Salton Sea Management Program

Phase I: 10-Year Plan

August 2018

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Acronyms and Abbreviations

backbone	water infrastructure backbone
CNRA	California Natural Resources Agency
DCP	drought contingency plan
DOI	U.S. Department of the Interior
ICAPCD	Imperial County Air Pollution Control District
IID	Imperial Irrigation District
Initiative	Salton Sea Restoration and Renewable Energy Initiative
MOU	memorandum of understanding
MSL	mean sea level
NAVD88	North American Vertical Datum of 1988
PM	particulate matter
ppt	parts per thousand
QSA	Quantification Settlement Agreement
QSA Water Transfer	Imperial Irrigation District Water Conservation and Transfer Project
SALSA	Salton Sea Analysis
SCH	Species Conservation Habitat Project
SSA	Salton Sea Authority
SSAM	Salton Sea Accounting Model
SSMP	Salton Sea Management Plan
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
WCB	California Wildlife Conservation Board

Introduction

Under the leadership of Governor Edmund G Brown Jr., the 2014 *California Water Action Plan* set forth a vision for California water management that balances statewide water supply security with the protection of public, economic, and ecological health. The Salton Sea offers a unique opportunity to preserve these values by leveraging a convergence of support from federal, State, and local stakeholders for a smaller and sustainable sea achieved through the projects outlined in this plan.

The Salton Sea is California's largest lake. Thirty-five miles long and 15 miles wide, the desert lake extends from the Coachella Valley into the Imperial Valley. Though saltier than the ocean, the sea supports an abundance of fish, a food source for millions of migratory birds on the Pacific Flyway. Managing the sea's natural, agricultural, and municipal water inflows to maximize bird and fish habitat, and minimize fine-particle air pollution, will allow California to protect regional health, ecological wealth, and a stable water supply.

The Salton Sea formed in the Salton Trough in Imperial and Riverside counties. Much of the trough is below sea level and has a long history of periodic inundation from the shifting delta of the Colorado River or from infrequent storm events. The last Colorado River inundation of the area occurred in 1905 when an irrigation canal inlet gate failed and much of the area flooded. Since then, lake inflows have been primarily from agricultural activities in the area. Inflows from the New and Alamo rivers are primarily farm return flow water, although there is some inflow from Mexico, particularly during large precipitation events. Over the last several decades, water levels at the Salton Sea have declined and salinity concentrations have increased because of climate fluctuations, agricultural conservation measures, cropping practices, and reduced inflows from Mexico. Recent water transfers from the Imperial Valley have further accelerated the rate of lake elevation decline and have increased the rate of salinity concentration.

Declining lake levels create more particulate air pollution that threatens important bird habitat and poses public health risks.

Over the last 40 years, numerous ideas and plans have been proposed by various entities to restore the Salton Sea. None have been implemented for a variety of reasons, including lack of a shared vision, funding constraints, and reduced inflows.

In 2015, Governor Brown formed the Salton Sea Task Force with principle staff and members of various State agencies to identify short- and medium-term goals to respond to air quality and ecological threats at the Salton Sea. The task force developed actions for the Salton Sea that included:

- Develop and implement the Salton Sea Management Program through departments within the California Natural Resources and Environmental Protection agencies.
- Improve public outreach and local partnerships.
- Accelerate project implementation and delivery.
- Meet a short-term goal of 9,000 acres to 12,000 acres of dust suppression and habitat projects.
- Establish a medium-term goal of 18,000 acres to 25,000 acres of dust suppression and habitat projects.

The State's Salton Sea Management Plan (SSMP) has several phases of development to protect air quality and ecosystem values at the Salton Sea. This draft technical memorandum prepared by the State of California outlines the SSMP's first, 10-year phase (Phase I Plan). It will guide State and federal actions to meet the commitments outlined in the memorandum of understanding (MOU) executed on August 31, 2016, and amended on January 18, 2017, by the U.S. Department of the Interior (DOI) and the California Natural Resource Agency (CNRA). The MOU, among other things, identified a goal of developing projects to protect or improve air quality, wildlife habitat, and water quality as necessary to minimize human health and ecosystem impact at the Salton Sea in the mid-term. While guided by the MOU, the SSMP is a longer-term process that has been developed and will be implemented by the State. This first phase of development has been planned to expedite construction of habitat and to suppress dust on areas of playa that have been, or will be, exposed at the Salton Sea by 2028. The Phase I Plan outlines the process for developing additional management measurements for the Salton Sea that will be implemented in later phases.

The Phase I Plan also addresses the requirements of Assembly Bill 1095 (Garcia 2015) by including those projects deemed "shovel-ready projects," and including estimates of cost. Those projects include:

- Water backbone infrastructure, which will provide conveyance of river and Salton Sea water to air quality and habitat projects.
- SSMP air quality and habitat projects associated with the water backbone infrastructure.
- The CNRA's Phase I Species Conservation Habitat Project (saline impoundments along the southern shore to support fish and wildlife).
- Red Hill Bay Project, an effort of the U.S. Fish and Wildlife Service and Imperial Irrigation District (IID) to restore habitat on the southeastern shore.
- Torres Martinez Wetland Project, an effort of the Torres Martinez Desert Cahuilla Indians to build shallow wetlands along the northern edge of the Salton Sea.

The Phase I Plan considers the implications of the 17-year drought on the Colorado River. The drought may force reductions of Colorado River water to the Lower Basin states (parts of Arizona, California, Nevada, New Mexico, and Utah), which in turn could impact inflows to the Salton Sea. The U.S. Bureau of Reclamation, seven Colorado River Basin states, and key principals of several water management agencies have been developing a drought contingency plan (DCP) that includes implemented and proposed actions to address the potential water shortage. The DOI Order No. 3344 - *Actions to Address Effects of Historic Drought on Colorado River Water Supplies* (U.S. Department of the Interior 2017) further outlines the details of the DCP. One component of the Phase I Plan is to evaluate the current hydrologic modeling for the Salton Sea and to include some of the proposed actions in the model to evaluate their potential effect on Salton Sea inflows.

As the "Air Quality Planning and Implementation" section of this document notes, the air quality mitigation will consist of measures to keep exposed playa wet or vegetated. A series of best available control measures (BACMs) is being evaluated by the Quantification Settlement Agreement (QSA) Water Transfer mitigation program, which was created under a 2003 agricultural-to-urban water transfer agreement involving the State, the IID, Coachella Valley Water District, and the San Diego County Water Authority. The work of determining these best strategies will be paid for by the QSA Joint Powers Authority. The Phase I Plan involves coordination among IID, Imperial County Air Pollution Control District, South Coast Air Quality Management District, and other agencies to ensure that the latest

information about how lakebed exposure may affect air quality is included in the development of BACM pilot projects.

To provide ample time for public input into this plan, the SSMP will schedule several regional workshops to solicit input from community members and stakeholders, as well as provide necessary time for public comment. This process will be announced on the program's website, http://resources.ca.gov/salton-sea/.

Salton Sea Elevation and Exposure Modeling

A key issue at the Salton Sea is exposure of previously submerged lakebed, known as playa, as the lake surface shrinks. This playa exposure is subject to wind erosion and can be a source of fine airborne dust smaller than 10 micrometers, known as particulate matter (PM) 10; as well as a source of PM 2.5. The dust is a significant health hazard and can contribute to respiratory illness in humans. It can also damage agricultural crops and wildlife, and harm the region's tourism industry.

Understanding the extent, type, and location of the exposed playa is important in developing a program to address playa emissivity. There also are regulatory requirements to provide an emission inventory, the creation of which demands an understanding of the extent of exposure possible over the course of the Phase I Plan.

The following is a brief explanation of the process used to create the playa exposure assumptions included in this 10-year plan.

Hydrology Inflow Modeling

As part of the initial environmental evaluation of the Imperial Irrigation District Water Conservation and Transfer Project (QSA Water Transfer), the Salton Sea Accounting Model (SSAM) was used to estimate inflows and salt concentrations at the lake for the term of the QSA Water Transfer, which could be as long as 75 years. This evaluation resulted in a series of mitigation measures designed to address water quality and to maintain the salinity trend at the lake. The measures also had a secondary effect of reducing the water elevation decline at the lake.

In 2012, in response to concerns over the results of the previous modeling, the Salton Sea water inflow and salt balance projections were reevaluated using the Salton Sea Analysis (SALSA) model, originally developed in 2006 for the California Department of Water Resources' Salton Sea Ecosystem Restoration Program's environmental documentation. The SALSA model was integrated into the GoldSim modeling platform to provide an interface that would more easily allow for alternative scenario comparisons, allow for customized simulations, and provide for a stochastic simulation mode to evaluate uncertainty. The revised model results were compared/correlated with the additional years of measured elevation data available from 2003 to 2012 (latest available information). Since then, IID has revised the model based on new data. Those revisions are included in the exposure projections presented here. Because there is some difference of opinion on the results of the latest hydrology, the State will evaluate the hydrologic model, compare the results with earlier versions, and make it available for review as part of the preparation of the SSMP.

Along with the original parameters of the model (e.g., agricultural return flow water, mitigation water delivered to the lake, precipitation, groundwater inflow from the Coachella Valley, evaporation), the

revised model has inputs for water use by the Species Conservation Habitat Project and for water-dependent air quality mitigation. The water demands for the habitat and water-dependent air quality mitigation components are determined based on surface area, evapotranspiration rates, total dissolved solids concentrations, and flow-through volumes. These variables can be manipulated in the model inputs to mimic various management scenarios. The various assumptions integrated into the model will be provided to stakeholders as part of the review of the hydrology model. The State will complete a revision/calibration of the SALSA hydrology model. Additional field data will be integrated into the model.

Initial conditions for the model are from the U. S. Geological Survey (USGS) stream gauge data from December 31, 2012, which measured the lake elevation at 231.35 feet below mean sea level (MSL), based on the North American Vertical Datum of 1988 (NAVD88). The baseline for the salinity concentration is approximately 52.7 parts per thousand (ppt) based on the average of samples taken by the U.S. Bureau of Reclamation at three fixed locations in the lake in February 2012.

A Monte Carlo simulation (stochastic process) is used to provide multiple runs with changes to multiple variables, based on their probability distribution. The runs are then statistically analyzed and an end-of-year Salton Sea water elevation is calculated for each year. The inflow data is combined with lakebed topography (bathymetry) to estimate playa exposure around the lake.

Salton Sea Bathymetry

The revised Salton Sea bathymetric data was developed by consultants from a variety of sources including light detection and ranging (LiDAR) survey technology and boat-based acoustic sonar imagery. This data was manipulated to develop bottom contours for the lake and immediate shore area. It also was used to estimate sediment depth and composition around some areas of the lake. Data relating to the bathymetric model was converted to NAVD 88 using the National Geodetic Survey's VERTCON calculator and a standard conversion factor of 2.113 feet.

To evaluate the accuracy of the playa exposure model, satellite (Landsat 5, 7, and 8) imagery of the Salton Sea was captured and a spectral water index was used to identify areas covered by water. This was then compared to the results of the playa exposure evaluation model and the existing data from the USGS gauge to compare the results. In general, the results were comparable. But the evaluation identified differences in areas around the bays of the New and Alamo rivers. This is likely the result of errors in the bathymetric data caused by limitations of acoustical sonar data in shallow water areas (while these areas are currently dry, portions were flooded with shallow water during the sonar survey). The bay areas that were exposed in 2016 have been included in the exposure acreage. The revised hydrology will evaluate the issue and determine if the bathymetric data need to be further adjusted. This information will be included in the revised hydrologic model review process.

Salton Sea Playa Exposure

Based on the above data, Table 1 summarizes the predicted year-by-year playa exposure from late 2018 to 2028, which totals approximately 48,300 acres. Additional hydrologic analysis will be completed to include potential impacts from the DCP that may revise inflows to the lake, which in turn will cause

Table 1 2018–2028 Annual Exposure (Acres/Year)

Year	Acres
2018	3,500
2019	4,200
2020	5,000
2021	5,600
2022	5,500
2023	5,300
2024	4,900
2025	4,300
2026	3,900
2027	3,300
2028	2,800
Total	**48,300**

changes to the exposure profile. Revisions to the hydrology will change the estimated exposed acreage. It is likely that revisions will be made on an annual basis, as new information becomes available. The revisions will be made available for review by stakeholders.

The original estimates for total playa exposure from the QSA water transfer were approximately 45,000 acres, and the model had the lake stabilizing in approximately 2035. The environmental documentation for the QSA recognized that the amount of exposure might change, and included requirements in the air quality mitigation program that additional modeling be conducted to further evaluate exposure.

The exposure projections currently listed for the 10-year period differ from the projections for the original 2003 and later environmental document prepared as part of the QSA Water Transfer. As was noted previously, the State will evaluate the latest hydrology data and make the results of that evaluation available for review. There will be periodic comparisons of the actual exposed playa against the model predictions of exposed playa.

The SSMP Phase I Plan will be implemented within the exposed areas on the south and north ends of the lake. Some of the exposed area may not be emissive and will not require action from the Phase I Plan. The implementation process for the Phase I Plan is outlined in the “Implementation” section of this document.

Salton Sea Salinity

One of the measures incorporated into the QSA Water Transfer mitigation program was the revised Salton Sea Habitat Conservation Strategy, which required delivery of 800,000 acre-feet of water to the Salton Sea to maintain the salinity trend at the lake.

The delivery of this water mitigates, to a large extent, the decline in elevation of the lake. Delivery of this so-called “mitigation water” ended December 31, 2017.

The original and revised SALSA models calculate the salt concentration for the lake based on a simple mass-balance algorithm. Salinity was modeled and then compared with measured salinity data from the U.S. Bureau of Reclamation's salinity surveys conducted in February 2012. The model estimates that the salinity of the lake will be approximately 63.4 ppt at the end of 2018, and approximately 153.1 ppt in 2045. The most recent measurements of salinity (U. S. Bureau of Reclamation 2016) recorded slightly more than 59 ppt, which is higher than some of the model predictions. Additional modeling will be conducted to confirm salinity trends and show any difference between the modeled and measured salinity. While the salinity projections may change based on the modeling, current projections can still be used for planning purposes.

Phase I — Background

Phase I is designed to address playa exposure by developing habitat or dust suppression projects on exposed playa. The location of habitat projects will be determined primarily based on site logistics such as water availability, soil suitability, and compatibility within the overall habitat landscape. If the primary objectives are met, location of habitat will be further informed by emissivity potential of the playa.

Determination of playa emissivity will drive the location of the dust suppression projects. The development of new methods for evaluating emissivity is part of the QSA Water Transfer Air Quality Mitigation Program and the Phase I Plan. The process for determining more advanced methods of measuring emissivity is an ongoing process that is being coordinated with the two local air districts and the California Air Resources Board. More detail regarding measurement of emissivity is included in the "Air Quality Planning and Implementation" section of this document.

