



PACIFIC INSTITUTE

FOR STUDIES IN DEVELOPMENT, ENVIRONMENT, AND SECURITY

April 23, 2002

Mr. Bruce Ellis, Chief
Environmental Resources Management Division
Bureau of Reclamation
Phoenix Area Office (PXA0-1500)
PO Box 81169
Phoenix AZ 85069-1169

Mr. Elston Grubaugh, Manager
Resource Planning and Management Department
Imperial Irrigation District
PO Box 937
Imperial CA 92251

re: IID Water Conservation and Transfer Project DEIR/DEIS

Dear Mr. Ellis and Mr. Grubaugh:

The Pacific Institute for Studies in Development, Environment, and Security submits the following comments on the Imperial Irrigation District (IID) Water Conservation and Transfer Project draft Environmental Impact Report/Environmental Impact Statement and draft Habitat Conservation Plan (HCP) (hereinafter, DEIR). The Pacific Institute is an independent, non-partisan, non-profit organization, created in 1987 to conduct research and policy analysis in the areas of environment, sustainable development, and international security. The Institute has actively participated in Salton Sea-related projects for more than four years, via formal scoping comments and through informal discussions and workshops, as well as the Institute's 1999 report, *Haven or Hazard: the Ecology and Future of the Salton Sea*. The Institute submitted formal comments (posted at www.pacinst.org/salton_sea.html) on the January 2000 Salton Sea Restoration Project draft Environmental Impact Statement/Environmental Impact Report and supporting documents. In October 2001, the Institute submitted a Salton Sea habitat preservation plan to the Salton Sea Authority.

These comments and recommendations are offered in the hopes of improving the DEIR and the proposed project. The Pacific Institute recognizes the need for the proposed project and supports the general objective of reducing California's reliance on surplus Colorado River water. In the long run, reducing California's reliance on such surplus water can free up Colorado River water for meeting environmental needs, among other uses. However, reallocation efforts must be implemented in such a way as to minimize environmental and socio-economic impacts. The DEIR fails to provide any assurance that the proposed project would meet such a standard, despite the existence of mitigation alternatives that could minimize environmental impacts without jeopardizing the transfer itself.

The general objectives of a DEIR include informing key decision makers and the public about the potential, significant environmental effects of proposed activities and by identifying means by which environmental damage can be avoided or significantly reduced. This DEIR fails to satisfy these objectives. As discussed in detail in the following, the DEIR is flawed by a series of errors, mischaracterizations, and omissions, including:

- A reliance on unsubstantiated or incorrect hydrologic assumptions that individually and collectively generate a distorted baseline, minimizing the actual and relative impacts of the Proposed Project
- Failure to provide mitigation for increased concentrations of selenium;
- An ill-defined HCP approach that is used to justify findings of “less than significant impact” to all biological resources;
- An incomplete biological assessment that ignores the impacts of declining lake elevation on biological resources;
- Failure to address growth-inducing impacts at the points of delivery;
- Inadequate discussion of air quality impacts and failure to mitigate such impacts; and
- Inadequate description of socio-economic and environmental justice impacts.

By relying upon a distorted baseline that greatly exaggerates the future degradation of the Salton Sea absent the proposed project, the DEIR minimizes the potential impacts of the project and the responsibility of the transfer parties to mitigate for such impacts. The DEIR fails to provide a reasonable or informative baseline, fails to offer adequate mitigation for a host of impacts, and generally fails to meet the standards of an adequate DEIR. This DEIR is inadequate.

