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Salton Sea Restoration: Can There be Salvation for the Sea?

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Salton Sea Restoration: Can There Be Salvation for the Sea?

Kim Delfino*

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I. INTRODUCTION

Webster’s Dictionary defines “salvation” as “preservation from destruction or failure,” or “deliverance from danger or difficulty.” In light of this definition and the situation currently facing the Salton Sea, it is entirely apropos to frame the discussion regarding the future of the Salton Sea in terms of whether there can be salvation for this body of water.

The future of the Salton Sea currently hangs in the balance. Will the sea continue its slow march towards “death”—which, in this case, would create a

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potential ecological and public health disaster? Or, will the government—in the form of the state, federal or local entities, or some combination thereof—step in with a plan for reversing the decline of the sea?

This article will examine the past and the present condition of the sea, and will discuss the various options for its future. As part of the examination of this future, this article will set forth a preferred vision for the future of the sea. This vision is shared by a collection of interest groups that have come together to advocate for a better future for the sea. This collection—known as the Salton Sea Coalition—is made up of several conservation organizations, hunting and fishing groups, and the two tribes who make their home at or near the sea, the Cabazon Band of Mission Indians and the Torres Martinez Desert Cahuilla Indians.¹

II. THE HISTORY OF THE SALTON SEA

A. *How the Sea was Formed*

Thousands of years ago, the Sea of Cortez, otherwise known as the Gulf of California, extended as far inland as present day Indio, California, with the Colorado River entering the delta near present-day Yuma, Arizona. During the mid-Pleistocene era, sediments from the Colorado Plateau moved down the Colorado River and were deposited into the Colorado River Delta, forming a fan of deposits that extended across the gulf. This formed a barrier that divided the upper and lower gulfs. Over time, this sediment deposition would alter the course of the Colorado River, at times flowing to the lower gulf in the south, and then shifting course to fill the Salton Basin to the north. Between 695 A.D. and 1580 A.D., at least three and possibly four major lakes filled the Salton Basin. One of these lakes was called Lake Cahuilla.²

Historic records indicate that at around the time of California's statehood, the Salton Basin was repeatedly filled with water. In June 1891, the Salton Sea was observed to be thirty miles long, ten miles wide, and approximately six feet deep.

In the fall of 1905, flood waters of the lower Colorado River breached the headgate of a canal, delivering irrigation water to California's Imperial Valley.³ From 1905 until 1907, the entire flow of the Colorado River continued to fill the

1. The Salton Sea Coalition was officially formed on April 22, 2002. The Coalition members include Defenders of Wildlife, Pacific Institute, Sierra Club, Planning and Conservation League, National Wildlife Federation, United Anglers of Southern California, California Waterfowl Association, Center for Biological Diversity, Native American Land Conservancy, San Diegans for the Salton Sea, San Diego Audubon Society, Buena Vista Audubon, La Purisima Audubon, Yosemite Audubon, Los Angeles Audubon, Torres Martinez Desert Cahuilla Indians, Cabazon Band of Mission Indians, Western Outdoor New, and Desert Protective Council.

2. Don Laylander, *The Last Days of Lake Cahuilla: The Elmore Site*, 33 PAC. COAST ARCH. SOCIETY Q. 1, 49 (1997, No.1 & 2).

3. IMPERIAL IRRIGATION DISTRICT, HISTORIC SALTON SEA AND IMPERIAL IRRIGATION DISTRICT 1 (1966).

Salton Basin, resulting in a lake that was forty-five miles in length, seventeen miles in width, and eighty-three feet deep.⁴

B. The Public Trust Values at the Sea

The Salton Sea is an essential resource for migratory birds, supports a thriving fishery, and has exceptional recreational opportunities. As wetlands in California, Mexico—particularly the Mexican Delta—and other parts of the West have disappeared, the Salton Sea ecosystem has become an important habitat for hundreds of bird species, and a critical part of the Pacific Flyway. In California alone, more than ninety percent of the historic wetland habitat has been lost. More than 400 species of birds have been recorded at the Salton Sea—seventy percent of all bird species within California. It is this combination of bird diversity and important feeding and breeding habitat that makes the Salton Sea an essential component in maintaining bird populations.⁵ At times, the sea supports eighty percent of the western American white pelican population. The following statistics only begin to summarize the Salton Sea's importance to North America's bird species:

- 90% or more of North America's population of eared grebes use the sea in some years;
- 40% of North America's endangered Yuma clapper rails breed around the sea; and
- Up to 50% of the world's population of Mountain plovers winter in the Imperial Valley in some years.