The projected playa exposure acreage is based on data from IID's revised hydrology model, and will be reviewed by the State and other stakeholders. Figure 1 (all figures are presented in Appendix A) illustrates the projected lake elevation in 2003, 2018, 2023, and 2028. The exposed playa acreage included in the Phase I Plan is depicted as shaded areas (zones) on the north and south end of the lake. Figures 2 and 3 are of playa exposure at the New River. Figures 4 and 5 depict exposure at the Alamo River, and Figure 6 depicts exposure at the north end of the lake. For graphical and design development purposes, the area encompassed in the Phase I Plan is divided into three increments of playa exposure by year: 2003–2018, 2018–2023 (green shading), and 2023–2028 (blue shading). But, the Phase I Plan addresses annual exposure of playa areas, as noted in Table 2, starting in 2018. The habitat projects will be concentrated in the 2018–2023 and 2023–2028 exposure zones. BACM pilot projects and the water management ponds will be located in the 2003–2018 exposure zone because they require exposed playa, and the water management ponds are located to facilitate gravity flow. Appendix C includes a preliminary implementation schedule that will be updated as design advances.

Table 2 summarizes the projected exposure and the amount of treatment of exposed emissive playa on an annual basis. There is lag time between playa exposure and construction of habitat or dust suppression techniques. This delay accounts for the seasonal elevation change of the lake (water elevations during a given year vary based on seasonal changes in inflow volumes), wave action wetting the exposed playa, and desiccation of the playa soil after exposure. Initial evaluations by the air quality management program suggest that the lag time is approximately 1.5 years to 2 years. A two-year lag time will be used for the purposes of developing annual target numbers. There will be periodic calibrations to assure that the predicted exposure is accurate.

Table 2 2018–2028 Exposure and SSMP Phase I Projected Construction

Year	Exposed Acres	Proposed Construction
2018	3,500	500
2019	4,200	1,300
2020	5,000	1,700
2021	5,600	3,500
2022	5,500	1,750

2023	5,300	2,750
2024	4,900	2,700
2025	4,300	3,400
2026	3,900	4,000
2027	3,300	4,000
2028	2,800	4,200
Total	**48,300**	**29,800**

Note: SSMP = Salton Sea Management Plan

Table 2 notes more exposed playa area than proposed constructed area. Phase I concentrates on the north and south ends of the playa where the exposure is more pronounced. The proposed construction acreage is the shaded areas noted in Figures 1 through 6. The additional exposed area is primarily along the east and west sides of the lake. These areas are outside of the backbone water management infrastructure and will require additional development of water sources to be converted to habitat areas. These areas may require dust suppression methods to address emissions.

Some exposed areas around the lake may not require treatment, as they will be non-emissive or used for some other purpose, such as access for renewable energy projects or agriculture.

The Phase I Plan includes many of the concepts identified in the Salton Sea Restoration and Renewable Energy Initiative (Initiative) developed by IID and Imperial County in 2015, and revised in the IID's Backbone Infrastructure Concept Design memo of August 2016. Though the Initiative was developed primarily as a potential solution for exposed playa areas on the south end of the lake, the concept can also be applied to other areas around the lake. Phase I will incorporate two priority elements of the Initiative: (1) maintaining access for the development of renewable energy (primarily geothermal), and (2) incremental construction based on playa access and funding availability. The Torres Martinez Desert Cahuilla Tribal nation (Torres) has developed plans for several projects on the north end of the lake that will be a part of Phase I. Habitat design will be informed by State and federal wildlife agencies, as well as academic and non-profit partners.

Dust suppression projects will be coordinated with the Salton Sea Air Quality Mitigation Program (Imperial Irrigation District/Joint Powers Authority 2016), the Imperial County Air Pollution Control District (ICAPCD), the California Air Resources Board and the South Coast Air Quality Management District. The State will continue to coordinate with the Salton Sea Authority (SSA), the Water Transfer Joint Powers Authority, IID, and ICAPCD on the development of BACM pilot projects per Imperial County's recent request for letters of interest from affected landowners, and the SSA's Natural Resource Conservation Service grant process. The "Air Quality Planning and Implementation" section of this document provides additional details.

To expedite Phase I, the SSMP design team will include State staff and outside consultants developing the design criteria for the water backbone infrastructure, as well as habitat and dust suppression projects at the north and south ends of the lake. The team will work closely with State agencies, IID, SSA, SSMP committees, the QSA water transfer agencies, and other stakeholders during the development of the project plans.

Senate Bill 839 (Statutes of 2015–2016) grants the California Department of Water Resources design/build contracting authority for the SSMP. This authority will expedite and provide a more flexible design and construction process, as well as potentially reduce project costs. Design criteria and preliminary construction design will be used to develop and advertise for a design/build consultant to implement Phase I projects.

Phase I Planning and Design

The State will use the amount/rate of playa exposure (subject to lag time and other constraints) to plan and implement each year's annual increment of construction of projects in the Phase I Plan. Each year, during a specific time frame (likely December), the State will determine actual playa exposure using methods similar to those described above for evaluating the playa exposure model's accuracy, and adjust the hydrology model if needed. The evaluation will include measuring the emissivity and potential for toxic emissions of the playa to determine if the exposed area requires mitigation. The Phase I Plan will require a certain amount of adaptive management, as there may be seasonal fluctuations at the lake, or changes in annual exposures, that may require adjustments to plan implementation.

The exposed area to the west of the New River (Figures 2 and 3) is identified as the first site to be developed because much of the area was included in the Species Conservation Habitat Project (SCH) environmental documentation and will not require significant additional regulatory compliance effort. The second area developed will be east of the New River (Figures 4 and 5). This area will be developed after construction of the SCH is substantially completed. The SCH serves as both habitat and the water management pond for the SSMP projects on the east side of the river. Additionally, the Torres project located on the north end of the lake. will be developed (Figures 10 and 11). Permitting work on other areas is underway and will be completed prior to planned construction dates. The State is currently trying to determine the most expedient process for regulatory compliance and will make every effort to utilize existing California Environmental Quality Act and permitting documentation in that process.

Areas around the Alamo River (Figures 6, 7, 8, and 9) will be developed later in the Phase I Plan, because they involve more access issues associated with geothermal development. The Red Hill Bay project is underway on the west side of the Alamo River (Figures 6 and 7) and will be completed in 2018.

The development of the Phase I Plan is divided into water backbone infrastructure, habitat, and air quality components, as described in the following sections.

Water Backbone Infrastructure Design

The water backbone infrastructure (backbone) is part of the Salton Sea Restoration and Renewable Energy Initiative (Imperial Irrigation District 2015, revised 2016), and is designed to supply agricultural return flow water for dust suppression, habitat projects, and other potential land uses on the south end of the lake. The backbone will consist of a series of outlets from the Alamo and New rivers that supply agricultural return flow water to water management ponds located along the edges of the lakeshore adjacent to the rivers (Figure 1). The water management ponds will include an inlet for Salton Sea water. The two water sources will be blended in the water management pond, and the resulting brackish water will be used for the habitat areas, the water management ponds will also provide habitat. The project water distribution system will deliver the brackish water from the water management ponds for habitat and dust suppression.

The 2016 Audubon California report, *Quantifying Bird Habitat at the Salton Sea - Informing the State of California's Salton Sea Management Plan*, details salinity levels tolerated by various avian species. The Audubon California report will help determine specific locations and salinity for the various habitat areas based on target species and feeding guilds. Location of the various habitat types will be developed as part of the project design effort.

The backbone is divided into sections based on the agricultural return-flow water source. The New River is depicted in Figures 2 and 3, and the Alamo River is depicted in Figures 4 and 5. The river sections are further subdivided based on the location of the playa that will be served by each section, with the New River divided into east and west, and the Alamo River divided into north and south.

The State team (which includes various SSMP advisory committees), along with IID, the QSA Water Transfer agencies, and other stakeholders, will collaborate to develop design and construction standards for the Phase I water backbone delivery system. IID will be involved in the review and approval of the backbone system, as it will be connected to IID infrastructure. The criteria for the backbone water delivery system may include the following:

- **Geotechnical Evaluation**: Utilizing existing data where practical, determine suitable substrate materials available for berm foundation and berm construction. This will be a limited evaluation similar to what was done for the SCH.
- **River Delivery System**: Evaluate the construction and operation cost of a pump system versus the development of a river check dam structure to facilitate gravity flow from the river.
- **Identification of Existing Habitat Areas**: Evaluate existing habitat and vegetation along the eastern side of the lake to determine if portions can be stabilized or enhanced (Figures 8 and 9). Vegetation, ponded water, and saturated soils in these areas are likely caused by natural or artificial blockage of the agricultural drains in the area. Consider the potential for water quality issues (selenium) in these areas and the potential for management of desert pupfish and habitat enhancement.
- **Design Criteria**: Determine process for assessing the value of engineering of projects with an emphasis on developing standards that compare project longevity against the costs of building and maintenance.
- **Design-Year Storm**: Determine the appropriate design-year storm and develop flood control measures to accommodate that flow. The evaluation may include the development of sacrificial berms, cutouts, or armoring of the channel to pass large volumes of water from the river channel to the lake.
- **Channels**: Evaluate the potential for pipe systems instead of open channels for the distribution system. Evaluate size, structure, and composition (lined versus unlined) of the distribution system.
- **Water Management Ponds**: Determine the final structure, size, and location of the water impoundment ponds. Determine sediment control system. Evaluate berm construction parameters (e.g., material, compaction).
- **Easement and Lease Protocols**: To the extent practical, develop standardized easement and lease agreements for IID parcels and other parcels that will be used for SSMP projects.
- **Develop Contingency Plan for Funding Shortfalls**: Develop a program to prioritize certain aspects of the Phase I Plan if funding is not available for the complete implementation. Considerations will include human health concerns, potential impacts to agricultural activities, and ecosystem management.

- **Operation, Maintenance, and Monitoring**: Develop cost estimates for operation, maintenance, and monitoring activities associated with constructed facilities. The State will be responsible for implementing the operation, maintenance, and monitoring of the project. The DOI/CNRA MOU (Appendix D) identifies federal funding for these activities for a 10-year period.
- **Compatibility with IID Draft Water Transfer Habitat Conservation Plan**: The Phase I Plan will be developed to be compatible with the measures for desert pupfish, marsh birds, and other Salton Sea or drain species included in the draft habitat conservation plan developed for the water transfer mitigation program.
- **Compatibility with IID/Joint Powers Authority Water Transfer Air Quality Mitigation Program**: The State will coordinate with IID and their consulting team, ICAPCD, Water Transfer Joint Powers Authority, and South Coast Air Quality Management District to integrate compatible BACM pilot projects into Phase I of the SSMP. The State will coordinate with Water Transfer Joint Powers Authority partners to implement its air quality mitigation program. Efforts are underway to determine if accelerating portions of the air quality mitigation program are warranted. This coordination will be conducted through the existing Water Transfer Joint Powers Authority budget process and the existing mitigation development program for the water transfer. This process will follow the four-step air quality mitigation guidelines outlined in the QSA Water Transfer environmental documentation.
- **Compatibility with Renewable Energy Projects**: With the notable exception of the Red Hill Bay project, the initial projects described for Phase I are either outside or at the edges of the known geothermal resource area. But, the remainder of the Phase I projects are within this zone. The State will continue to coordinate with the geothermal developers, regulatory agencies, and land owners to design the SSMP projects to minimize or eliminate conflicts with renewable energy development. Currently, the Phase I design assumes access provisions will be accommodated by the existing drain outlet corridors spaced approximately every half mile along the southeast portion of the lake. This may change as development proceeds.
- **Compatibility with Coachella Valley Multispecies Habitat Conservation Plan**: The Phase I Plan will be developed to be compatible with the conservation measures for desert pupfish, marsh birds, and other Salton Sea or drain species included in the *Coachella Valley Multispecies Habitat Conservation Plan*.

Phase I — Implementation

Water Backbone Infrastructure Implementation

The 2018–2023 water management ponds will be the first facilities constructed as part of the water backbone infrastructure, followed by the habitat and dust suppression projects associated with each individual pond. The water management ponds likely will be constructed at the highest ground elevation on the playa, as is practical to facilitate gravity delivery of water to the habitat and dust suppression water distribution system. The ponds will provide a blend of agricultural return flow water and Salton Sea water to the habitat and water-dependent dust-suppression project areas in the 2018–2023 zone exposure area. A second water management pond will be constructed in each section later in the Phase I Plan progression after the air quality and habitat projects in the 2018–2023 playa exposure zone have been started (Appendix C: Project Schedule). Construction of the second water management pond will be completed prior to playa exposure in the 2023–2028 playa zone so that it can be used to supply water to habitat and air quality projects in that zone. The water management ponds will provide fishery habitat.

Initial construction will start in the area to the west of the New River (Figures 2 and 3) to take advantage of existing permits and authorizations. As the construction design for the area west of the New River is completed, the environmental documentation will be finalized for the remaining sites. Implementation will follow on the east side of the New River (Figures 4 and 5) and the north end of the lake (Figures 10 and 11). As an access plan for renewable energy is developed on the areas around the Alamo River, the water management ponds will be sequenced, with the initial pond providing water to the 2018–2023 zone completed first, and the second pond completed as the lake continues to recede, exposing more playa.

The habitat and dust suppression project distribution system will consist of a series of channels or pipelines that will distribute water from the water management ponds to the various habitat and dust suppression cells. The system will be designed to provide access corridors for renewable energy development. The State will coordinate with IID, Imperial County, geothermal developers, and others to assure that adequate access is maintained.

Habitat Goals and Descriptions

The State will develop habitat goals for SSMP projects, Cumulatively, projects will provide habitat for fish, including desert pupfish, a variety of bird guilds, and invertebrates, Overall, SSMP projects will increase the amount of habitat for desert pupfish and provide measures to protect desert pupfish during construction, Development of pond habitat around the sea is designed to support fish species and provide a beneficial impact on fish populations., Project operation will continue to provide habitat for desert pupfish and several special-status bird species after the Salton Sea exceeds their water quality tolerances.

The State has partnered with numerous State and federal agencies along with the SSA, IID, Imperial County, Audubon California, and the University of California and other academic organizations to develop and fund habitat and dust suppression projects around the Salton Sea.

The State also contracted with Audubon California to develop the technical report, *Quantifying Bird Habitat at the Salton Sea* (Audubon California 2016). The report identifies and quantifies the current acreage of each habitat type, comparing it to the amount of habitat in previous years, and will be used to

guide habitat program design. It should be noted that development of the habitat types listed below (with the possible exception of playa habitat) will provide adequate dust suppression in those areas. The following sections detail the eight different habitat types identified by the report, their importance, and their potential development opportunities.

Permanent Wetlands with Vegetation

This habitat type is primarily located around the Salton Sea where the agricultural drains back up and flood, or where land is deliberately flooded for habitat. Vegetation varies from invasive species such as tamarisk, to cattails and bulrush. It is unclear if this habitat type will persist or be recreated at the Salton Sea. The current selenium bioaccumulation mitigation process is to maintain salinity of the various habitat types at a level that precludes or significantly reduces the growth of vegetation within the habitat areas. The SSMP planning process will evaluate the existing areas and the potential for enhancing or developing additional areas.

Dry Playa Habitat

Exposed dry playa provides some specific nesting and general foraging habitat value, particularly near the water shoreline. This habitat type will tend to follow the receding shoreline and will likely always be part of the Salton Sea ecosystem in areas immediately upslope of the existing shoreline. But, as the salinity of the center lake area increases, it could change the invertebrate population, and reduce the forage opportunities for the lake's existing bird population.