General Recommendation

The water transfer should proceed on an interim basis along the lines of the proposal submitted by the Imperial County Farm Bureau, wherein Imperial Valley farmers would temporarily fallow land for the first several years of the transfer agreement, as IID collects sufficient revenue to underwrite the costs of implementing on-farm conservation measures. Such temporary fallowing would limit impacts to the Salton Sea, while addressing farmers’ needs for financial predictability. In the initial years of the transfer, as the volume of transferred water ramps up, the amount of land needed to generate the water would be smaller than at peak periods, reducing socio-economic impacts. Potentially, these short-term socio-economic impacts could be mitigated with some of the transfer revenues; additionally, the implementation of on-farm conservation efforts would be expected to generate new jobs. This interim fallowing period would provide time for the development and implementation of long-term habitat preservation and dust abatement plans for the Salton Sea, and a plan to reduce the concentration of selenium in drainage waters. The development and implementation of such plans, generated in consultation with a broad range of stakeholders and overseen by the Salton Sea Science Office, would be required for the final approval of the water conservation and transfer program.

If such a long-term habitat preservation and dust abatement plan is not authorized and funded by December 31, 2007, the water conservation and transfer program would be terminated on that

date. This approach would enable California to meet the terms of the Interim Surplus Guidelines, while affording time to develop reasonable mitigation.

Background

IID is proposing to implement a water conservation and transfer project that would transfer the right to use up to 300,000 acre-feet per year (afy) of Colorado River water, for up to 75 years, from the Imperial Valley to other southern California users. Under the terms of the proposed Quantification Settlement Agreement (QSA), up to 100,000 afy could be transferred to the Coachella Valley Water District (CVWD) and/or the Metropolitan Water District of Southern California (MWD). Under a 1998 water transfer agreement, up to the full amount could be transferred to the San Diego County Water Authority (SDCWA).

These transfers would facilitate California's efforts to reduce its consumption of Colorado River water in normal years to its annual 4.4 million acre-feet (MAF) apportionment. In recent years, California has repeatedly used in excess of 5.0 MAFy, and on occasion more than 5.2 MAFy, of Colorado River water, relying upon the unused apportionment of Arizona and the declaration of surplus conditions on the river. In January 2001, the Secretary of the Interior adopted a set of Interim Surplus Guidelines that provide for a predictable 15-year period of surplus declarations to facilitate California's efforts to reduce its consumption of Colorado River water, contingent upon CVWD, IID, and MWD executing the QSA (and its related documents) by December 31, 2002.¹

Imperial Valley has yet to determine how it will conserve water for the transfer. Conservation efforts could include improving on-farm efficiencies (such as installing pump-back systems to return run-off to the field), system improvements (such as lining canals), or fallowing (taking land out of production and transferring the water that otherwise would have been used on the fields). In the 1980s, the State Water Resources Control Board (SWRCB) ordered IID to develop and implement a meaningful water conservation plan to address its inefficient use of Colorado River water.²

Yet this very inefficiency provides the water sustaining the Salton Sea. The most significant impacts of a water transfer that generated water by improving efficiencies would be manifested at the Salton Sea. Agricultural drainage and administrative spills account for more than 85% of the Sea's total annual inflow of 1.36 MAF. Agricultural drainage is a combination of tailwater (from field run-off, carrying high concentrations of fertilizers and pesticides) and tilewater (water that has leached through the field, with higher salinity and selenium loads). On-farm

¹ The Interim Surplus Guidelines Record of Decision Section 5(B) actually reads:

In the event that the California contractors and the Secretary have not executed [the QSA and its related documents] by December 31, 2002, the interim surplus determinations under Section 2(B)(1) and 2(B)(2) of these Guidelines will be suspended and will instead be based upon the 70R Strategy, for either the remainder of the period identified in Section 4(A) *or until such time as California completes all required actions and complies with reductions in water use* reflected in Section 5(C) of these Guidelines, whichever occurs first. (emphasis added).

Note that "all required actions" are not defined. California could readily meet the 2003 consumptive use reduction benchmark in Section 5(C) with existing programs, suggesting that the December 31 deadline for approval may not be as binding as suggested by the parties.