The Salton Sea ecosystem is a crown jewel of avian biodiversity that must be sustained for future generations.

The sea also supports an active recreation industry that contributes to the health of the local economy. The wealth of avian biodiversity made the Salton Sea a popular destination for bird-watchers, and inspired an annual bird festival. The abundance of waterfowl also made the sea popular with hunters. The diversity and abundance of birds at the sea are largely due to its productive fishery that includes several popular sportfish, such as Tilapia, Sargo, Corvina, and Bairdella. As recent as the 1990s, more than 400,000 anglers visited the sea annually for sport and subsistence fishing, who are drawn by the estimated 160

4. William P. Blake, *The Cahuilla Basin and Desert of the Colorado*, in DANIEL T. MCDUGAL ET AL., *THE SALTON SEA: A STUDY OF THE GEOGRAPHY, THE GEOLOGY, THE FLORISTICS, AND THE ECOLOGY OF A DESERT BASIN* 5 (1914).

5. It is important to note that while the sea provides important habitat to birds, in recent years, avian die-offs have occurred due to the sea's slowly deteriorating water quality.

million fish that lived in the sea. Other recreation includes boating and other water sports.

However, the Salton Sea is declining due to increasing salinity and poor water quality. The sea is a terminal lake—there is no outlet for the water flowing into the sea—that is mainly sustained by irrigation runoff from the agricultural fields of the Imperial Valley. Thus each year, due to high evaporation rates, the sea becomes more and more saline, and continues to shrink in size. More than 1.3 million acre feet (MAF) of water, which is over 15% of the total volume of the sea, evaporates each year, leaving behind millions of tons of salts, minerals, and nutrients. With this evaporation combined with the salts that are found in the irrigation waters entering the sea, the salinity of the Salton Sea rose from the low levels found in the Colorado River to forty-four parts-per-thousand (ppt) today. In comparison, the ocean's salinity is 35 ppt, and the Great Salt Lake is 280 ppt. At some point in the near future—within the next thirty years (or some might say sooner)—the sea will become too saline to support its current fishery and the birds that rely upon this fishery. In addition, the shrinking size of the sea will result in the loss of important shoreline habitat for numerous bird species.

III. CALIFORNIA'S WATER DIET

In 1928, Congress passed the Boulder Canyon Project Act (“BCPA”) that authorized the construction of Hoover Dam and the All American Canal, which diverts Colorado River water to the Imperial Valley. The BCPA set California's allocation of Colorado River water at 4.4 MAF annually. However, for decades, California diverted in excess of 4.4 MAF and upwards of 5.4 MAF of water, because neither Nevada nor Arizona had the facilities to take their full share of river water.

California's Colorado River Water Use Plan is an ambitious plan for California to reduce its diversions of water from the Colorado River by 600,000-800,000 acre feet of water per year. Under the Federal Interim Surplus Guidelines (“ISG”), California will go on a “water diet” for the next fifteen years, cutting back its use of Colorado River water until it reaches its original allocation of 4.4 MAF per year. Potential beneficiaries of this plan are the other six Colorado River Basin states, the Colorado River Basin's Indian tribes, Mexico, and possibly the long-neglected Colorado River Delta and Gulf of California.

As part of California's Colorado River Water Use Plan, the four major water districts in Southern California, which are the Imperial Irrigation District (“IID”), the Metropolitan Water District (“MWD”), the Coachella Valley Water District (“CVWD”) and the San Diego County Water Authority (“SCDWA”), joined together to implement the Quantification Settlement Agreement (“QSA”), which includes the IID water transfer. The IID water transfer results in the sale and transfer of 300,000 acre-fee water between the IID, the SCDWA and the CVWD.

A. The Effects of the Water Diet on the Salton Sea

For every acre-foot of water transferred from the IID, an acre-foot will be lost at the Salton Sea. At full ramp-up, inflows to the sea will be reduced by approximately 300,000 acre feet, nearly one-quarter of the sea's current inflows. The surface area of the sea will shrink by as much as 50,000 acres.