As a result, additional playa habitat might be created, or marginal habitat may be enhanced, with small woody debris and sparse vegetation to further promote nesting areas. These areas could be incorporated into the shallow habitat cells by fluctuating water elevations on the shoreward edge of the cell, or less emissive playa areas might be identified and developed as habitat.

Mudflat, Sandflat, and Beach Habitat

This habitat type is the water/land interface (from wet substrate to less than 0.5 foot of water depth) along the lake shoreline. This habitat type is likely to continue at the lake as the water elevation decreases. The beach areas are normally high in invertebrate populations (insect and other arthropods) and provide foraging habitat for birds, but the extent and quality of the habitat may be affected by increased salinity. As salinity increases, the invertebrate population may change from less salt-tolerant species to more salt-tolerant species, though it is unclear how, or if, this colonization will occur. Changes in the invertebrate population in turn may affect bird species with specific diets.

The Red Hill Bay project, currently under construction, will contain areas of this habitat type as a foraging area for shore and wading birds. The SCH will have areas of this habitat type along the shallow shoreline and around some of the island structures. The SSMP shallow water habitat will contain areas of this habitat type along the shallower end of each pond.

Mid- and Deep-Water Habitat

The Audubon California report described mid-water and deep-water as two different habitat types; they are combined here because it may be easier from a construction and management perspective to have both habitat types in one cell. The water depth in this habitat ranges from 0.5 foot to more than 6 feet. This

type of habitat provides forage and refuge for fish, including desert pupfish, and invertebrate populations. While there will be a considerable amount of mid- to deep-water habitat at the lake, the increases in salinity will likely render this habitat unsuitable for fish reproduction.

The following areas are designed, or could be modified, to provide initial mid- and deep-water habitat.

Species Conservation Habitat Project (SCH)

SCH is specifically designed as fish and avian habitat. It will have areas that are more than 6 feet deep to accommodate a sustainable fishery. The project is located to the immediate east of the New River on exposed playa. It will be supplied water from an adjacent mixing basin that receives agricultural return flow water from the New River and saline water from the Salton Sea.

Torres Wetland Project

The Torres project on the north end of the lake is a mid- and deep-water habitat that should be suitable for fish. This project and the SCH will be used to evaluate construction and operation techniques to inform later development of mid- to deep-water habitat.

Water Management Ponds

The water management ponds included in the water backbone infrastructure may also serve as habitat for fish. These ponds will have berms that are 6 feet or less above the ground surface and likely will not impound water much higher than 5 feet above the ground surface. But, much of the material to build the berms will be excavated from the interior of the management pond, and the total water depth will be deeper.

Red Hill Bay

While Red Hill Bay is generally considered shallow water habitat, there will be some areas of deeper water within the ponded areas. Additional evaluation is necessary to determine if these areas will sustain fish populations.

Habitat Implementation

Habitat projects associated with the first water management ponds will be concentrated in the 2018–2023 playa exposure zone based on the annual exposure. Some habitat or dust suppression projects might be included in the lower elevations of the 2003–2018 playa exposure zone, depending on actual playa exposure and site logistics.

The Red Hill Bay and the SCH are in the 2002–2018 playa exposure zone. Along with the planned water management ponds, they will cover portions of the 2003–2018 playa exposure zone as they dry, reducing or eliminating potential dust emissions from those areas. The State will work with ICAPCD and IID to locate BACM pilot projects in the 2003–2018 playa exposure zone to further reduce the potential for dust emissions. Additional habitat will be planned for the 2018–2023 and 2023–2028 exposed areas. To the extent practical, the SSMP will strive to provide multiple benefit projects that combine dust suppression with habitat enhancement and other positive benefits.

From approximately 2019 to 2021, the second series of water management ponds will be constructed on 2003–2018 exposed playa zone to provide water to the 2023–2038 playa exposure zone. Actual construction of habitat and dust suppression projects in the 2023–2028 zone will commence when portions of that area are dry enough to allow equipment access.

Air Quality Planning and Implementation

The SSMP air quality component is modeled after the IID/Water Transfer Joint Power Authority air quality mitigation program (Salton Sea Air Quality Mitigation Program, Imperial Irrigation District 2016) for the QSA Water Transfer Project. The SSMP recognizes the four-step process outlined in the final environmental impact report/environmental impact statement and concentrates on "Step 2 – Implementing a Research and Monitoring Program," to define the parameters of dust suppression needs and identify solutions, and on "Step 4 – Implementing Feasible Dust Suppression Projects," (BACM pilot projects) at the Salton Sea.

The State's SSMP air quality mitigation program will include coordination with IID, Coachella Valley Water District, QSA Water Transfer Joint Powers Authority, South Coast Air Quality Management District, ICAPCD, and the California Air Resource Board to develop BACM and to further develop and implement the emission monitoring process. The Salton Sea Air Quality Mitigation Program (Imperial Irrigation District 2016) contains more details on the air quality mitigation effort.

The SSMP envisions a mix of water-dependent and waterless dust suppression projects in all phases of the SSMP. Ongoing evaluations of the criteria for determining which dust suppression techniques will be used in specific areas will continue as the QSA Water Transfer Air Quality Mitigation Program and the SSMP are developed.

Some of the techniques, such as enhanced vegetation, could be considered waterless measures if designed to intercept the groundwater level, but they would require surface water for establishment. Many of these techniques are currently being evaluated for efficacy and longevity in the 2003–2018 playa exposure zone. Most of the methods have not been in place long enough to determine longevity or durability, but evaluations will continue.

Water Dependent

The water-dependent dust suppression includes all water impoundment areas (water management ponds and habitat) as well as vegetation enhancement techniques, and salt- or surface-crust formation areas. Currently, the SSMP design team is evaluating the potential for seasonal flooding of some areas to provide habitat during migration or nesting seasons, and then reduction of water levels to keep the surface near saturation, which should provide dust suppression. Vegetation enhancement requires some amount of water to irrigate the plant material and leach salts out of the upper portion of the root zone.

Salt-crust formation requires some amount of water to form the crust, and periodic inundation to stabilize the crust. Initial evaluations of naturally formed salt and surface crusts around the sea (Desert Research Institute and IID Portable In-Situ Wind Erosion Lab [PI-SWERL] results) suggest that the surface crusting weakens with conditions of lower temperature and higher humidity (approximately December–March). More evaluation is needed to determine if the weakening of the crust is sufficient to cause those areas to fail stability testing. Additional evaluation of salt crusts and the development of better emissivity

determination techniques, already underway as part of the QSA Water Transfer Mitigation program, will continue as part of the initial phases of the SSMP.

Table 3 summarizes the projected unit costs for water-dependent dust suppression methods. These costs will likely change as the evaluation process continues.

Table 3 Projected Cost for Water-Dependent Dust Suppression Techniques

Dust Suppression Method	Cost per Acre
Vegetation Enhancement	$9,000
Vegetation Swale	$17,000
Managed Vegetation	$25,000
Shallow Flood	$25,000
Brine Stabilization	$21,000

The State, IID, Torres, and other landholders are also considering groundwater wells that tap the shallow aquifer to supply water to the enhanced vegetation areas. Much of this aquifer is a result of perched water from agricultural irrigation. While there are some concerns with water quality, this process may provide water to some areas that lack access to a surface water supply. The north end has the most potential for near-surface groundwater, but there are other areas where the techniques may be used. The costs for this dust-suppression technique have not been developed. The IID/Water Transfer Joint Power Authority air quality management team is currently monitoring groundwater elevations in a number of sites around the lake.

Waterless

The waterless dust-suppression techniques may require an initial application of water, but generally are not dependent on periodic application of surface water. Some of these treatments cost less than some water-dependent treatments, but may require more operation and maintenance. Projected unit costs for these methods are listed in Table 4.

These preliminary cost estimates will change as more information is developed. Some of these methods are currently under evaluation for longevity and efficacy in several areas around the Salton Sea.

Table 4 Projected Cost for Waterless Dust Suppression Techniques

Dust Suppression Method	Cost per Acre
Surface Roughening	$400
Moat and Row	$14,000
Suppressants/Surface Stabilizers	$2,000
Gravel Cover (2 inch)	$36,000
Gravel Cover (4 inch)	$48,000

Projected Costs and Funding

Project Costs

Cost projections for the various components of the Phase I Plan have been developed with the best available information. Projected costs include planning and design costs that are concentrated in the first years of the plan. The developed designs will be used throughout the 10-year implementation of the Phase I plan, The estimates are based on developing habitat in all the shaded areas in Figures A-1 through A-4 (except for renewable energy access or other identified land uses). These projections will change as additional information becomes available for site logistics and for the actual costs of the initial projects. Costs for the Red Hill Bay project and the SCH are not included in the projected costs because they are funded by other sources.

Appendix B includes a cost breakdown based on unit costs for each year. Annual costs, constructed acreage, and funding availability are summarized in the Table 5.

Table 5 Projected Annual Cost, Acres Constructed, and Funding of Salton Sea Management Plan Phase I 10-Year Plan

Year	Newly Exposed Acres	Proposed Construction Acres	Projected Total Cost (millions)	Available Funding (millions)	Balance (millions)
2018	3,500	500	$10.0	$10.0	$0
2019	4,200	1,300	$27.0	$27.0	$0
2020	5,000	1,700	$35.5	$35.5	$0
2021	5,600	3,500	$43.5	$7.5	($36.0)
2022	5,500	1,750	$33.5	-	($33.5)
2023	5,300	2,750	$35.5	-	($35.5)
2024	4,900	2,700	$34.0	-	($34.0)
2025	4,300	3,400	$42.5	-	($42.5)
2026	3,900	4,000	$47.5	-	($47.5)
2027	3,300	4,000	$37.5	-	($37.5)
2028	2,800	4,200	$36.5	-	($36.5)
Total	**48,300**	**29,800**	**$383.0**	**$80.0**	**($303.0)**

Expenditure Reporting and Process Accountability

CNRA will report each fiscal year on prior year expenditures made for SSMP implementation, availability of funds for future expenditures, and changes to the SSMP program.

Existing Funding

Water Bond Funding (Proposition 1)

Proposition 1, the $7.5 billion water bond passed by California voters in 2014, provides $80.5 million to fund development, permitting, and implementation of the SSMP. This funding is available over the next several years. The expenditure of these funds is reflected in the available funding column of Table 5.

Wildlife Conservation Board Funding for SSMP Projects

The California Wildlife Conservation Board (WCB) approved a $14 million grant in November 2016 to help fund the SSMP's SCH. The grant, along with approximately $21 million from Proposition 84, will fund the construction of a 640-acre aquatic habitat area to support a fishery and provide habitat for Salton Sea avian species.

In 2013, the WCB funded the design and construction of the electrical power distribution system through a grant to IID. The WCB also awarded a $1.85 million grant to the IID to begin work on the Red Hill Bay project, a joint venture project with IID, U.S. Fish and Wildlife, Sonny Bono Salton Sea National Wildlife Refuge, and the State.

U.S. Department of Agriculture

The U.S. Department of Agriculture (USDA) recently approved the Salton Sea Regional Conservation Partnership Program to address habitat, air, and water quality on agricultural lands around the Salton Sea. The SSA will administer a $7.5 million grant for water conservation, wetland creation, and air quality mitigation. The wetland creation and air quality management portions of the grant will be used to develop pilot BACM projects and wetland habitat projects on parcels with an agricultural history.

The USDA funding is not included in the projections above. As the program is finalized and grantees are identified, the funding will be accounted for in the annual expenditure reporting process. The success of this grant program is intended to be a proof-of-concept for potentially larger-scale USDA funding. This program could be expanded to include non-agricultural lands at the Salton Sea.

Potential Funding Sources

Water Transfer Joint Powers Authority

The State will work with the members of the Water Transfer Joint Powers Authority to determine if funding included in the existing mitigation program can be utilized for SSMP projects that further the goals of the water transfer mitigation program. Currently the State and IID are exploring acceleration of air quality mitigation efforts that will benefit both programs. The cost of the additional research into determining playa emissivity and methods that suppress dust are projected to range from $5 million to $8 million.

DOI/CNRA Memorandum of Understanding Funding

The MOU (Appendix D) between the DOI and the CNRA identified a framework for collaboration at the Salton Sea. The MOU calls for $30 million in federal funding over the next 10 years for activities associated with the SSMP.

The amendment to the MOU further defines State and federal responsibilities related to dust emissions from the exposed playa at the Salton Sea.

Philanthropic Organizations

The Water Funder Initiative, a collaborative of leading philanthropic organizations, has committed to raise $10 million over the next five years to support implementation of a comprehensive plan to protect public health and the environment, and promote renewable energy development at the Salton Sea.

Water Resource Development Act Funding

The Water Resources Development Act of 2016 maintains the $30 million funding identified in the 2007 Water Resources Development Act. The U.S. Army Corps of Engineers (USACE) administers the part of the program pertinent to the Salton Sea. The 2016 act recognizes the SSA as a preferred partner for funding agreements with USACE. The 2016 act also streamlines the methodology for the development and approval of related projects. This funding has not been appropriated.

USDA Partnerships and Funding

After successful implementation of the USDA/SSA grant noted above, additional funding may be possible through development of a partnership between the USDA and the SSMP using the Watershed Protection and Flood Prevention Act (Public Law 566). This program could address air quality, water quality, and habitat on non-agricultural lands that are on, or adjacent to, the Salton Sea playa. This could include allowing public lands that endanger public health to be included in the USDA's Reserve Enhancement Program or the Environmental Quality Incentives Program.

Additional State and Local Funding

Funding and in-kind support may be available through future state appropriations, water agencies, local infrastructure financing districts, geothermal leases, and other public and private sources. The State will describe its ongoing evaluation of potential funding sources in the annual expenditure reporting process.

Development of Planning Criteria for Additional Phases of the Salton Sea Management Plan

The State is committed to continuing the SSMP process and will also work with the SSMP Science Committee, other committees, and stakeholders to evaluate concepts for later phases of the SSMP. The evaluation will include a hydrologic analysis to estimate inflows to the lake and water quality concerns that might affect both the current and later phases of SSMP. The following eight items are specific areas of concern for evaluation by the Science, Project, and Long Range planning committees.

Determine Habitat Functional Values

State and federal wildlife agencies, in cooperation with Audubon California, other stakeholders, and the SSMP Science Committee, will develop targets and objectives to evaluate created habitat.

Determine Water Use

There is no issue with water availability for the Phase I Plan. But, water demands for the later phases must be calculated and compared to the revised inflow models to determine water availability in the longer term.

Salinity

The SSMP Science Committee will work with the stakeholders to evaluate the effect of salinity on the various habitats at the Salton Sea. While a range of salinity has been established for the habitat areas, the SSMP Science Committee will evaluate that range to determine its effectiveness.

Water Quality in Constructed Habitat

The SSMP Science Committee will evaluate the potential water quality issues associated with the constructed habitat. The water quality parameters will include an evaluation of methods to control nutrient concentrations, metal concentrations, biological/chemical oxygen demand, and other water column constituents. The evaluation of various water quality treatments (treatment wetland cells, bioreactors, algal uptake, and chemical treatments) may also be evaluated.