² SWRCB Decision 1600 (1984), Order 84-12 (1984), and Order 88-20 (1988).

conservation measures would tend to reduce tailwater, decreasing nutrient loading to the Salton Sea while increasing the relative concentrations of salts and selenium. Improvements to IID's delivery system would reduce the volume of the best quality water reaching the Sea. Fallowing would have the least impact to the Sea, but by taking agricultural land out of production it would directly and indirectly decrease local employment. Also, fallowing would not address the SWRCB's findings of inefficient use.

The Salton Sea lies 35 miles north of the U.S.-Mexico border in one of the most arid regions in North America. The Sea has the largest surface area of any inland body of water in the state of California. Presently, the Sea is roughly 35 miles long, 9 to 15 miles wide and has a volume of roughly 7.5 million acre-feet; its surface elevation lies approximately 228 feet below sea level. The Salton Sea is a terminal lake; the only outflow for its waters is via evaporation. As water evaporates, salts, nutrients, and other elements are left behind to concentrate in the Sea. Current salinity of the Sea is roughly 44,000 mg/L, about 25 percent saltier than ocean water.

The Salton Sea provides a host of ecological values that are important not only within the Imperial and Coachella valleys but also throughout the historic reach of the Colorado River delta and the length of the Pacific Flyway. The unusually high incidence of disease and mortality currently reported at the Salton Sea threatens these values. Although the Salton Sea is a product of human activity, the Sea and its environs provide a complex mosaic of habitats, ranging from open water, estuaries, and salt marsh to mud flats and riparian corridors. These and other habitats support more than 400 species of birds and a variety of other wildlife, including endangered species such as the desert pupfish. These habitats are especially vital given the destruction of wetlands throughout most of southern California and the lower San Joaquin Valley and within the Colorado River delta itself.

The draft EIR/EIS for the project was filed on January 18, 2002. The co-lead agencies are IID and the U.S. Bureau of Reclamation.

Process and Scope

As mitigation for the project's impacts to the biological resources of the Salton Sea, the DEIR inappropriately relies upon two concept-level "approaches," "as means to seek input on which approach, or combination of approaches, is most appropriate." (2-49) The DEIR notes that "If Approach 1 is selected for implementation for the HCP, additional details will need to be developed and subsequent environmental documentation may be required to evaluate the potential impacts." (3.0-3) If HCP Approach 2 were implemented, approximately 75,000 total acres of "fallowing would be required to generate the water necessary to offset changes in inflow to the Sea" (2-52). Given local opposition to "replacement water" fallowing,³ the likelihood of legal challenge to such use of water from other water users (especially in light of Decision 1600 and the California Colorado River Water Use Plan), and the additional socio-economic and environmental justice impacts of such fallowing, such an approach seems unlikely to be implemented.

³ The IID Board itself adopted a resolution opposing fallowing for the purpose of providing the water to help restore the Salton Sea, as have the City of Calexico, the City of El Centro, the City of Imperial, and Imperial Valley United, among others.

Yet these ill-defined, preliminary approaches are the basis for a finding of “No significant impacts (after mitigation) to biological resources” (Table ES-1). This specious assertion of complete mitigation, based upon a vague description of a proposed action, misleads the public and subverts the CEQA/NEPA process. “An accurate, stable and finite project description is the *sine qua non* of an informative and legally sufficient EIR.”⁴ The concept-level HCP approaches included in the DEIR fail to meet the standard of an informative and legally sufficient EIR. This inadequate approach prevents the public from providing informed feedback, and suggests the lead agencies intend to present an un-reviewed HCP, perhaps based on the concepts provided here and perhaps based on something completely different, in a final EIR as a *fait accompli*, precluding any meaningful public review or input.

- **Recommendation** – Provide a detailed HCP, with sufficient information to support the DEIR’s finding that the HCP would provide full mitigation for all biological impacts at the Salton Sea.