Unless a restoration plan is put in place, the IID transfer will set in motion a process of rapid ecological collapse at the Salton Sea. The reduction of inflows will greatly increase the rate of salinization at the Salton Sea, with an immediate adverse effect on the fisheries there. Although the Salton Sea's fish are currently stressed by the sea's salinity, it is estimated that the sea could support fish for many years if inflows remain constant.

With the decline of the fisheries and the shrinking of the sea, there will inevitably be a drastic decline in the astounding bird populations at the sea, including the white pelican, brown pelican, black skimmer, and other fish-eating birds. In addition, those birds that do not depend on fish for sustenance may encounter difficulties as the conditions for invertebrates at a hypersaline Salton Sea will differ substantially from those at Mono Lake, which sustains large numbers of invertebrates and invertebrate-eating birds. Furthermore, the shrinking of the sea will result in the loss of brooding, roosting, and foraging habitat for a number of bird species.

The decline of the sea as a natural resource will also mean its decline as a recreational resource. Not only will the decline of the fishery mean fewer anglers, but also a shrinking sea will become less attractive to other recreational visitors—the campers who currently enjoy the seaside campsites, and the sightseers who admire some of the most beautiful vistas and spectacular sunsets in the California desert.

However, impacts from the IID water transfer proposal are not confined to the Salton Sea. According to the California Colorado River Basin Regional Water Quality Control Board, selenium will be concentrated within IID's drains as runoff from the fields decrease, and those increased concentrations of selenium will pose a hazard to whatever wildlife remains or inhabits a restored sea and the drains in the Imperial Valley. In addition, exposed seabed could cause dust emissions in both the Imperial and Coachella Valleys comparable to those at Owens Lake, creating an environmental disaster in an area that is already plagued with serious air quality issues. The mitigation that will inevitably be required for air quality problems of this magnitude could cost hundreds of millions of dollars.⁶ Thus, it is not only the environment of the Salton Sea that is

6. See *Air Quality Issues in the Coachella Valley: Hearing Before the Subcomm. on Energy and Air Quality of the H. Comm. on Energy and Commerce, 108th Cong. (2004)* (citing statement of Ted Schade before the State Water Resources Control Board, where he announced that Los Angeles officials estimate the Owens Lake mitigation project will cost \$415 million to construct and \$10 million per year to operate).

threatened by the transfer, but also the environment of the Imperial and Coachella Valleys.

IV. THE ROAD TO A DEAL TO RESTORE THE SEA

During the last weeks of the Legislative Session in August 2001, Mary Nichols, the California Resources Secretary, convened a few meetings of interested parties to discuss pending legislation involving the proposed IID water transfer. The legislation sought to exempt the water transfer from the California Endangered Species Act, and the fully protected species provisions in the Fish and Game Code.⁷ The water agencies argued that this legislation was needed in order to move the water transfer forward quickly enough to meet the December 31, 2002, deadline set forth in the ISG. If the ISG deadline was not met, California would be immediately reduced down to its original allocation of 4.4 MAF. Not too surprisingly, the conservation community rejected the request to exempt the IID transfer from state environmental law.

For the rest of 2001 and early 2002, the water agencies moved forward in preparing their environmental documents, and shifted their attention to the State Water Resources Control Board (“SWRCB”). On February 5, 2002, the SWRCB issued a Notice of Public Hearing, requiring all interested parties to file a notice of intent to appear and designate witnesses. From April 22, 2002, through July 16, 2002, the SWRCB held fifteen days of public hearings. Defenders of Wildlife, Audubon, and other concerned organizations participated in these hearings.

On September 26, 2002, the SWRCB issued a draft order in which the board acknowledged the impacts of the water transfer on the Salton Sea ecosystem. Unfortunately, the SWRCB only provided a fifteen year window in which the sea would experience no harm from the transfer. The board finalized its order on December 20, 2002, and issued a Notice of Determination, pursuant to the California Environmental Quality Act, on December 24, 2002.

Despite the water board’s ruling, the water transfer was not finalized by the end of 2002 due to issues raised within the Imperial Valley over how the IID was going to hold the sea harmless for the first fifteen years of the water transfer. Once California failed to meet its deadline, the Secretary of the Interior moved to cut back California’s 2003 water allocation by 600,000 acre-feet.