Selenium Management

Currently, the management of selenium bioaccumulation is based on managing salinity to reduce or eliminate vegetation, thus interrupting, or at least restricting, the bioaccumulation pathway. The SSMP Science Committee will look at other potential selenium management methods that might be more effective.

Development of Best Available Control Measures

The State will work with IID and ICAPCD to integrate the development of BACM into the dust suppression design.

Harbor and Ancillary Facilities

Evaluate the potential for reconnecting, inundating, or treating harbors and boat docks along the east and west sides of the lake as part of the SSMP, and for reducing odor and vector issues. In some cases, this could include making the harbor functional for shallow draft boats.

Water Import Projects

Before consideration by the SSMP, the State will require that any water import project proposal include an engineering and logistic feasibility study conducted on behalf of the proponent by an accredited or licensed engineering, planning, or equivalent organization recognized by the State. The criteria for consideration of any such proposal will include (1) identifying planning, development, construction, and operation costs, and (2) identifying the funding source for each. Specifics on how the proposal would address salinity and other water quality concerns will also be required. Schedules detailing the phases and funding needs of each project must be provided.

Adaptive Management, Monitoring, and Contingency Planning

Adaptive management will be fundamental to the success of the SSMP. The adaptive management program will include review by the SSMP Science Committee, the other SSMP committees, and the Salton Sea stakeholders. The program relies heavily on the early development of projects (SCH, Red Hill Bay, and other areas) to test aspects of design, construction, and management. These early lessons learned will be valuable in the efficient and economic development of later phases of the SSMP.

An adaptive monitoring program is under development and will be implemented by the State. It will include the identification of a fish stocking program for the SCH (and later habitat), development of a monitoring and management program for existing avian and fishery habitat, and a water quality monitoring program. It is anticipated that a draft of the plan will be available in 2018. Additionally, the California Department of Fish and Wildlife is in the process of evaluating a potential wider-scale monitoring program for the lake that could be combined with the current U.S. Bureau of Reclamation monitoring efforts and ongoing efforts of others. The monitoring program will be developed in compliance with the USGS guidelines for the Salton Sea monitoring and will utilize existing data to the extent practical.

At this point, the Phase I Plan is not fully funded. The State will continue to monitor the existing and potential funding sources and measure those against the projected costs for the projects in the implementation plan. Adjustments may be required to the plan to maintain adequate dust suppression in some areas while delaying the construction of water infrastructure and habitat (the more expensive components). The State will coordinate with the stakeholders as adjustments to the Phase I Plan are considered.

The development of this contingency process will be evaluated starting in 2018 and will be done in two- to five-year increments over the course of the Phase I Plan. As part of the initial tasks undertaken in Phase I, a series of specific metrics will be developed to help assess funding opportunities and match them against projected costs for Phase I.

Outreach

The State is committed to a transparent and open process in the development and implementation of the SSMP. To that end, a set of advisory committees has been formed to meet periodically and discuss specific topics. Those committees include a science advisory committee and committees on air quality, long-range planning, and public outreach. The public outreach committee conducted a series of 13 public outreach meetings around the greater Salton Sea area from April to August 2016 to introduce the SSMP to the public and to solicit input on Salton Sea issues and concerns.

The University of California, Riverside and the University of California, Irvine Salton Sea programs conducted a series of voluntary surveys of meeting participants (pre- and post-meeting) to gauge the effectiveness of the communication effort. Approximately 43 percent of meeting attendees participated in the surveys. Of those surveyed, 36 percent felt they had gained knowledge on the Salton Sea. They indicated an increase in their belief that the State was actively addressing issues at the Salton Sea. When asked to prioritize the issues of concern at the sea, they identified environmental health, public health, and nature as their top three concerns.

One of the things identified after the last series of meetings was the difficulty in contacting some communities and the need to have more robust environmental justice outreach. CNRA, with support from the State Water Resources Control Board, developed a communication plan that addresses those concerns and will help guide future outreach efforts. The State is working with several outreach firms and is developing a social media outreach program.

To provide ample time for public input into this plan, the SSMP will schedule several regional workshops to solicit input from community members and stakeholders, as well as provide necessary time for general public comment. This process will be announced on the program's website http://resources.ca.gov/salton-sea/.

Conclusion

As the Salton Sea shrinks for a variety of reasons, air quality in Riverside, Imperial, and surrounding counties suffers, because particulates small enough to be dangerous to human health are picked up by the wind from the exposed lakebed. Huge populations of resident and migratory birds and other species that use the Salton Sea are also at risk, especially the fish-eating birds that depend upon the fish that will no longer be able to survive in the Salton Sea if it grows increasingly salty. Sustainable habitat and air quality management at the Salton Sea is critical for the protection of public and ecological health, as well as the management of a stable Colorado River supply for California.

This draft Phase I Plan aims to protect public health and wildlife by focusing on the north and south ends of the sea where playa exposure is expected to be greatest, and availability of agricultural return flows facilitate the lowest cost habitat and air quality project development. The draft plan also includes a process for identifying management strategies for implementation in later phases.

As inflows to the Salton Sea decline over the next decade, this 10-year draft plan aims to mitigate harm to communities and ecosystems. The State is committed to leveraging resources, coordinating with a multitude of other agencies, engaging stakeholders, managing adaptively and learning as much as possible from the wildlife habitat and dust suppression projects now, or soon to be, underway.

Appendix A. Figures

Figure A-1 Salton Sea Management Program Overview (2018–2028)