The DEIR fails to define the “region of influence” adequately. DEIR Section 1.3 (“Project Location and Region of Influence”) lists six subregions, describing each of them except the “Salton Sea.” At one point, the DEIR defines the Salton Sea subregion as “The Salton Sea and its shoreline back to 0.5 feet around the Sea” (ES-3), while several pages later the definition is tautological: “**Salton Sea:** This subregion is defined as the Salton Sea” (1-6). It is unclear why the executive summary description of the Salton Sea subregion is more descriptive than that within the report itself, though this description also fails to provide meaningful information. As evidenced by IID’s own reports of daily elevation of the Sea at “Fig Tree John,”⁵ provisional daily elevations fluctuated from –225.99 to –227.16 feet mean sea level during 2001, and rose as high as –225.48’ in May 1995. Given that small increases in elevation can translate into significant increases in the shoreline and surface extent of the Salton Sea, the Salton Sea subregion is defined inadequately, suggesting that the subsequent analysis of impacts to the Salton Sea are likely understated.

- **Recommendation** - Clearly define the extent of the Salton Sea subregion, based on a 0.5 foot set-back from the extent of the Sea at a recent maximum elevation (such as –225.48’).

Table 3.7-1 notes “potentially significant unavoidable impact” for air quality to the Salton Sea region, but the Salton Sea geographic subregion as defined here “consists of the Salton Sea plus a 0.5-mile strip of land extending out from the shoreline.” (3.7-14) As noted above, this definition lacks a fixed boundary and is inadequate, and potentially excludes part or all of the communities along the east and west shores of the Salton Sea, such as Bombay Beach, Desert Shores, Salton City, home to thousands of people. As depicted in the various windrose diagrams included in this section, it is reasonable to expect that winds of sufficient magnitude could carry dust from exposed lakebed to communities outside the region of influence as currently defined, indicating that the ROI is currently inadequate.

⁴ *County of Inyo v. City of Los Angeles* (3d Dist. 1977) 71 Cal.App.3d 185, 193.

⁵ 2002 IID/SDCWA State Water Resources Control Board (hereinafter SWRCB) IID exhibit 49, “Salton Sea Elevations.” The DEIR understates these recent maximum elevations, claiming (without citation) a recent decadal fluctuation ranging from –228.7’ to –226.6’ msl (p 3.1-69).

- **Recommendation** – Expand the region of influence to include communities on the east and west shores of the Salton Sea that would be affected by airborne emissions of particulates from the Salton Sea lakebed, and evaluate the impacts to human health caused by the project in these areas.

The DEIR asserts (1-42) that “Implementation of the Proposed Project is not inconsistent with subsequent implementation of a restoration project.” This statement is misleading in that it suggests that the method of implementing the Proposed Project has been determined, inconsistent with Section 2.2, which lists a series of options for conserving water in the Imperial Valley. If the Project is implemented via on-farm conservation efforts (Secs. 2.2.3.2 and 2.2.3.3), then inflows to the Sea will decrease markedly. The Salton Sea Restoration Project DEIS, released in January 2000, makes clear that such decreases in the volume of inflows to the Sea would prevent the Restoration Project from meeting its salinity and elevation objectives until roughly 2040, and an appropriate cumulative impacts analysis would indicate that the combination of the transfer and other proposed and probable future actions would prevent the Restoration Project from *ever* meeting its salinity and elevation objectives within the 100 year project horizon. The Proposed Project could very well be inconsistent with subsequent implementation of a restoration project as currently defined.

- **Recommendation** – delete the misleading statement “Implementation of the Proposed Project is not inconsistent with subsequent implementation of a restoration project,” unless the proposed project is implemented solely with fallowing, and with HCP Approach 2.

DEIR Section 1.6 (“Other Proposed Projects Related to Resources Affected by the Proposed Project”) fails to note the California Regional Water Quality Control Board’s (RWQCB) *Water Quality Control Plan for the Colorado River Basin*, as well as the various ongoing and planned Total Maximum Daily Load (TMDL) programs designed to improve water quality in the region. Curiously, according to Section 6, the staff of the RWQCB were never consulted in the preparation of the DEIR, despite the clear and multiple water quality impacts associated with the proposed project. The DEIR briefly notes the existence of the RWQCB and the *Basin Plan* (3.1-7-8), but neglects to describe the *Basin Plan* in any detail, nor provide any assessment of how the proposed transfer might affect the implementation of the Plan, despite clear indications that it would. The DEIR also fails to account for any water quality improvements that might result from the implementation of best management practices pursuant to the Plan’s TMDLs.