In early 2003, the water agencies and the Davis Administration turned their attention to a legislative solution to satisfy all of the parties involved in the water transfer. After more than nine months of intense negotiations, a package of three bills was signed by Governor Davis at the end of September 2003.

7. See, e.g., CAL. FISH & GAME CODE § 3511 (providing full protection for a number of species).

The three bills were Senate Bill (“SB”) 277,⁸ SB 317,⁹ and SB 654.¹⁰ As a package, these bills would protect the Salton Sea for the next fifteen years by requiring that the IID provide mitigation water to the sea so that there was no material increase in salinity for the next fifteen years. As part of this deal, the state also agreed to assume full liability for impacts at the sea if a restoration plan fails.

SB 277¹¹ created the Salton Sea Restoration Act, which states that the restoration shall be based on a preferred alternative developed by a restoration study.¹² The preferred alternative shall provide the *maximum feasible attainment* of the following objectives:

- Restoration of long-term stable aquatic and shoreline habitat for the historic levels and diversity of fish and wildlife that depend on the Salton Sea;
- Elimination of air quality impacts from the restoration projects; and
- Protection of water quality.¹³

SB 317¹⁴ sets forth the restoration study process. The Secretary of Resources, in consultation with the Department of Fish and Game (“DFG”), Department of Water Resources (“DWR”), Salton Sea Authority (“SSA”), appropriate air quality districts, and the Salton Sea Advisory Committee (“SSAC”), shall undertake a restoration planning process to determine a preferred alternative for the restoration of the Salton Sea ecosystem and the protection of wildlife dependent on that ecosystem.¹⁵ The DWR is the lead agency in the restoration effort on behalf of the Secretary of Resources. Twenty million dollars of Proposition 50 funding was allocated to the DWR to pay for this planning process.

The restoration study shall be conducted pursuant to a process, with deadlines for release of the report and programmatic environmental documents established by the Secretary of Resources, in consultation with the DWR, the DFG, the SSA, and the SSAC. The study identifying a preferred alternative must be submitted to the Legislature on or before December 31, 2006.¹⁶

8. S.B. 277, 2003 Leg., Reg. Sess. (Cal. 2003).

9. S.B. 317, 2003 Leg., Reg. Sess. (Cal. 2003).

10. S.B. 654, 2003 Leg., Reg. Sess. (Cal. 2003).

11. S.B. 277, 2003 Leg., Reg. Sess. (Cal. 2003).

12. CAL. FISH & GAME CODE § 2931(b).

13. *Id.* § 2931(c).

14. S.B. 317, 2003 Leg., Reg. Sess. (Cal. 2003).

15. CAL. FISH & GAME CODE § 2081.7(e).

16. *Id.* § 2081.7(e)(2)(B)(3).

The restoration study shall establish all of the following:

- An evaluation of suggested criteria for the selection of alternatives that will allow for the consideration of a range of alternatives including, *but not limited to*:
 - An alternative design to sustain avian biodiversity at the Salton Sea, but not maintain elevation for the whole sea;
 - An alternative to maintain salinity at or below current conditions and elevation near 230 feet below mean sea level under a variety of inflow conditions; and
 - A most cost effective technical alternative.
- An evaluation of the magnitude and practicality of costs of construction, operation, and maintenance of each alternative evaluated.
- A recommended plan for the use or transfer of water to be sold to generate revenue for the restoration project. This water shall not be transferred unless it is found to be consistent with the preferred alternative for Salton Sea restoration.
- The preferred alternative must be consistent with section 2931 (the restoration plan goals discussed above) and must include a funding plan to implement the preferred alternative.¹⁷

The SSAC, which must be consulted through all stages of the alternative selection process, shall be selected to provide a balanced representation of the following interests:¹⁸

- Agriculture;
- Local governments;
- Conservation groups;
- Tribal governments;
- Recreational users;
- Water agencies; and
- Air pollution control districts.¹⁹

17. *Id.* § 2081.7(e)(2).