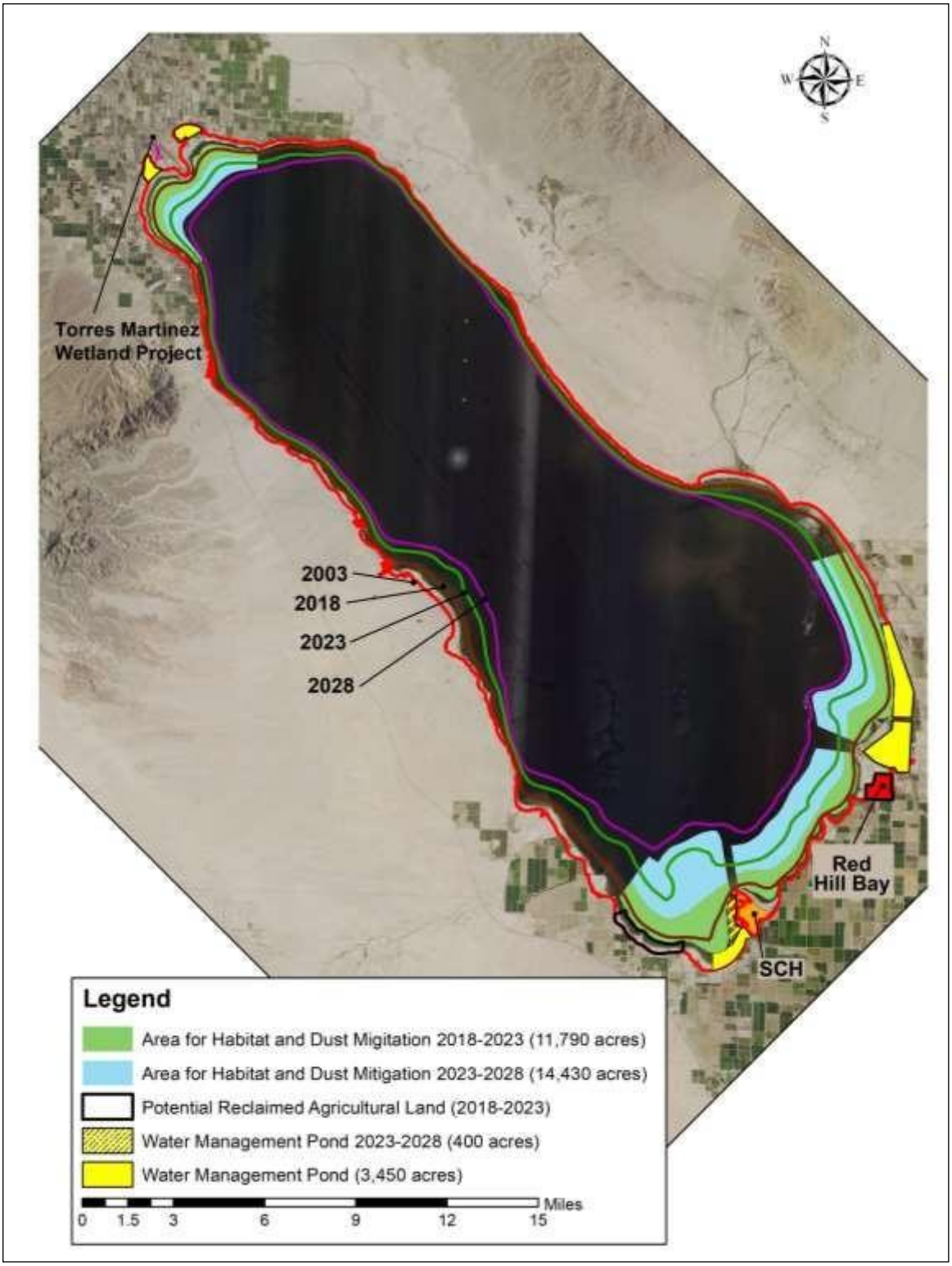


Figure A-2 Berm Configuration

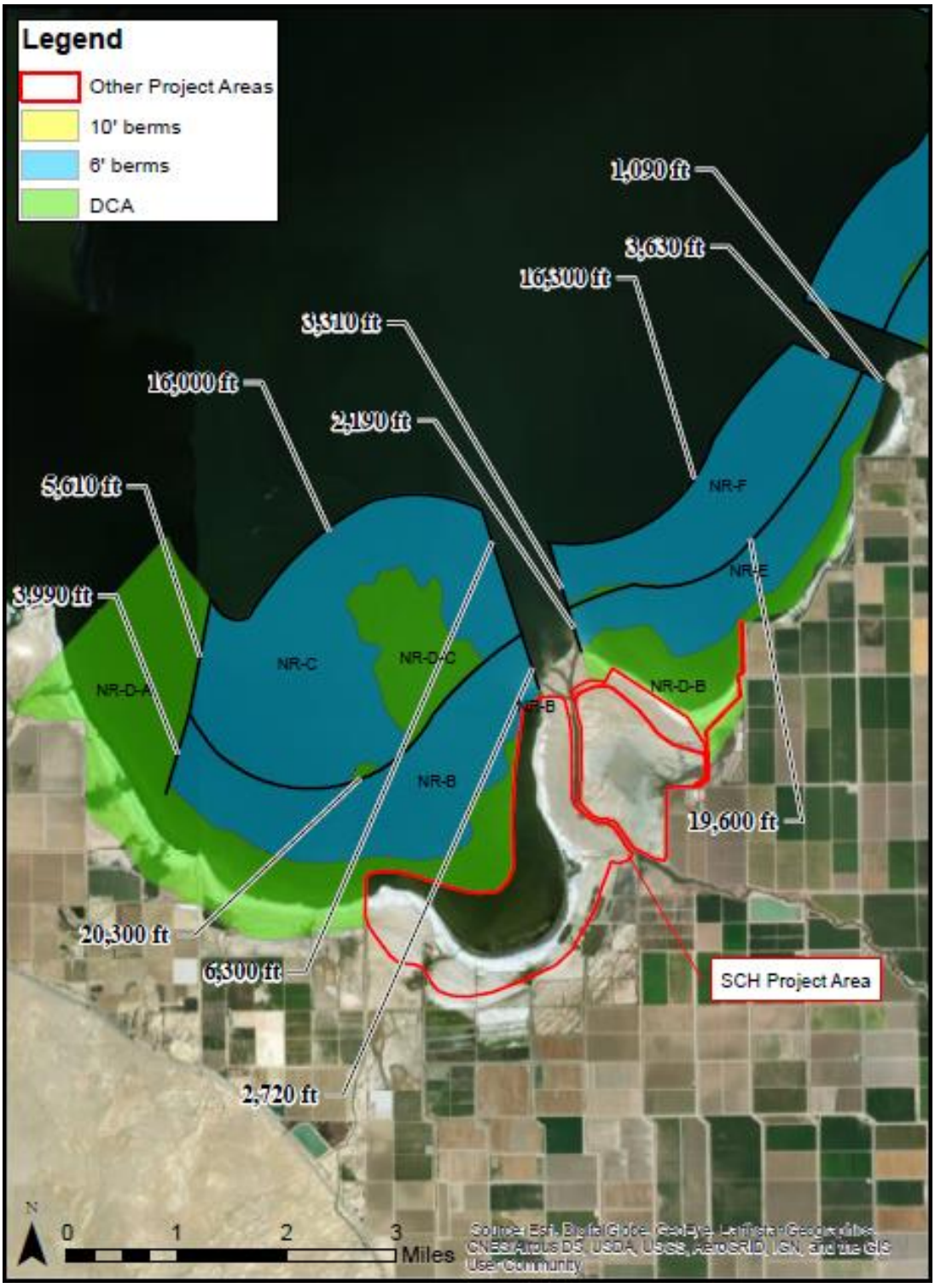


Figure A-3 Berm Configuration for Alamo River

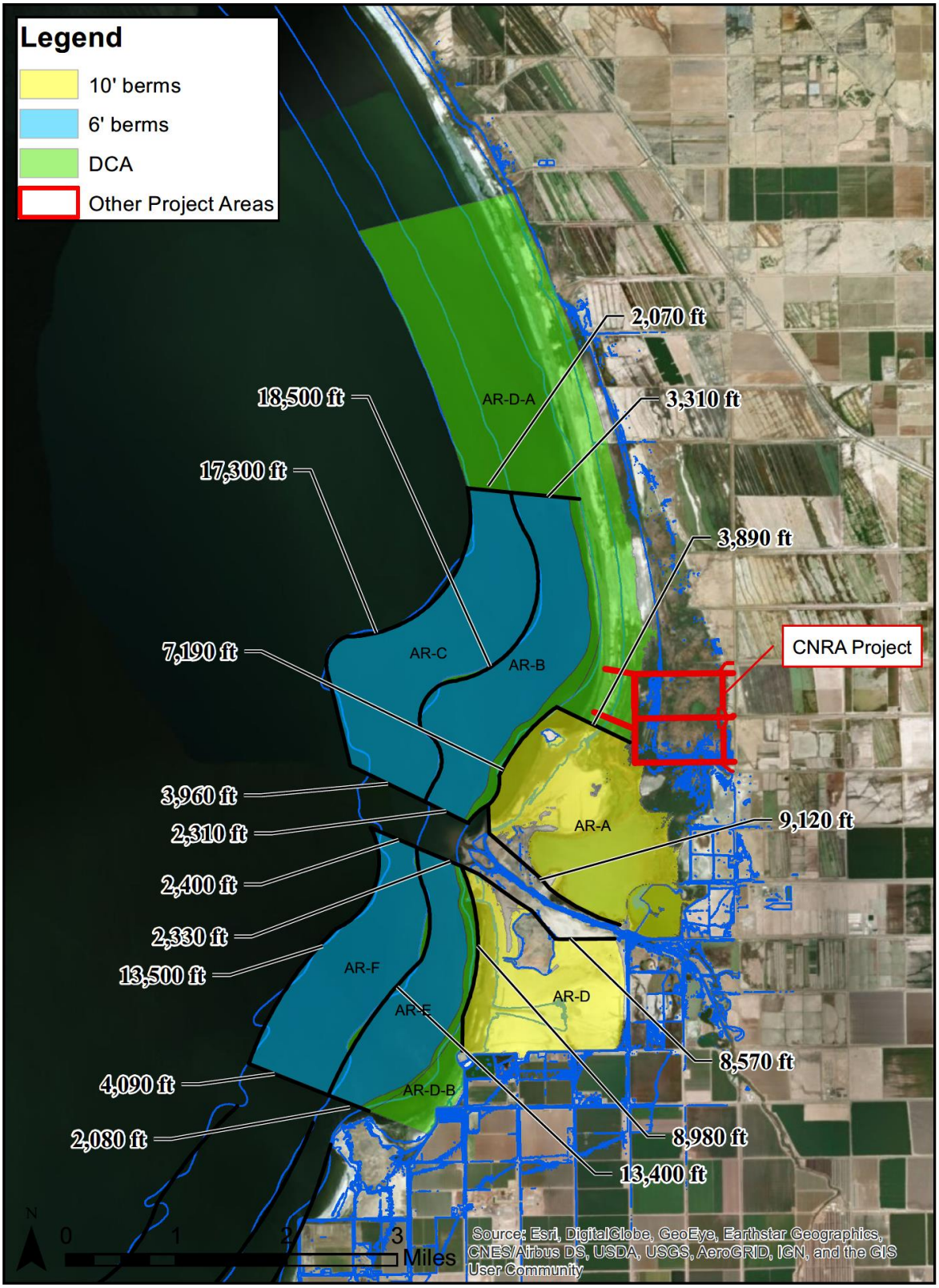


Figure A-4 Berm Configuration for Whitewater River

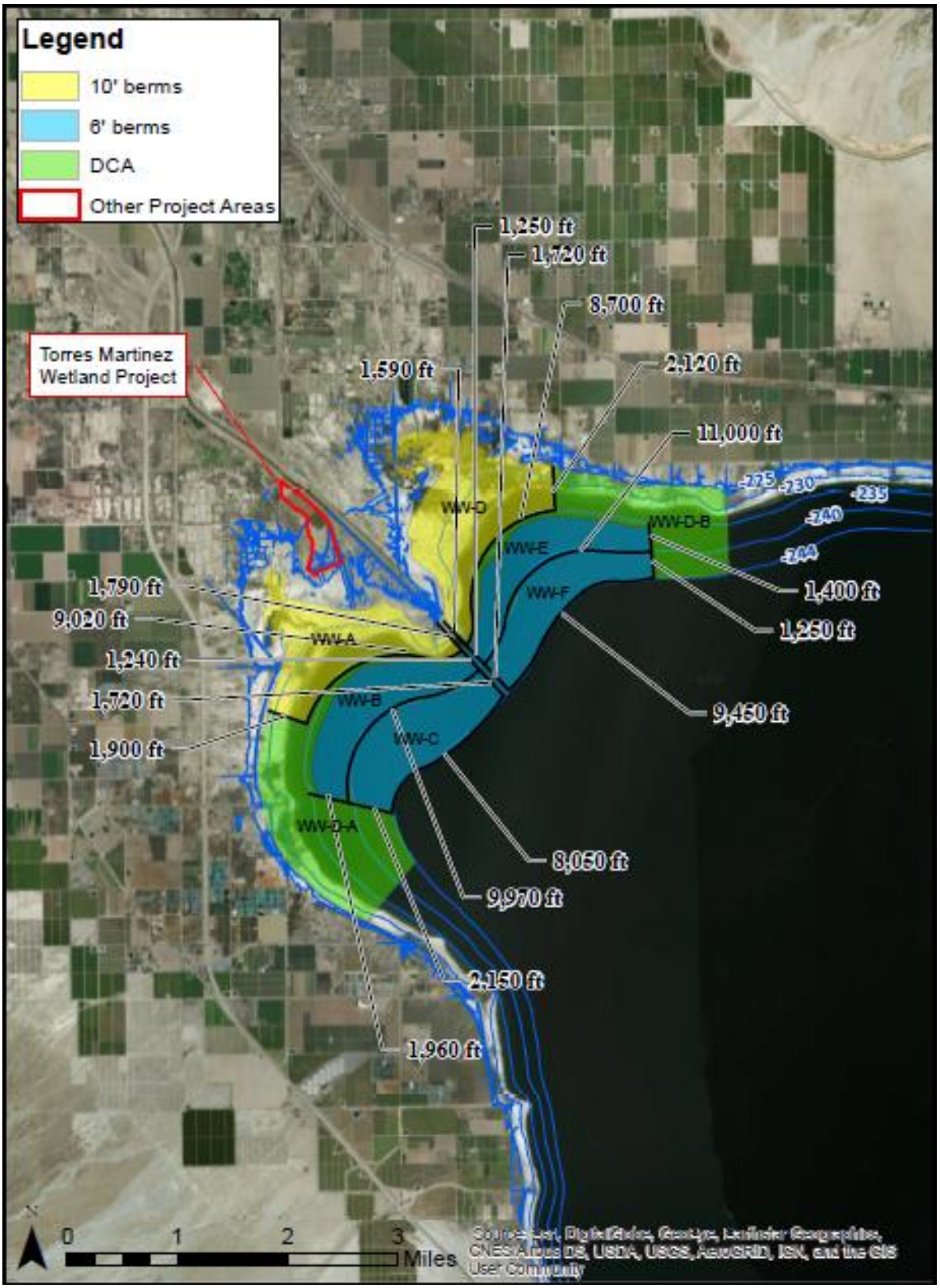


Figure A-5 2020 Initial Berm Cross Section

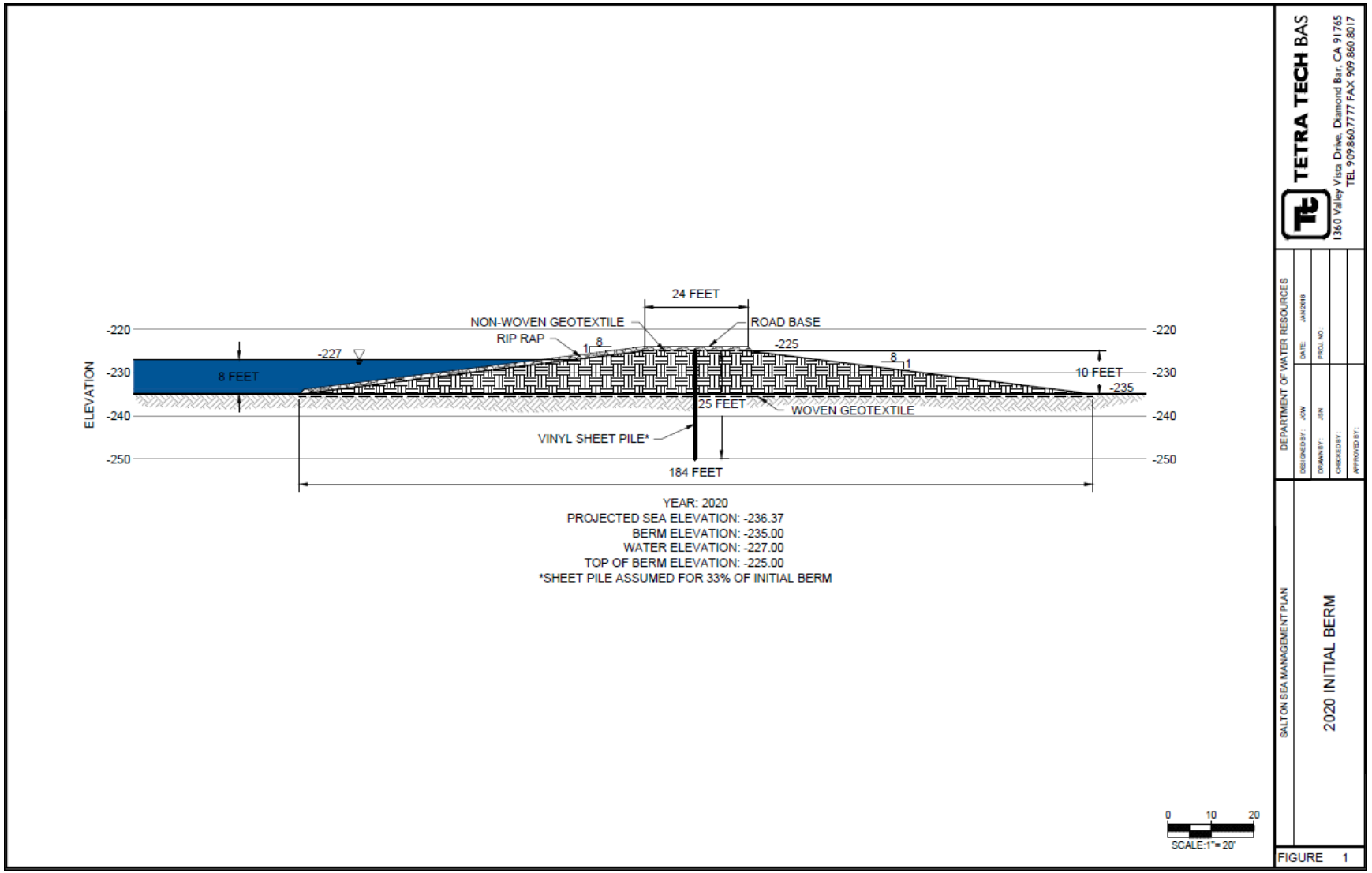


Figure A-6 2023 Middle Berm Cross Section

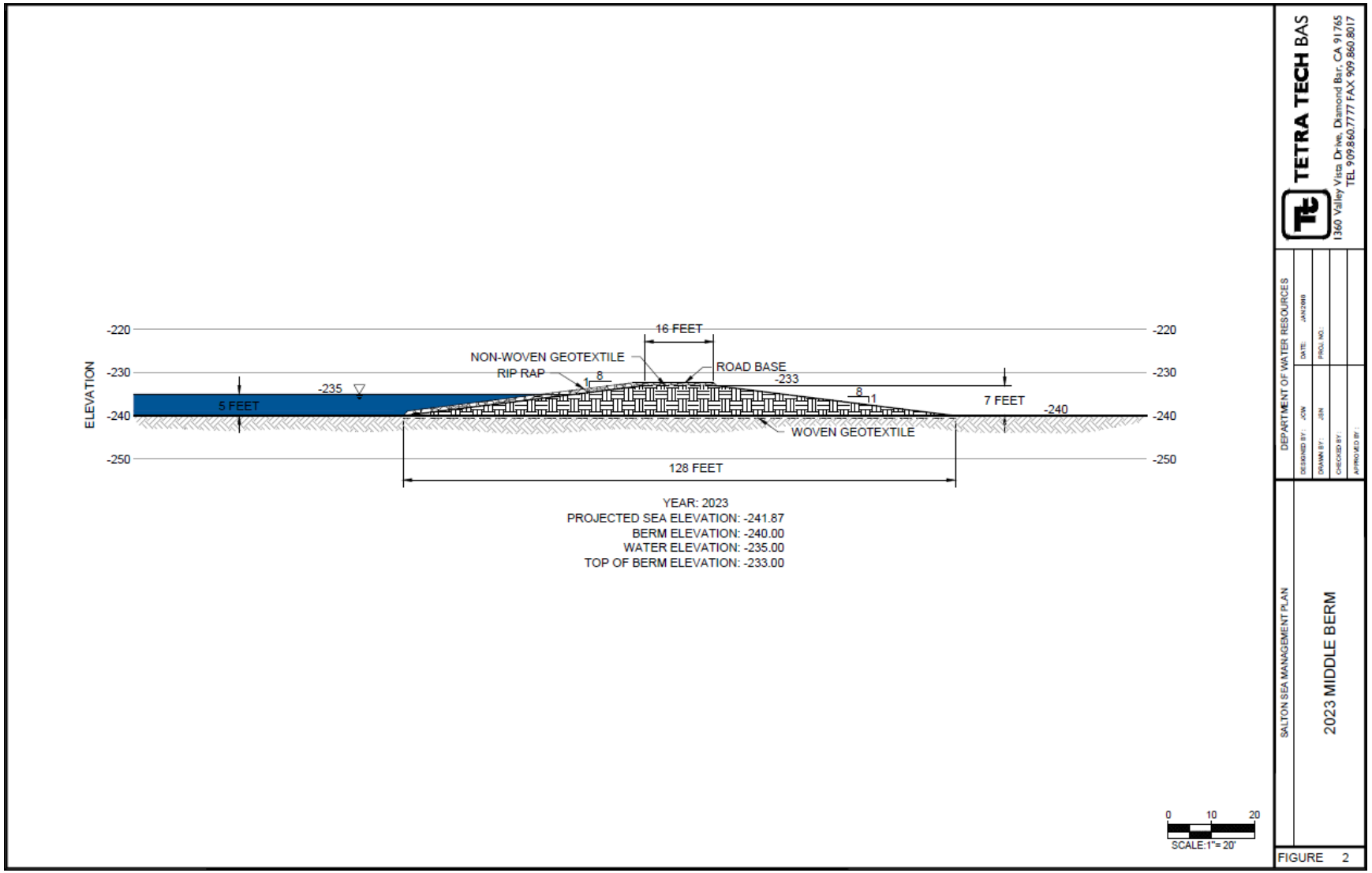