- **Recommendations** – Describe the *Water Quality Control Plan for the Colorado River Basin* in detail.
- Account for the Plan’s potential improvements to water quality within the baseline/No Action alternative.
- Describe the potential impacts of the proposed water transfer on the implementation of the *Basin Plan*.

Hydrology and Water Quality

Water quantity

The baseline/No Project alternative employs biased hydrologic assumptions that minimize the relative impacts of the proposed project. The most egregious example is the unsubstantiated assumption that the 1988 IID/MWD water conservation program will decrease inflows to the Salton Sea by roughly 0.1 MAFy (App. C 3-17), effective immediately. This assumption has no basis in the historical record,⁶ which shows that in the 12 years prior to implementation of the program, IID's average annual use was 2.73 MAF. In the 12 years in which the conservation program has been in effect, IID's average annual use (less the amount transferred to MWD) was 2.92 MAF. Even in the three most recent years of the conservation program, when the quantity of water transferred was at or near its maximum of roughly 0.1 MAFy, IID's average annual use (less the amount transferred to MWD) was 2.93 MAF, 0.2 MAFy *more* than IID's average annual use without the conservation program.⁷ Despite this historical record, the DEIR employs a hydrologic model that assumes that IID's average annual use will decrease by the amount transferred to MWD. Furthermore, the model apparently assumes that this reduction will happen immediately, whether or not the Proposed Project is implemented. The DEIR fails to justify or explain this assumption.

The DEIR states that under the baseline/No Action alternative, "IID would not be obligated to limit its annual diversions ... to 3.1 MAFY..." (2-55). The quantification of IID's consumptive use right would facilitate the measurement of conservation efforts within the district, by providing for a benchmark against which future consumptive use, and transferred water, can be measured. Absent this benchmark, there is little reason to believe that IID's use, including water transferred to MWD, would change from historical levels, or that inflows to the Salton Sea would decrease as projected by the baseline/No Action alternative.

The Quantification Settlement Agreement (QSA) would cap IID's consumptive use at 3.1 MAFy. Water transferred to MWD under the 1988 agreement would be subtracted from this cap, as shown in DEIR Table 2-1 (2-6). This cap would enable IID to continue to consume annually the average volume of water it has used in the past twelve years (2.92 MAFy), and transfer an additional 0.1 MAFy to MWD, without exceeding the cap. If in some year IID's use increased to the cap,⁸ presumably some of that additional water would flow to the Sea, roughly balancing any decrease of inflows to the Sea due to actual conservation efforts.

Thus, the baseline/No Action alternative assumption that the 1988 IID/MWD conservation program will decrease inflows to the Sea by some 0.1 MAFy is wrong for three reasons:

⁶ Data from the U.S. Department of the Interior's annual *Compilation of Records in Accordance with Article V of the Decree of the U.S. Supreme Court of the United States in Arizona v. California dated March 9, 1964* and from the Colorado River Board of California.

⁷ A variety of market, pestilence, and hydrologic factors influence water consumption patterns in the Imperial Valley, challenging efforts to establish a direct correlation between actual use and expected efficiency improvements.

⁸ Since 1955, IID's annual consumptive use has exceeded 3.1 MAF only four times (1974, 1996-1998), the last three times in years when the Secretary of the Interior had declared a "surplus condition" for the Colorado River (data from Bureau of Reclamation and Colorado River Board of California).