18. There is no limit on the number of members.

19. CAL. FISH & GAME CODE § 2081.7(e)(4)(A).

SB 654 made certain findings regarding how this transfer satisfied the California Water Code, and it set forth the various schemes for funding the restoration of the sea. The amount of funding that is potentially available for restoration of the sea nearly totaled \$300 million.

A. The Restoration Planning Process

The restoration planning process began in early 2004 with the establishment of the SSAC, followed by a public scoping process. During the next two years, the state will be preparing a programmatic environmental document, pursuant to California Environmental Quality Act and the National Environmental Policy Act, which will be submitted to the Legislature at the end of 2006. The final document will include a preferred alternative.

Currently, the state is in the middle of defining the study area and the baseline conditions at the sea. Determining the baseline involves calculating the existing flow to the sea and identifying data gaps. The state is also developing a "no-action alternative," identifying conceptual alternatives, and formulating screening criteria against which it will assess alternatives. The screening criteria discussion generated a significant debate among the interested parties and the state over what should be the reasonable range of potential flow against which to assess the alternatives. There is significant debate as to whether the state should be looking at a flow level below that identified in the QSA. Once these issues are resolved, the next steps will include conducting an impact assessment, identifying mitigation measures, and conducting a cumulative impacts analysis. The Resources Secretary will ask the SSAC to advise him as to which of the proposed alternatives should be the preferred alternative for restoration.

B. What is Restoration?

Sometime in 2005 or early 2006, the SSAC and the public will be confronted with the question of what would constitute restoration at the Salton Sea. Not surprisingly, there are a variety of definitions depending upon which interest you represent. If you represent a Southern California water agency, restoration of the sea would likely entail managing the declining sea to maximize future transfers of water from the Imperial Valley. This type of "management" would probably result in the death of the sea, as the sea has become an impediment to water transfers due to the public trust benefits it provides. Without a viable sea, there is less of a legal, political, or environmental argument against transfers.

For the local communities surrounding the sea, restoration of the sea would include significant economic development to revitalize an economically depressed area. This would require creating a sea with features that would attract builders along with home-buyers and vacationers.

For the conservation community, restoration of the sea would include improving the sea as a resource for fish and wildlife, and addressing many of the

public health issues associated with the sea and its tributaries, including improving water quality and ensuring no impact to air quality.

C. The Salton Sea Coalition's Restoration Vision²⁰

The Salton Sea Coalition encouraged the DWR to select a feasible alternative that satisfies the fish and wildlife, air quality, and water quality objectives of the implementing legislation, and also identifies potential recreational and economic development opportunities that could be implemented by other state or local agencies. The state's implementing legislation does not preclude consideration of recreation or economic development in the selection of a preferred alternative. Although these issues are beyond the authority of the lead agencies, other state and local agencies, including the Department of Parks and Recreation and the SSA, have a clear interest in promoting these values at and around the Salton Sea. The coalition urged the lead agencies to collaborate with state and local agencies, and to incorporate appropriate recreational and economic development elements into Salton Sea ecosystem restoration alternatives. Incorporating these elements into the project design, rather than forcing the other agencies to adjust their plans after the project has been selected, will generate a more robust plan that can enjoy broader public support. The Legislature may then choose to fund these project elements from other sources with the benefit of a more comprehensive plan.

The Salton Sea Coalition is encouraging the lead agencies to address air quality concerns at and around the Salton Sea. Air quality in the Salton Sea area already violates national and state ambient air quality standards. The exposure of additional lakebed due to decreased inflows to the sea will very likely exacerbate current conditions. One of the objectives noted in the Notice of Preparation ("NOP") is the "[e]limination of air quality impacts from restoration projects."²¹ The lead agencies should read this objective broadly, and not only act to mitigate direct air quality impacts arising from project construction. The coalition urged the DWR to proactively work with the Air Resources Board and the local air quality districts to address the current and likely future air quality problems in the project area. Although air quality issues lie beyond the purview of the lead agencies, California ultimately will bear fiscal responsibility for the impacts of the QSA-related water transfers; from a state-wide perspective, it makes sense for the lead agencies to address these broader issues up front, rather than waiting for other California agencies to address them after human health in the area is

20. The coalition defined restoration in broad terms in order to maintain agreement within the coalition. There is no agreement at this time as to how these restoration goals will be achieved (e.g., what is the preferred design).

