Sea region and the Coachella Valley Basin. I would like to conclude by stating that inside and outside of the scope of this proposal, it is important to consider the Salton Sea region in the broader context of the Coachella Valley Basin. While interconnected, they have very distinct roles: the Salton Sea is primarily used to sustain the irrigation system and farming industry, while the Coachella Valley Basin is the source of the geothermal activity and resources. The Salton Sea sits atop these resources, but does not necessarily help clarify the environmental status of this region. In addition to this, the ground naturally contains high levels of salt, and so simply addressing salinity solutions and levels is almost a non-starter. This strategy addresses the long term solutions surrounding the continued success of the agricultural industry and the irrigation engineering in place, and how, aside from this primary function of much land usage in the region for this purpose, may we balance the ecosystem to make better use of local water resources that have the express purpose of a thriving habitat. Imagining the land without the modern Salton Sea and surrounding land development is a good place to start, granted that one comes back to reality and ultimately aims meet the two ideals: a thriving habitat largely unaffected by large scale commercial development, and a thriving community largely unaffected by natural disasters that may have occurred hadn't the region been developed the way that it has been thus far.

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Figure 1: Map of the Coachella Valley Basin Dawson, B.J.M., and Belitz, Kenneth, 2012, Groundwater quality in Coachella Valley, California: U.S. Geological Survey Fact Sheet 2012-3098, p.4