Figure A-7 2027 Lower Berm Cross Section

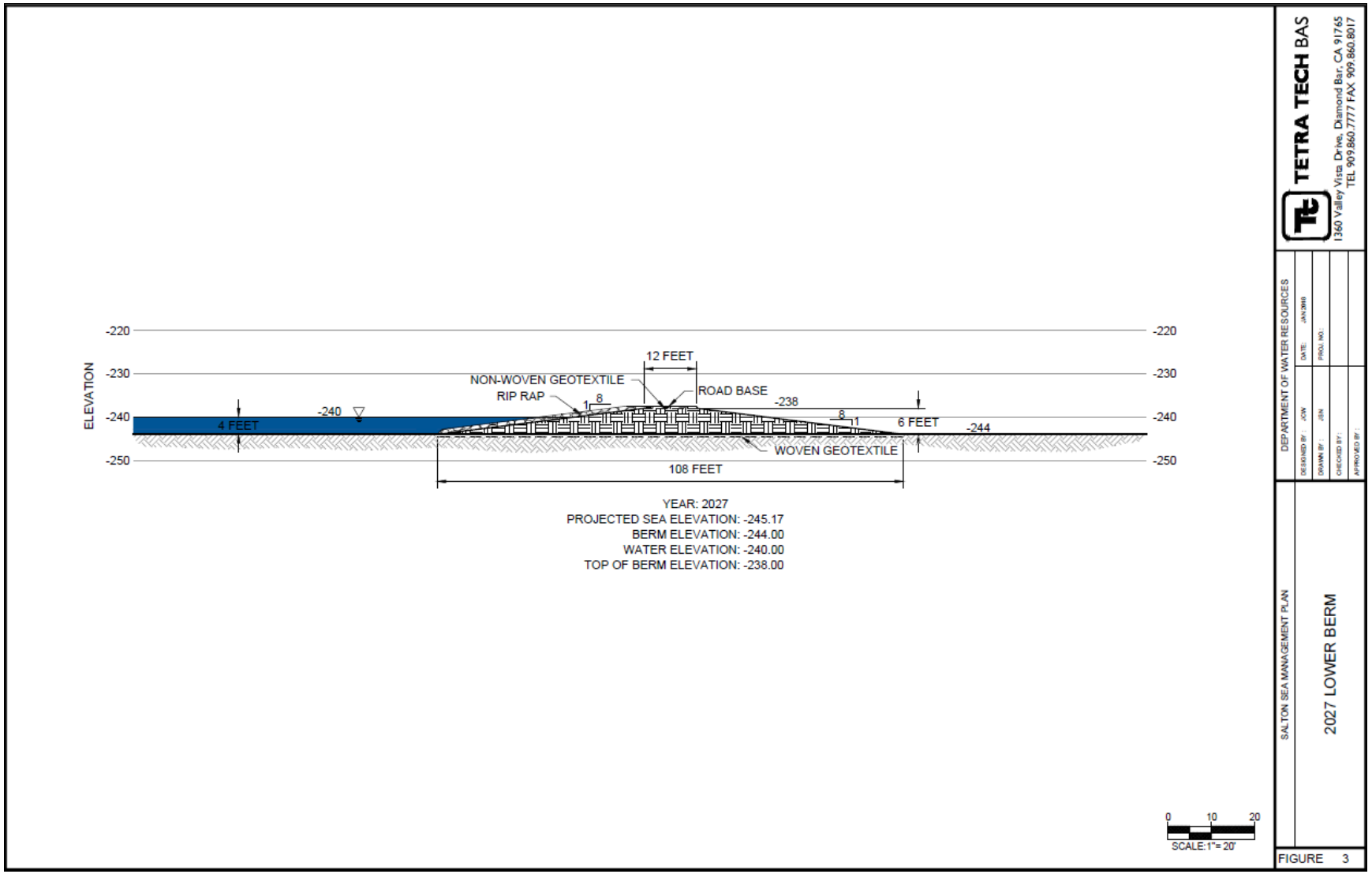


Figure A-8 Causeway Berm Cross Section

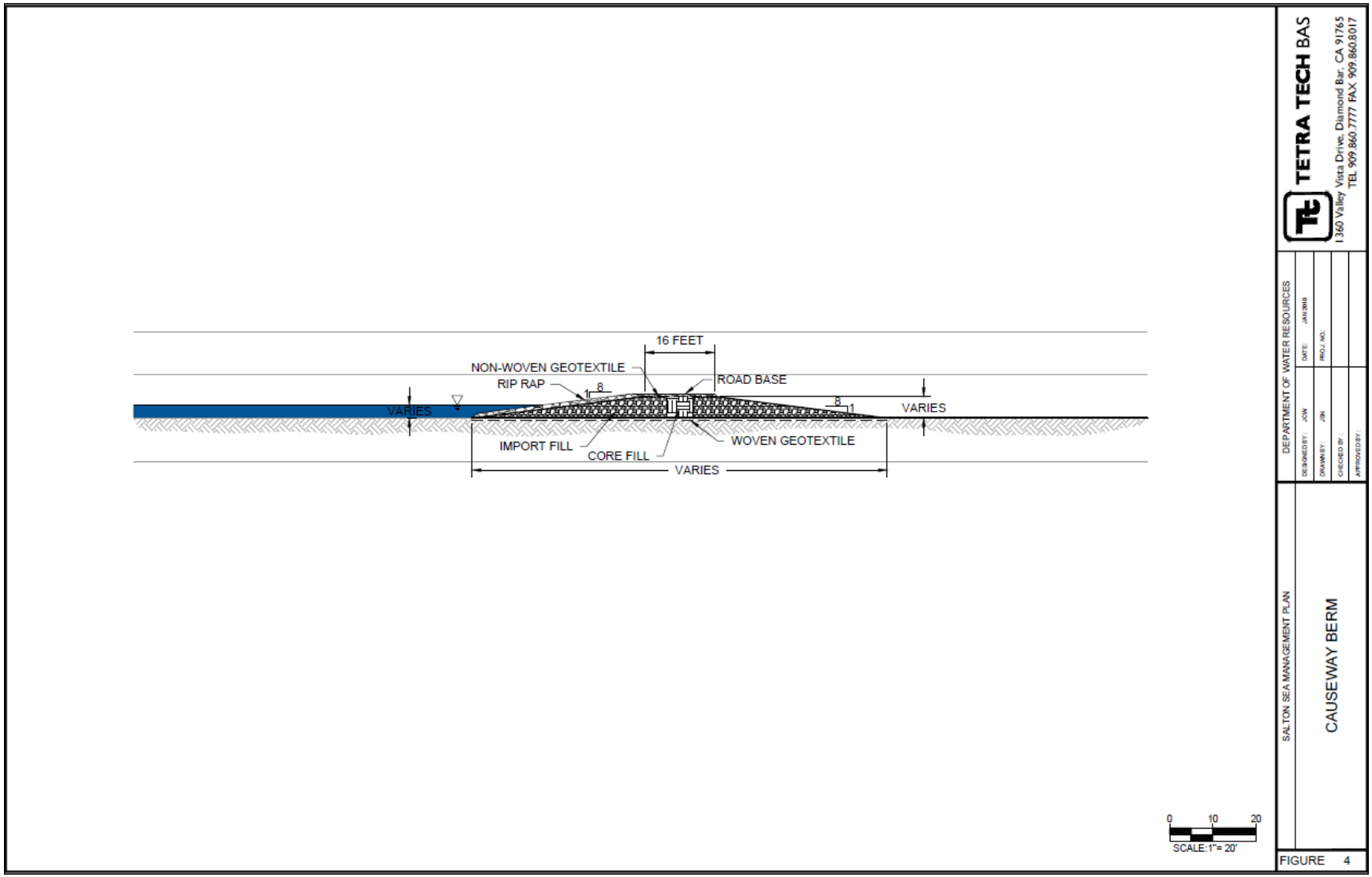


Figure A-9 Diversion Berm Cross Section

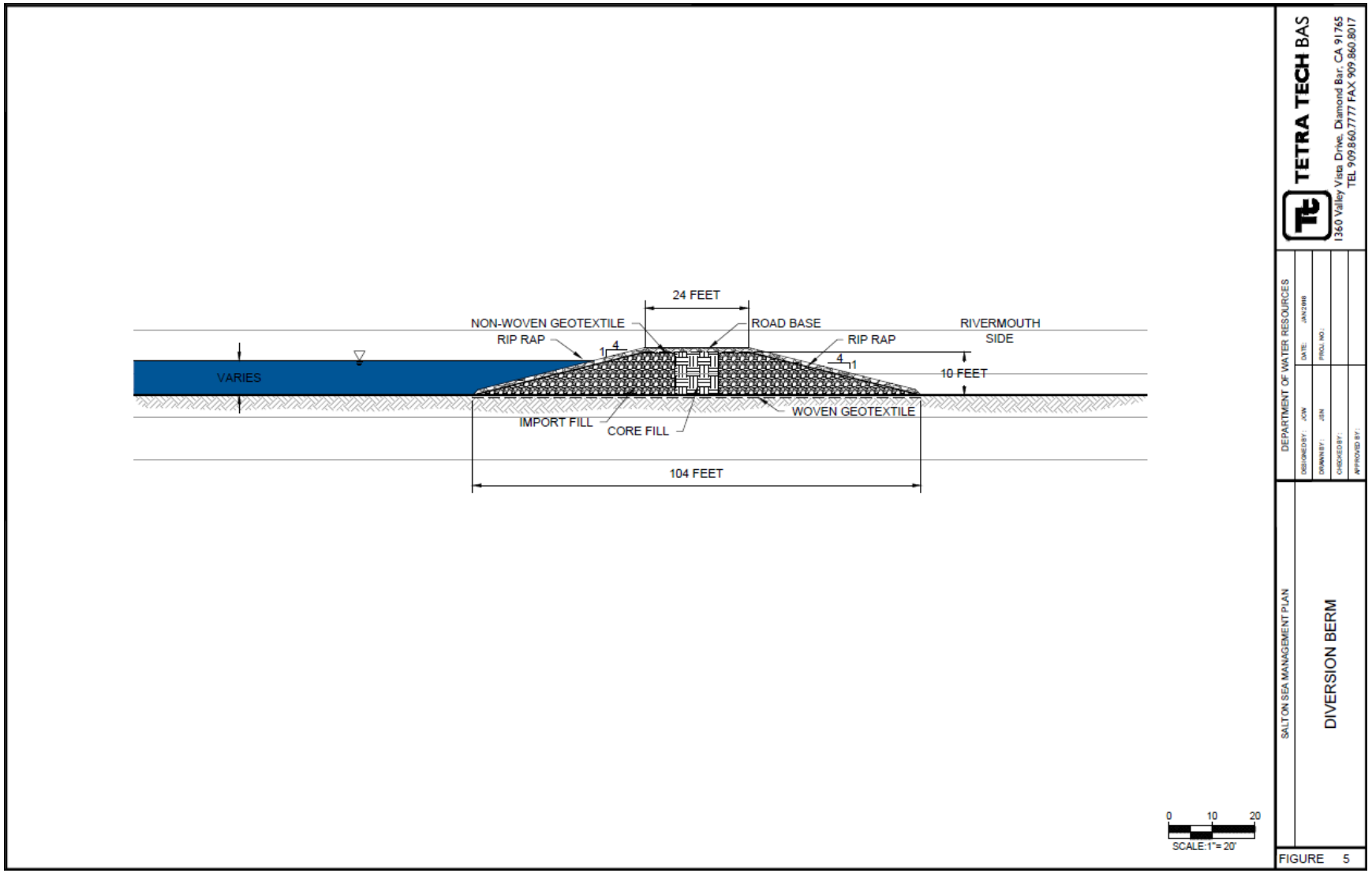
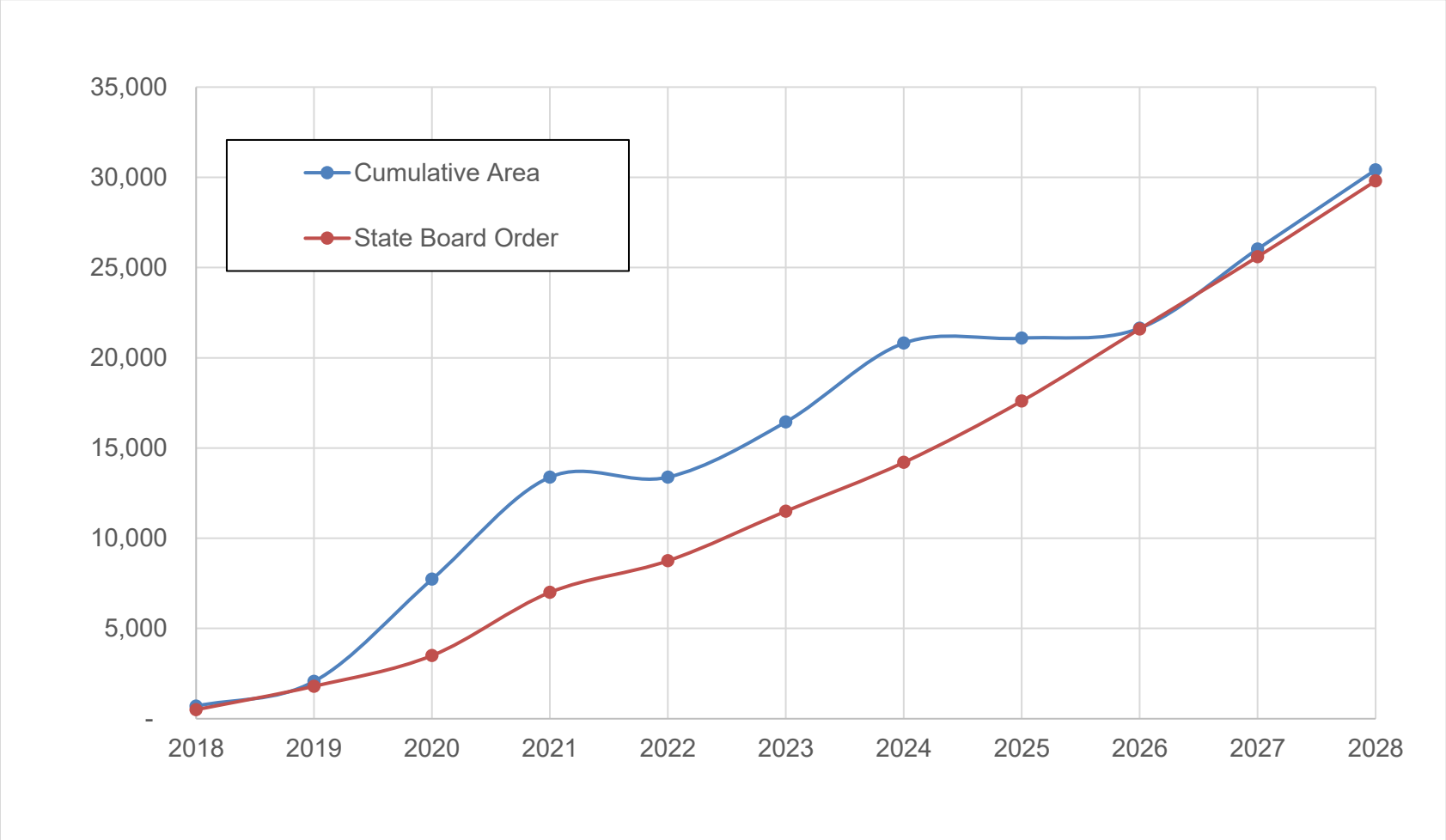


Figure A-10 Cumulative Area of Added Acreage Compared to State Board Order



Appendix B. Cost Projections

Table B-1 Summary of Costs by Year and River Area (in 2017 Dollars)