21. CAL. DEPT OF FISH & GAME, NOTICE OF PREPARATION OF A PROGRAMMATIC ENVIRONMENTAL IMPACT FOR THE RESTORATION OF THE SALTON SEA ECOSYSTEM AND PRESERVATION OF ITS FISH AND WILDLIFE RESOURCES (2004) (on file with Pacific McGeorge Global Business & Development Law Journal).

affected. Air quality agencies should be full partners in the development and evaluation of potential alternatives; the lead agencies must not wait to consult them until after alternatives have already been developed. The construction of air quality monitoring stations, and conducting on-site emissivity tests for exposed lakebed will provide necessary data for understanding actual conditions at the sea. These tests and monitoring should be coordinated with the Air Resources Board and California EPA as soon as possible. Protecting and improving human health, as well as avian health, will be a deciding factor in the evaluation of any alternative.

The coalition is also advocating for a broad vision regarding project financing. There is the distinct possibility that the DWR will limit its range of alternatives to those that can be funded by the \$300 million Salton Sea Restoration Fund established by SB 317. Nowhere does the implementing legislation constrain the project to this funding. The innovative funding mechanism authorized by SB 317 offers initial funding for a restoration project that is based on the important principle of “beneficiary pays.” It in no way purports to be the sole source of funding for any such project. Indeed, SB 317 specifically directs the Secretary of the Resources Agency to pursue federal participation in the restoration of the Salton Sea. SB 277 provides that the restoration of the Salton Sea ecosystem shall use the funds “in the Salton Sea Restoration Fund *and other funds made available by the Legislature and the federal government.*”²² It is unreasonable to assume that additional state or federal appropriations, or state bond funds, will not be available once a feasible alternative has been identified. The lead agencies should not limit the Programmatic Environmental Impact Report (“PEIR”) by excluding reasonable alternatives that would exceed some arbitrary cost threshold.

The NOP offered the following geographic scope: “The restoration program area includes the Salton Sea and lower Colorado River ecosystems, including the Colorado River Delta in Mexico,” and a map of the “General Project Area” (titled Figure 1, depicting most or all of Imperial, Riverside, and San Diego counties, as well as parts of Arizona, Baja California, and Sonora). Many of the birds found at and around the Salton Sea only use it for part of their daily or annual activities. Many species forage in the surrounding fields, returning to the sea at night. The sea’s ecosystem extends well beyond the existing shoreline to encompass the varied built and natural habitats in the area. The PEIR should clearly describe and define these varied habitats, as well as the potential impacts that would result from alterations in the sea’s extent, water quality (such as salinity, nutrient concentrations, selenium concentration, and temperature), and biota. Additionally, the DWR should develop a more informative map depicting the general project area.

22. S.B. 277, 2003 Leg., Reg. Sess. (Cal. 2003) (emphasis added).

The Salton Sea Coalition strongly believes that the conservation measures necessary to protect the fish and wildlife species dependent on the Salton Sea should be implemented at and around the Salton Sea. The coalition strongly opposes a preferred alternative that would spend funds from the Salton Sea Restoration Fund on activities covered by the Lower Colorado River Multi-Species Conservation Program.

The coalition urged the DWR to develop specific performance standards or objectives for this project, beyond the general objectives set forth by the Legislature. These standards or objectives include:

- The restoration plan must ensure that the Salton Sea ecosystem continues to support the diversity and comparable population size of bird species. In addition, the restoration plan should provide for improved conditions for bird species, including addressing causes of bird disease;
- The Salton Sea ecosystem must support a thriving and sustainable fishery, as well as provide habitat for the endangered pupfish;
- The Salton Sea ecosystem must continue to maintain its exceptional recreational opportunities, including birding, hunting, and fishing;
- The restoration plan must be consistent with a thriving agricultural economy in the Imperial and Coachella Valleys;
- The restoration plan must address water quality issues at the sea and in its tributaries, and should build upon current total maximum daily load efforts;
- The restoration plan should not contribute to any decline in air quality in the Imperial and Coachella Valleys; and
- The restoration plan should attempt to leverage opportunities for providing economic stability for the communities in the Salton Sea ecosystem.