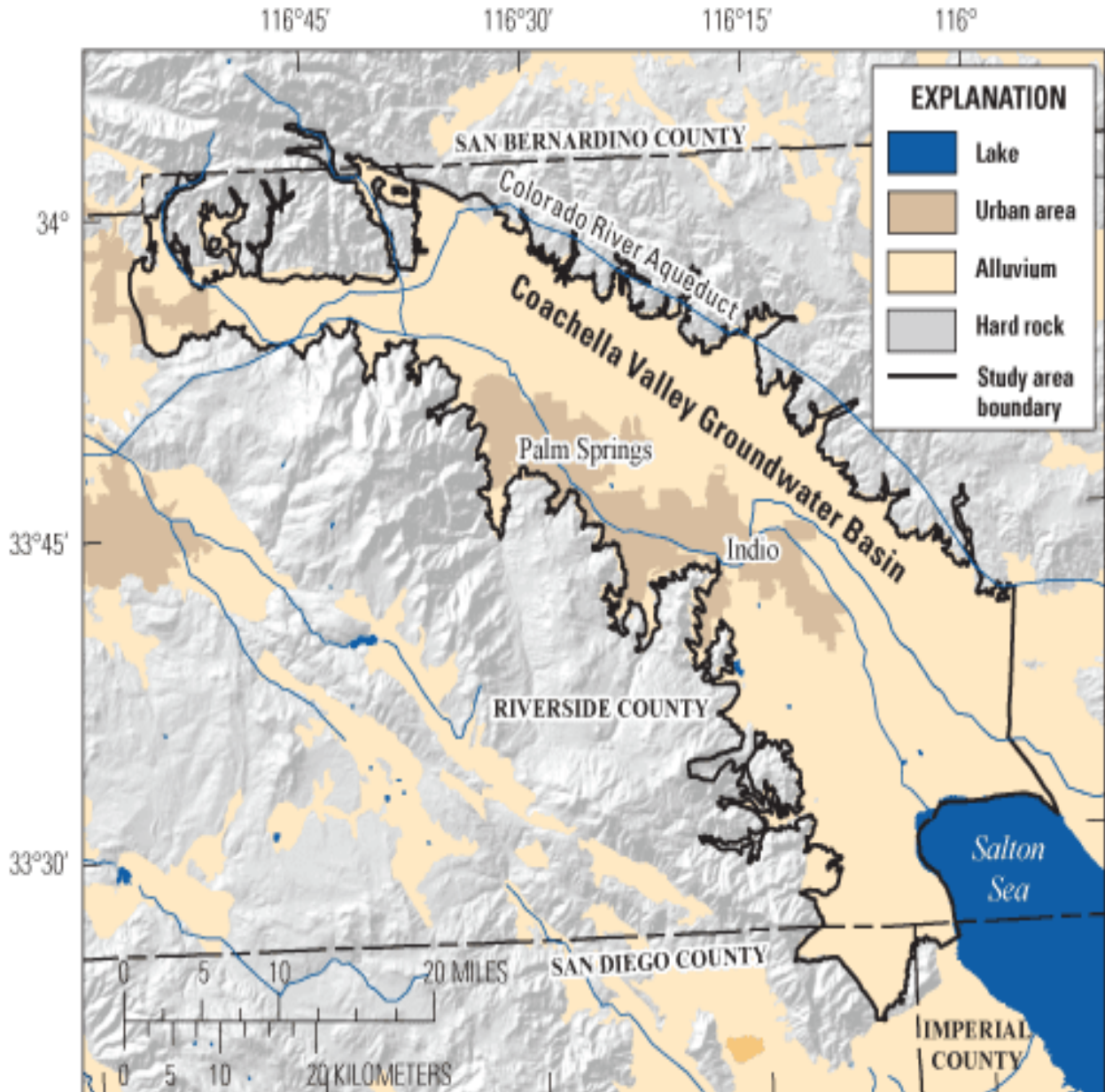
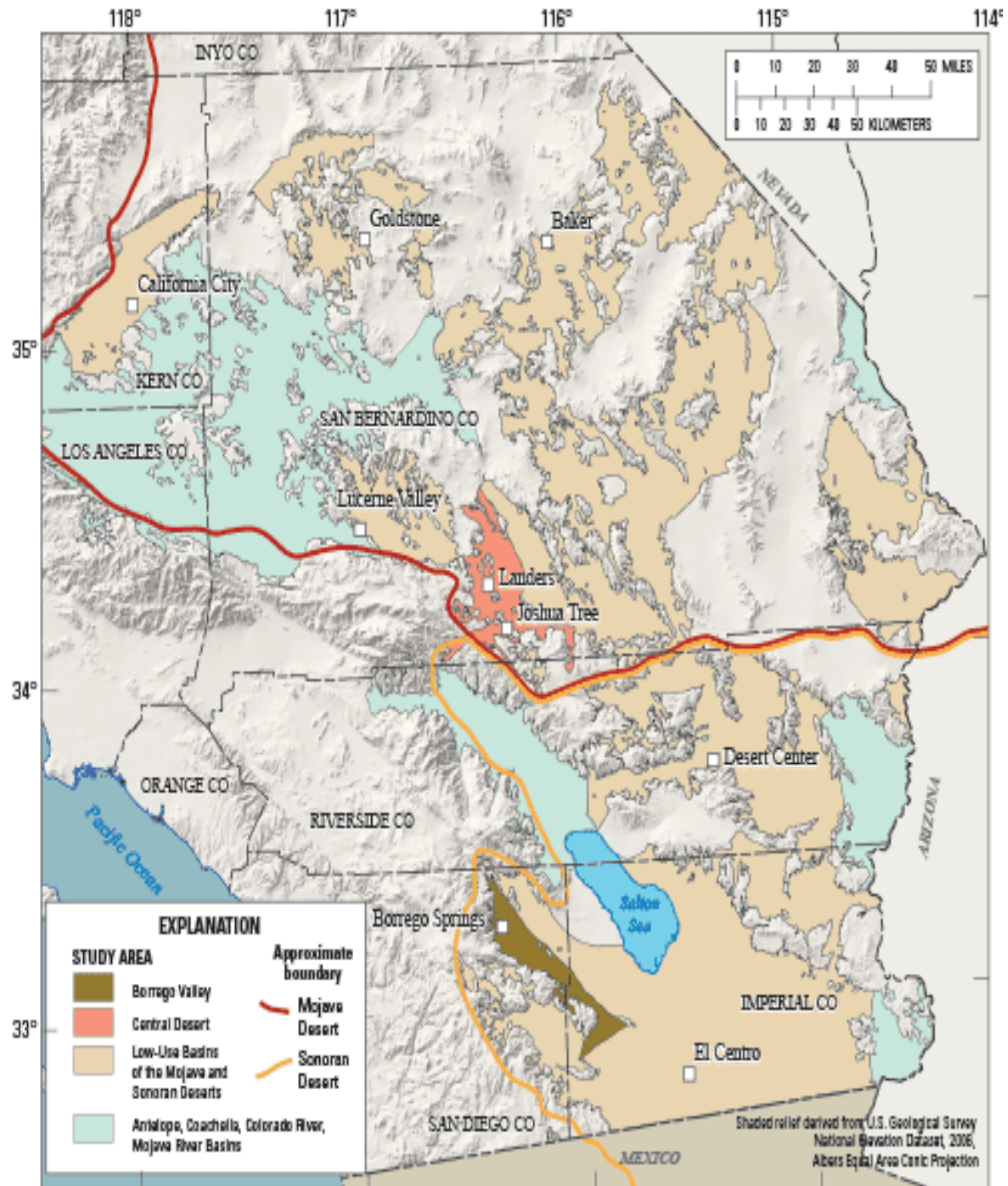


Figure 2: Map of the Coachella Valley River Basin relative to the Salton Sea placement and size. Parsons, M.C., and Belitz, Kenneth, 2014, Groundwater quality in the Borrego Valley, Central Desert, and Low-Use Basins of the Mojave and Sonoran Deserts, California: U.S. Geological Survey Fact Sheet 2014-3001, 4 p., <https://dx.doi.org/10.3133/fs20143001>.



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Watershed Protection and Flood Act information

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