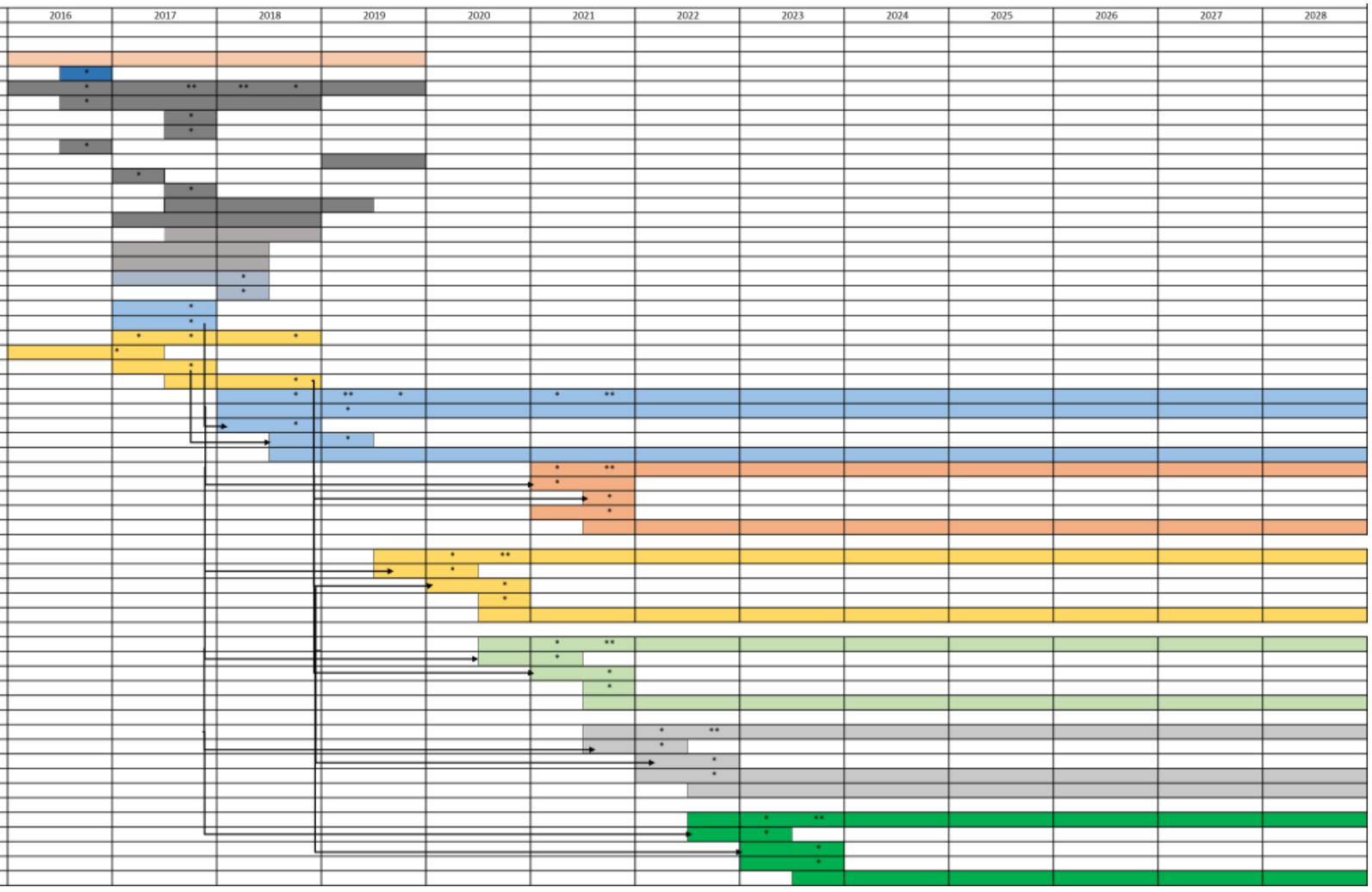
	2018-2019	2020			2023			2027			
	Harbor Areas	**New River***	**Alamo**	**Whitewater**	**New River**	**Alamo**	**Whitewater**	**New River**	**Alamo**	**Whitewater**	**Totals**
Storage Ponds		$0	$21,990,000	$24,100,000	$25,540,000	$20,420,000	$13,420,000	$19,380,000	$18,480,000	$10,500,000	$153,830,000
Causeways		$0	$8,540,000	$2,930,000	$2,080,000	$2,210,000	$1,380,000	$3,790,000	$2,530,000	$1,390,000	$24,850,000
Conveyance		$9,940,000	$12,890,000	$6,390,000	$0	$0	$0	$0	$0	$0	$29,220,000
Extension		$0	$18,750,000	$3,580,000	$7,190,000	$4,920,000	$2,640,000	$10,190,000	$6,740,000	$3,650,000	$57,660,000
Other		$3,640,000	$8,390,000	$6,610,000	$0	$0	$0	$0	$0	$0	$18,640,000
DCA		$17,468,750	$12,562,500	$6,056,250	$3,462,500	$5,781,250	$2,400,000	$6,887,500	$3,725,000	$1,450,000	$59,793,750
Harbor restoration	$ 3,000,000										$3,000,000
Sub-Total	$ 3,000,000	**$31,048,750**	**$83,122,500**	**$49,666,250**	**$38,270,000**	**$33,330,000**	**$19,840,000**	**$40,250,000**	**$31,480,000**	**$16,990,000**	**$346,997,500**
Mob/Demob		$1,860,000	$4,990,000	$2,980,000	$1,910,000	$1,670,000	$990,000	$2,010,000	$1,570,000	$850,000	$18,830,000
Engr Design		$1,860,000	$4,990,000	$2,980,000	$1,150,000	$1,000,000	$600,000	$1,210,000	$940,000	$510,000	$15,240,000
Environ/permit		$1,860,000	$4,990,000	$2,980,000	$1,150,000	$1,000,000	$600,000	$1,210,000	$940,000	$510,000	$15,240,000
Const. Mngmt.		$2,480,000	$6,650,000	$3,970,000	$2,300,000	$2,000,000	$1,190,000	$2,420,000	$1,890,000	$1,020,000	$23,920,000
Sub-Total		**$8,060,000**	**$21,620,000**	**$12,910,000**	**$6,510,000**	**$5,670,000**	**$3,380,000**	**$6,850,000**	**$5,340,000**	**$2,890,000**	$73,230,000
Total	$ 3,000,000	**$39,108,750**	**$104,742,500**	**$62,576,250**	**$44,780,000**	**$39,000,000**	**$23,220,000**	**$47,100,000**	**$36,820,000**	**$19,880,000**	**$420,227,500**
Grand Total	**$ 3,000,000**	**$206,428,000**			**$107,000,000**			**$103,800,000**			**$420,228,000**

Table B-2 Constructed Area in Acres

	Year	New River*		Alamo River		Whitewater River		Redhill + Torrez Martinez	Area by Year	Cumulative Area	Required Area	State Board Order
		Wetted Area	Dust Control Area	Wetted Area	Dust Control Area	Wetted Area	Dust Control Area	Wetted Area				
	2018		699						699	699	500	500
	2019		699		670				1,369	2,068	1300	1,800
2020 Phase w/ Initial Berms	2020	1300	699	1178	670	760	485	568	5,659	7,726	1700	3,500
	2021	1300	699	1178	670	760	485	568	5,659	13,385	3500	7,000
	2022								-	13,385	1750	8,750
2023 Phase w/ Middle berms	2023	1398	277	939		445			3,058	16,443	2750	11,500
	2024	1398	277	939	925	445	384		4,367	20,810	2700	14,200
	2025		276						276	21,085	3400	17,600
	2026		276		199		77		552	21,637	4000	21,600
2027 Phase w/Final Berms	2027	2094	276	1260	199	483	77		4,388	26,025	4000	25,600
	2028	2094	276	1260	199	483	77		4,388	30,413	4200	29,800
Total Area		9583	4451	6753	3531	3374	1585	1136	**30,410**			

Appendix C. Ten-Year Phase I Plan Schedule

	Duration (months)	Start	Finish
Design Planning			
1-Programmatic Planning	48	Jan-16	Jan-20
On call Consultant*	6	Jul-16	Jan-17
a-Design Criteria	48	Jan-16	Jan-20
*Determine Goal**	30	Jun-16	Dec-18
Channel Criteria*	6	Jun-17	Dec-17
Water Impoundment Criteria*	6	Jun-17	Dec-17
Audubon Contract /Habitat criteria*	30	Jun-16	Dec-18
SCH MAMP Implementation (Se, fish habitat, water quality eval)	11	Jan-19	Dec-19
Develop Concept TM Wetland*	6	Jan-17	Jul-17
Finalized Hydro Model*	6	Jun-17	Dec-17
Develop BACM pilot Projects*	13	Jun-17	Jul-18
Define criteria/Coordination with IID air Qual. Pr.	23	Jan-17	Dec-18
b-Develop Evaluation Process for later phases	18	Jun-17	Dec-18
c-Identify Footprint	18	Jan-17	Jul-18
Coordination with Geothermal	18	Jan-17	Jul-18
Coordination with Land Owners	18	Jan-17	Jul-18
Coordinate with lease information with IID	6	Jan-18	Jul-18
2-Select Design Builder	12	Jan-17	Jan-18
Design Build Contractor*	12	Jan-17	Jan-18
3-Acquire Real Estate	24	Jan-17	Jan-19
Acquire Easements SCH*	14	Jan-16	Mar-17
Acquire Easements New River West*	24	Jan-17	Jan-19
Develop Easement process (IID, BLM, Private)*	12	Jan-18	Jan-19
New River West (Water Management Pond + Exposed Playa Treat.)	132	Jan-18	Jan-29
Water Backbone Infrastructure - Management Ponds (2 Ponds)	132	Jan-18	Jan-29
Preliminary Design	12	Jul-18	Jul-19
Final Design	12	Jan-19	Jan-20
Construction	114	Jul-19	Jan-29
Habitat/dust suppression and distribution system	102	Jul-20	Jan-29
Preliminary Design	12	Jan-21	Jan-22
Final Design	6	Jul-21	Jan-22
Permits	12	Jan-21	Jan-22
Construction	90	Jul-21	Jan-29
New River East (Water Management Pond + Exposed Playa Treat.)	114	Jul-19	Jan-29
Preliminary Design	12	Jul-19	Jul-20
Final Design	6	Jan-20	Jul-20
Permits	6	Jul-20	Jan-21
Construction	102	Jul-20	Jan-29
Whitewater River (Water Management Pond + Exposed Playa Treat.)	102	Jul-20	Jan-29
Preliminary Design	12	Jul-20	Jul-21
Final Design	6	Jan-21	Jul-21
Permits	6	Jul-21	Jan-22
Construction	90	Jul-21	Jan-29
Alamo South (Water Management Pond + Exposed Playa Treat.)	90	Jul-21	Jan-29
Preliminary Design/Identify Access for Geothermal	12	Jul-21	Jul-22
Final Design	12	Jan-22	Jan-23
Permits	6	Jul-22	Jan-23
Construction	78	Jul-22	Jan-29
Alamo North (Water Management Pond + Exposed Playa Treat.)	78	Jul-22	Jan-29
Preliminary Design/Identify Access for Geothermal	12	Jul-22	Jul-23
Final Design	12	Jan-23	Jan-24
Permits	6	Jul-23	Jan-24
Construction	66	Jul-23	Jan-29



Appendix D. U.S. Department of the Interior and California Natural Resources Agency Memorandum of Understanding with Amendment

MEMORANDUM OF UNDERSTANDING

BY AND BETWEEN

THE UNITED STATES DEPARTMENT OF THE INTERIOR

AND

THE STATE OF CALIFORNIA NATURAL RESOURCES AGENCY

REGARDING THE COORDINATION OF ACTIVITIES TO MANAGE THE SALTON SEA

I. INTRODUCTION AND BACKGROUND

The Salton Sea (Sea), an endorheic water-body, is California's largest lake and located in Imperial and Riverside Counties. The Sea is the modern incarnation of Lake Cahuilla, a prehistoric, intermittent freshwater sea that filled and evaporated multiple times over thousands of years as the Colorado River (River) meandered on its delta—shifting between emptying into the Gulf of California, or diverting northwest, into the Salton Trough.

In 1905 when the River flood flows breached an inadequate diversion structure (built by what was then the California Development Company), the full might of the River emptied once again into the basin. After 2 years the River's course was engineered back to the Gulf, and left behind was the Salton Sea. In 1924, certain specified lands beneath the Sea were designated a drainage reservoir by Presidential Order. Where the Sea would have evaporated once more, agricultural runoff from the Imperial and Coachella Valleys (with water from the Colorado River) and other sources has maintained its elevation and affected its composition over the last century.

The Sea loses approximately one million acre-feet of water a year to evaporation. Early on, the accumulation of salts and nutrients in the terminal lake, by its sustaining agricultural drainage waters, were acknowledged as a challenge to the future viability of the Sea. From the start, various studies were conducted to assess the issue, but no comprehensive actions were taken. Thirty or more species of sport fish were stocked by the California Department of Fish and Game between 1929 and 1956, and soon the Sea was enjoying more yearly visitors than Yosemite National Park. After a period of developmental boom and recreational success at the Sea, a series of storms and heavy River water use in 1977 and 1978 caused widespread flooding and inundation of seaside developments, and the properties were soon abandoned.

With nearly 90 percent of California's wetlands lost to development, the Sea over the last century has become a vital stop on the Pacific Flyway for millions of birds. A refuge for several endangered species, over 400 bird species have been identified at the Sea. In 1992, an estimated 150,000 eared grebes died at the Sea, and as one of the largest bird die-offs in U.S. history, it brought national attention to the Sea's plight. In 1996 and 1998 there were further die-offs of fish and birds due to large algal blooms that drew oxygen from the waters, killed large numbers of fish, and spread botulism killing fish-feeding birds.

In response to the declines, in 1992 Congress passed the Reclamation Projects Authorization and Adjustment Act (Public Law 102-575) that directed the Secretary of the Interior to "conduct a research project for the development of a method or combination of methods to reduce and control salinity, provide endangered species habitat, enhance fisheries, and protect human recreational values in the area of the Salton Sea." In addition, the Salton Sea Reclamation Act of 1998, (Public Law 105-372), was enacted by Congress and directed the Secretary to "complete studies including, but not limited to, environmental and other reviews of the feasibility and benefit-cost of various options that permit the continued use of the Salton Sea as a reservoir for irrigation drainage…" Congress further required in the Salton Sea Reclamation Act of 1998 that any such studies performed by the Secretary, "shall not include any option that—(i) relies on the importation of any new or additional water from the Colorado River."

In 2003, following years of negotiation and analysis, a number of actions and agreements – often commonly and collectively referred to as the "Quantification Settlement Agreement" (QSA) were adopted. The QSA "settle[d] a variety of long-standing Colorado River disputes regarding the priority, use and transfer of Colorado River water, established the terms for the further distribution of Colorado River water among [Coachella, the Imperial Irrigation District, and Metropolitan] for a period of time. … These conserved water transfers and the [Quantification Settlement Agreement] are critical components of the State's efforts to comply with the California Limitation Act of 1929, Section 4 of the Boulder Canyon Project Act of 1928 and to implement the California Constitutional mandate of Article X, Section 2 (which mandates that 'water be put to reasonable and beneficial use')."

Under the QSA, the State of California agreed to assume responsibility for environmental mitigation requirements in excess of $133 million (in 2003 dollars), the amount that the QSA requires three local water agencies to pay for this purpose. This MOU does not modify the responsibilities of the State of California in this regard.

The California Legislation enacted in 2003 to facilitate the implementation of the QSA required the Secretary of the California Natural Resources Agency, in consultation with other entities, to undertake an ecosystem restoration study to determine a preferred alternative for restoring the Sea ecosystem and permanently protecting the wildlife dependent on it. That preferred alternative was selected in 2007, and came with a cost of $9 billion in 2007 dollars. In the following years, a recession hit, administrations changed, and the plan was subsequently deemed financially infeasible. Instead, the State moved forward with "no regrets" projects around the Sea for air quality and habitat benefits, and commenced development of a comprehensive Salton Sea Management Program.