D. Challenges to Restoration

There are a number of significant challenges to the restoration of the sea, including the security of the existing flow of Colorado River water to the sea, political pressures, scientific uncertainty, lack of funding, and lack of time.

1. Certainty of Existing Flow

As discussed above, there is a debate occurring over the issue of what would be the expected amount of flow to the Salton Sea during the life of this project (i.e., forty-five years). This debate centers around two issues. The first issue is whether the baseline flow set forth in the original transfer documents accurately described the amount of water expected to be flowing to the sea. This was a significant issue in the SWRCB hearing. There are likely decreases to occur due to events in Mexico. In addition, global climate change could also affect flow. As part of this debate, there are some who argue that we should also expect future water transfers, and thus should design the project to be able to withstand that future decrease. For example, the IID water transfer documents state that the sea should be receiving approximately 800,000 acre-feet annually. However, the DWR asserts that the project should be designed to accommodate flows down to 500,000 acre-feet.

The problem with DWR's argument is that it is essentially trying to bootstrap another transfer onto the mitigation for the IID water transfer. If there is to be another transfer, then that project should mitigate for its impacts to the existing project—which, in this case, is the Salton Sea Restoration Project. The parties to the IID water transfer deal worked out a deal for a 300,000 acre-foot transfer, and not a 600,000 acre-foot transfer.

The second issue involved in the question of flow is whether the IID must deliver water to the sea outside of its mitigation obligations for the transfer. Since the sea solely relies on irrigation to exist, and if the IID decides not to order as much water from the lower Colorado River, the sea could perish. One possible solution would be to establish that IID water is burdened with the duty of maintaining public trust benefits at the sea. In *Krieger v. Pacific Gas & Electric*, the court held that a kind of riparian right had come into existence for a PG&E canal across public land.²³ When PG&E proposed to upgrade its canal to eliminate seepage (and thus the riparian vegetation) and habitat around the existing canal, the court decided that these upgrades exceeded PG&E's easement across private land. Thus, in exchange for the burden of having PG&E's canal across his land, the landowner had a right to the benefit of the riparian vegetation that had resulted due to leaks and seeps in the canal.

2. Political Pressures

When the deal was reached between the various parties on the IID water transfer, a key part of that agreement was that California was going to assume liability for any impacts at the sea (beyond the \$133 million in mitigation funds from the water agencies). In exchange for assuming liability for the sea, the state

23. *Krieger v. Pac. Gas & Elec.*, 119 Cal. App. 3d 137, 143 (1981).

insisted that it would make the final decision on the fate of the restoration plan. This agreement was made much to the chagrin of the SSA, a joint powers authority, which had been working on a solution for the sea for the last ten years. The SSA is made up of the local water districts, members of the board of supervisors from Imperial and Riverside county, and the Torres Martinez tribe.

Currently, there is a considerable debate regarding who should be the lead in this restoration planning effort. The SSA and its local supporters are arguing vigorously for the SSA to take over this project, including the liability, in case this project fails to restore the sea. The local interests approached Denise Ducheny, their state senator, and requested that she carry a bill that would put the SSA in charge of the Salton Sea Restoration Project.

This political struggle has the conservation community concerned since the state's assumption of liability was one of the key deal points to that community. Further, there is concern that if this project becomes a "local" project, there will be no incentive for the state to secure additional funding for the Sea Restoration effort.

3. *Scientific Uncertainty*

As with any complicated issue involving the intersection of biology, chemistry, and engineering, there are significant unresolved scientific questions, along with gaps in important data. Some of these issues involve determining the level of seismic activity at the site, which would affect the engineering; understanding the habitat needs of various bird and fish species; understanding the chemistry of the sea and how it might be affected if the water becomes "cleaner"; determining solutions for removing selenium from the water column; and understanding the scope of the possible air quality issues.

There is no simple solution to dealing with this issue of scientific uncertainty. Instead, the state will need to move forward with prioritizing its research, and designing a project that can be adapted as new information comes to light.

4. *Lack of Funding*

The current IID agreement includes (potentially) close to \$300 million for the restoration plan. Unfortunately, it is unlikely that any plan can be designed within this budget. Therefore, additional funding needs to be identified and secured. Possible funding sources include the state—most likely in the form of a water bond—the federal government, and/or local funding through the creation of an infrastructure finance district. None of these funding sources are certain or secure. The state and federal budget crisis is approaching an unprecedented level of debt. In addition, the infrastructure finance district funding ("IFD") scheme is, in many ways, a house of cards. The IFD requires significant investment by developers in land acquisition around the sea to provide a certain enough stream

of funding to satisfy bond writers who would need to write a bond to pay for the restoration project.

5. Lack of Time

While December 2006 may not seem that far away, the sea is already in a state of decline, which may be accelerating faster than originally thought by scientists. For example, recent fish surveys by the Department of Fish and Game confirmed that fish populations in the sea have crashed and are existing at a very low level. In addition, while a decision on a project alternative will be made in December 2006, project level environmental analysis will still need to take place, further delaying actual construction of a project. It is unclear exactly *when* a final project will be completed.

V. POSSIBLE FUTURE OUTCOMES AT THE SEA

At the moment, there is no silver bullet for saving the sea. While there are numerous ideas for saving it—ranging from pipelines to the gulf, to large evaporation ponds, or diking off a portion of the sea to save some of the habitat—there is a need for more research on the engineering feasibility, impacts to water quality, and the likelihood of habitat creation for each of these solutions. In addition, the cost and feasibility of each solution is impacted by how much water will be flowing to the sea in the future.

Despite these challenges, there appear to be three design ideas rising to the forefront—a “North Lake” plan, a “Cascades Concept” plan, and a “Hospice” plan.

A. The North Lake Proposal

The North Lake Proposal, which is being championed by the SSA, would require a rock wall (or dam) to be built across the northern part of the sea. This wall would divide the sea. The southern end of the sea would be engineered to extend the New and Alamo Rivers up to the northern end of the sea. There would be extensive shallow wetlands along the southern end, with the center of the southern part of the sea left to become hypersaline and evaporate. The northern part would be fed by the New and Alamo Rivers, creating a marine-like lake.

The benefits of this plan may be that it would create a set of water features that would attract people to live at the sea, providing more economic revitalization for this area. It may also provide a fair amount of fish and wildlife habitat. The possible problems with this plan are: (1) air quality; (2) water quality—in the form of possible selenium contamination; (3) engineering to address seismic activity; and (4) cost.

B. The Cascade Concept

The Cascade Concept, which is being championed by the Imperial Group—a set of Imperial Valley farmers and landowners—would require the building of extensive shallow water ponds throughout the sea. This design is intended to allow for future water transfers.²⁴

Similar to the North Lake Proposal, there are significant issues involving air quality, water quality, the amount of wildlife habitat, and cost. The biggest problem appears to be the issue of significant concentrations of selenium in the shallow water ponds.

C. The Hospice Plan²⁵

The Hospice Plan is not currently being championed publicly by any interest. This plan would allow for the sea to become more saline and smaller. Most likely, this plan would have the state manage the area by hazing away wildlife from the toxic spots, planting extensive ground cover to deal with the air quality effects, and finding habitat elsewhere to mitigate for the loss of habitat at the sea.

For obvious reasons, it is unlikely that the conservation community, the hunting and fishing community, and the local interests would be interested in this plan. For the reasons discussed above, it is likely that those interested in future water transfers would be in favor of this plan.

VI. CONCLUSION

The Salton Sea could become one of California's greatest assets, or one of our state's biggest liabilities. What will happen is still very much an open question. Over the next couple of years, the Schwarzenegger Administration has the opportunity to seize this project as a challenge worth assuming.

Can there be salvation for the sea? At the end of the day, the organizations who have been working to save the sea during these last several years are hopeful that a sea will emerge for the benefit of fish and wildlife, the recreation community, and the people who call the Imperial and Coachella Valley home. However, the goal of salvation will only occur if the state, federal, and local governments come together to work toward this common vision. Thus, there will be no salvation without cooperation.

24. The Imperial Group is currently challenging IID over the issue of who owns the water being sold. The Imperial Group contends that as landowners, they actually own the water instead of IID, and thus should receive the proceeds from the IID transfer. If the Imperial Group is successful in this legal claim, it would be in their financial interest to have a restoration plan that would accommodate future water transfers.

25. For lack of a better term, I've taken the liberty of naming the plan to manage the declining sea as the "Hospice Plan."