Recognizing that the QSA only provided mitigation flows for the Sea through 2017, and the need for projects that would acknowledge the current and projected resource conditions at the Sea, the State established the Salton Sea Task Force, by order of the Governor of California, in May 2015. Through the work of the Task Force, the State recognizes that immediate implementation of sustainable habitat and air quality management and mitigation at the Sea through a Salton Sea Management Program is critical for the protection of regional air quality, natural resources at the sea, and the management of a stable River water supply for California. After meetings with key stakeholders, the Task Force identified acreage targets for wildlife habitat, mitigation, and other projects, and found that implementation of a successful Salton Sea Management Program depends on the following three principles: 1) strong Federal, State, and local partnerships; 2) clear and achievable milestones with State-directed plans to achieve them; and 3) committed participation from all stakeholders who share the goals of protecting air quality, reducing habitat impacts, and maintaining a secure Colorado River Water Supply. These three principles are driving State-led decisionmaking on short, medium, and long term plans and projects, and require coordinating all available fiscal and technical resources to deliver them in an expedited manner.

The United States and the State have significant and complementary interests regarding development and enhancement of activities that provide certainty to the Sea, anticipate changes in the Sea's elevation, water quality and associated regional environment, and recognize the multiple values and unique opportunities the Sea embodies in the face of a changing climate, resource constraints, and the need to build resiliency and certainty in affected Tribal and regional communities.

II. PARTIES

This Memorandum of Understanding (MOU) is entered into by and between the United States through the Department of the Interior (DOI), and the State of California, through the California Natural Resources Agency (CNRA), and, hereafter referred to as "the Agencies," and will become effective as of the latest date shown below on the signature page.

The Agencies recognize the unique role and interests of tribal governments, including jurisdiction and decisionmaking, in the future of the Sea. The United States recognizes the United States' trust responsibility to all federally recognized Indian tribes and the duty to engage in meaningful government-to-government consultation prior to any action related to the Sea that impacts a tribe. Future activities to address conditions at the Sea must recognize Federal and State responsibilities to any affected tribes pursuant to applicable law (including settlement acts) and agreements, ensure protection of trust resources, and work in a spirit of partnership with affected Indian tribes.

Though not a party to this MOU, other Federal and State agencies, local governments and agencies, and non-profit, philanthropic, and academic institutions are recognized as potentially having jurisdiction, resources, decisionmaking roles, and common interests at the Sea, and will be essential to include for successful management activities and outcomes at the Sea. The Agencies will coordinate and consult with all of these entities as appropriate to develop specific tasks, timelines, and form subsequent agreements to further future partnership at the Sea.

III. PURPOSE

The Agencies enter into this MOU to ensure that long-term coordination between the Federal and State and Government will be recognized as a priority and will occur in order to facilitate prompt and informed decisionmaking regarding the natural and economic resources of the Sea.

The Agencies recognize that the purpose of this coordination is to facilitate specific, incremental and sequential projects in a timely manner that improve upon air and water quality, existing obligations to Native American communities, fish and wildlife habitat, water security, resource management processes and decisionmaking economic opportunities, and collaboration of scientific research efforts. Coordinating limited resources will be necessary to achieve common goals that address the natural resources and regional interests associated with the Sea.

IV. OBJECTIVES

Recognizing the State's role as lead on Sea management, in line with the findings of the Salton Sea Task Force, and the United States' agreement through this MOU to support the goals and principles of the Salton Sea Management Program (SSMP), and in furtherance of the purpose of this MOU, the Agencies affirm their commitments to undertake the following objectives:

A. In order to facilitate prompt decisionmaking, permitting accountability, and high-level coordination, the Agencies shall each identify at least one senior level policy official to participate in a Salton Sea Working Group (SSWG) tasked with ensuring interagency continuity in Sea management efforts and overseeing the implementation of—and any necessary updates to—this MOU.

B. The Agencies will work together as they coordinate with affected Colorado River Basin States, tribes, and local governments regarding implementation of this MOU.

C. The Agencies recognize that the State has identified a goal of 25,000 acres of wildlife habitat, air and water quality projects, and other projects as necessary to minimize human health and ecosystem impacts at the Sea in the mid-term (through 2025). See "Salton Sea Task Force – Agency Actions" – Attachment 1. The Agencies acknowledge this goal as critical, and a common target to reasonably work toward.

D. The Agencies will undertake an analysis of current Federal and State laws applicable to the Salton Sea to assess existing authorities, identify common objectives, explore opportunities to align authorities that benefit the purpose of this MOU, and inform areas for further coordination.

E. The Agencies will perform a funding analysis that identifies all current Federal and State spending on programs, projects, and studies related to, potentially benefiting, or impacting the Sea. The analysis should also identify opportunities to better coordinate and match existing spending and programs, and provide a foundation for further discussions on the anticipated financial need to reach acreage goals and creative means to meet them.

F. The Agencies will, within existing authorities, perform an analysis of land ownership, any existing Indian settlement obligations, leases, and other land use agreements in the region to facilitate project development and identify necessary coordination between parties to achieve the purpose of this MOU.

G. The Agencies will, within existing authorities, expand and integrate Sea science and monitoring programs to better inform decisionmaking, coordinate investigations, and aid adaptive management of the Sea. The Agencies will also assess the cost benefit of sharing office or other physical spaces in order to reduce the cost of science activities and increase their efficacy.

H. The Agencies will pursue a multi-year partnership with United States Department of Agriculture (USDA) Natural Resources Conservation Service, tribal governments, local agencies, and others, to advance projects to protect air quality and improve water quality of major inflows to Sea habitat.

I. The Agencies shall make every effort to ensure resources are allocated to expedite and prioritize permitting processes at the Sea.

J. The Agencies will explore the feasibility of developing a common decision support system that integrates the analyses called for in this MOU, the existing wealth of studies and data on the Sea, and any additional information necessary, into a single platform that facilitates the work of the Salton Sea Management Program and the purpose of this MOU.

In furtherance of these Objectives, the United States agrees to pursue the following, in accordance with applicable statutes, and to the extent appropriate and consistent with legislative appropriations, approved budgets, and funding opportunities:

1. $20 million to operation and maintenance costs of habitat and dust suppression projects associated with the SSMP;
2. $10 million for State managed monitoring of SSMP projects;
3. Continued USGS scientific and technical support on Sea issues during the implementation of the SSMP;
4. Continued USGS scientific input on, and review of, selenium management measures and target concentrations for selenium in created habitat at Sea;
5. Consideration of a Pilot Project under Phase 2 of the Colorado River Basin Study to continue the ongoing innovative and collaborative efforts underway at the Sea to increase security for California's Colorado River water supplies, consistent with DOI's efforts to increase security for other Basin States' water supplies.

V. GENERAL PROVISIONS

A. This MOU is subject, as applicable, to the laws of the United States of America and the State.

B. Nothing in this Agreement may be construed to obligate the United States or the State to any current of future expenditures in advance of the availability of legislative appropriations. Nor does this agreement obligate the United States or the State to spend funds on any particular project or purpose, even if funds are available.

C. The mission requirements, funding, personnel, and other priorities of the Agencies may affect their ability to fully implement all the provisions identified in this MOU.

D. Specific activities that involve the transfer of money, services, or property between the Agencies will require execution of separate agreements or contracts.

E. Nothing in this MOU is intended to or will be construed to restrict the Agencies from participating in similar activities or arrangements with other public or private agencies, organizations, or individuals.

F. Any information furnished between the Agencies under this MOU may be subject to the Freedom of Information Act, 5 U.S.C. 552, et seq. (FOIA) and the California Public Records Act, Gov. Code 6250, et.seq. (CPRA). The United States and the State agree to consult each other regarding any such relevant requests and prior to releasing potentially privileged or exempt documents, subject to any applicable regulatory, statutory, or judicial timeframe.

G. This MOU is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States or the State; their respective departments, agencies, or entities; their respective officers, employees, or agents; or any other person.

H. The Agencies anticipate consensus implementation of this MOU. In the unforeseen event that any disputes arise between the Agencies, the respective representatives and leadership of DOI and CNRA will work promptly to resolve any such matter.

I. This MOU shall remain in effect for an initial term of 10 years after its effective date and may be renewed if both Parties agree. This MOU may be terminated at any time by mutual consent of both Parties, or unilaterally by either Party after 30-days written notice to the other Party of intent to terminate.

J. Either Party to this MOU will consult with the other party in a timely manner prior to release of any statements for publication or public dissemination that refers to this MOU, to the Parties in connection with this MOU, or the name or title of any employee of the Parties in connection with this MOU.

K. Nothing in this MOU may be interpreted to imply that the United States endorses any product, service or policy of the State. Nothing in this MOU may be interpreted to imply that the State endorses any product, service or policy of the United States. Neither Party will take any action or make any statement that suggests or implies such type of endorsement.

L. The DOI and CNRA may amend or modify this MOU only by agreement of both Parties.

VI. APPROVALS

For the Department of the Interior:

Michael L. Connor
Deputy Secretary

Date: 8/31/16

For the State of California:

John Laird
Secretary for Natural Resources

Date: 8/31/16

Salton Sea Task Force
Agency Actions

The implementation of sustainable habitat and air quality management and mitigation at the Salton Sea through a Salton Sea Management Program is critical for the protection of regional air quality, natural resources at the sea, and the management of a stable Colorado River Supply for California. The Salton Sea Task Force recognizes the contributions of the local leadership, plans, and initiatives that have informed the Task Force process. Following meetings with key stakeholders, the Task Force finds that implementation of a successful Salton Sea Management Program depends on the following three principles: 1) strong state, federal, and local partnerships; 2) clear and achievable milestones with state-directed plans to achieve them; and 3) committed participation from all stakeholders who share the goals of protecting air quality, reducing habitat impacts, and maintaining a secure Colorado River Water Supply. These three factors will drive decision-making on a short- and a medium-term plan while leveraging fiscal and technical resources to deliver projects in an expedited manner.

The Natural Resources Agency will take the following actions over an accelerated timeline:

- **Begin immediate implementation and further development of Salton Sea management plan**
  - The plan will prioritize actions that respond to air quality and natural resources impacts while incorporating opportunities for regional economic development, including recreational and renewable opportunities that benefit implementation of the plan.
  - A science advisory committee will be utilized to provide scientific expertise into plan development.
  - Colorado River stakeholders will be asked to assist with the development of the plan. The Salton Sea Authority and its members will be asked to help facilitate local involvement.

- **Improve public outreach and local partnership**
  - Air quality and environmental impacts of a reduced Salton Sea will be felt foremost by the residents of the region. The state will provide a meaningful public forum to discuss Salton Sea issues locally and to develop future plans and actions.

- **Accelerate project implementation and delivery**
  - The state will work with Salton Sea, Colorado River partners to accelerate planning, state and federal permitting and construction.

- **Meet a short-term goal of 9,000-12,000 acres of habitat creation and dust suppression projects at the sea**
  - Projects to meet short-term goals will be achievable with available funding.
  - Short-term projects will address dust suppression and natural resources needs while laying the foundation for a long-term Salton Sea management framework.
  - Projects will be staged to address the expected progression of playa exposure and designed to provide access corridors for renewable energy development on those lands.

- **Set medium-term goal of 18,000-25,000 acres of habitat creation and dust suppression projects at the sea**
  - Funding plans to meet medium-term goals will need to be developed by the state with Salton Sea and Colorado River partners.

Ensure Oversight by Regulatory Agencies:

- The State Water Resources Control Board will regularly monitor and assess progress on the implementation of the Salton Sea Management Program, including the development of management plans and funding options, and any potential action by the State Board.

- The State Water Resources Control Board will periodically hold public workshops as part of its monitoring and assessment function.

- The State Water Resources Control Board will work with the Colorado River Regional Water Board and the Administration to improve water quality and upstream co-benefits in the New River and the Alamo River.

- The California Air Resources Board will coordinate with local partners to address air quality impacts from the Salton Sea, work with Imperial and South Coast air districts to monitor air quality, and provide technical and scientific expertise to ensure effective mitigation of dust impacts from exposed playa.

Consider opportunities for increasing renewable energy development at and around the Salton Sea:

- As part of the implementation of the Clean Energy and Pollution Reduction Act of 2015 (SB 350), the California Energy Commission and the Public Utilities Commission will evaluate how renewables at and around the Salton Sea will further the goals of the integrated resources plans, including a balanced resource mix and the minimization of localized air pollutants.

- Within the next year, as part of planning to meet the 2030 greenhouse gas goals, the Public Utilities Commission, the Energy Commission and the Independent System Operator will consider renewable energy opportunities at and around the Salton Sea and the region, and any additional transmission that may be needed for the near term or long term.

Addendum to the August 31, 2016, Memorandum of Understanding

By and Between

The United States Department of the Interior

and

The State of California Natural Resources Agency

Regarding

The Coordination of Activities to Manage the Salton Sea

Whereas the Parties to the August 31, 2016, Memorandum of Understanding (MOU) have worked assiduously since its adoption to better identify actions and strategies that can further the purposes of the MOU; and

Whereas the Parties wish to ensure that there is a seamless and continuous effort in furtherance of the goals of the MOU during 2017, given the end of the mitigation flows identified in the 2003 Quantification Settlement Agreement (QSA) agreements, the importance of actions to support implementation of existing Colorado River conservation actions, and additional actions that may be taken in light of the ongoing historic drought on the Colorado River.

Therefore, the Parties find and agree that it is appropriate to supplement the MOU as follows:

1. The State of California (State) will coordinate with the Joint Powers Authority (JPA) parties to develop and implement a plan to facilitate and expedite use of the remainder of the JPA funds on projects to mitigate air quality impacts from emissions in the Salton Sea area resulting from the implementation of the QSA. The State will advocate, through the existing JPA budget process, for a plan that addresses air quality impacts as early as possible, while also maximizing cost-effective use of the funds to accomplish mitigation of air quality impacts. The State will consider strategies that will expend all the JPA funds by December 31, 2025, but such consideration will not foreclose strategies that extend the use of such funds beyond such date if such an approach is found to be more cost-effective and appropriate.

2. The Parties will comply with all applicable requirements of the Federal Clean Air Act and all implementing rules and regulations in connection with potential air quality emissions from Salton Sea playa lands owned or managed by the Parties that are exposed as a result of decline in elevation of the Salton Sea.

3. The State will adjust current targets for air quality and habitat projects at the Salton Sea when hydrology modeling is completed to reflect updated anticipated rates of exposure.

4. The Parties will coordinate on opportunities for renewable energy and economic development in the Salton Sea area as part of the Phase I - 10 year plan.

Signatures

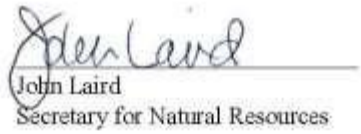
For the Department of the Interior:

_____ _____

Michael L. Connor
Deputy Secretary

Date

For the State of California:



John Laird
Secretary for Natural Resources

January 18, 2017
Date