1. it contradicts the historical record, which shows no such decrease over the life of the 1988 conservation program;
2. if the proposed IID-SDCWA transfer is not approved (“no action”), then the QSA will likely not be implemented, meaning that IID’s use will not be capped at 3.1 MAFy and therefore there will be no baseline against which to measure IID conservation, reducing the likelihood that any measurable conservation would occur in the future; and
3. even if the QSA were implemented, the 3.1 MAF cap is sufficiently high to permit IID to continue to use water at or above historical levels, *and* transfer 0.1 MAF to MWD, without exceeding the cap.

By definition, the baseline/No Action alternative should reflect current and reasonably foreseeable outside actions. The 1988 IID/MWD water conservation program has been on-going for more than 12 years; records clearly demonstrate that it is wholly unreasonable to assume that this conservation program will decrease inflows to the Sea, even with new state and federal actions, such as quantification of IID’s water right. An accurate baseline should reflect a continuation of IID drainage flows to the Salton Sea at historical levels.

- **Recommendation** – remove the unsubstantiated decrease in inflows to the Salton Sea attributed to the 1988 IID/MWD conservation program, from the baseline/No Action hydrologic model.

The hydrologic model is also internally inconsistent. The DEIR states that the baseline/No Action alternative assumes that the Inadvertent Overrun and Payback Policy (IOP) would not be implemented (2-54). Yet the description of the baseline/No Action hydrologic model assumes a further decrease of inflows of 56,856 acre-feet/year of inflows due to “priority 3 entitlement enforcement of Colorado River water” (App. F p. 4), presumably the very IOP that the DEIR earlier assumed would *not* be implemented under the baseline/No Action alternative. In fact, the DEIR later attributes this decrease to the IOP: “An additional 59 KAFY would be conserved for compliance with the IOP” (3.7-23). Implementation of the IOP constitutes a federal action and is subject to its own NEPA requirements.⁹ Additionally, the IOP is a *proposed* federal action closely linked to the adoption of the IID/SDCWA water transfer.¹⁰ It is wholly inappropriate to include the projected impacts of a proposed federal action as a baseline/No Action condition for the hydrologic model.

- **Recommendations** – If “priority 3 entitlement enforcement of Colorado River water” (App. F p. 4) is an existing federal action and not the proposed IOP, this should be clearly and comprehensively explained within the text of the DEIR, and the rationale for projecting an annual decrease of 56,856 acre-feet of inflows to the Salton Sea should be described in detail.

⁹ A separate DEIS for the Implementation Agreement, Inadvertent Overrun and Payback Policy, and Related Federal Actions (Statement Number DES-01-43) was filed on January 4, 2002 by the Bureau of Reclamation. The comments of the Pacific Institute and other organizations on this DEIS are posted at the Pacific Institute website, at www.pacinst.org/salton_sea.html.

¹⁰ As noted above, Reclamation issued a joint DEIS for both the Implementation Agreement (the federal action necessary to permit the water transfer to occur) and the IOP.

- If “priority 3 entitlement enforcement of Colorado River water” reflects projected decreases due to implementation of the proposed IOP, the hydrologic model should be corrected to reflect that the actions of a proposed federal action do not properly belong within a baseline/ No Action alternative.

The 1988 conservation program and the IOP assumptions project a combined annual decrease of more than 0.16 MAF in baseline flows to the Salton Sea, representing more than 11% of current inflows to the Sea and more than 50% of the projected reduction due to the Proposed Project. These biased and unsubstantiated assumptions dramatically distort the entire range of impacts to the Salton Sea, by implying that environmental conditions at the Sea are deteriorating rapidly and would continue to deteriorate at a rapid rate absent the proposed project. This misconception allows the DEIR to claim that the proposed project would only accelerate on-going actions, implying a change in degree, but not in kind. This is a gross mischaracterization, prejudicing entire sections of the DEIR and rendering the Salton Sea sections of the DEIR misleading and inaccurate. These two erroneous assumptions are sufficient reason to deem the DEIR inadequate and to require the release of a new DEIR.

Salinity

The baseline/No Project alternative employs biased salinity assumptions that minimize the relative impacts of the proposed project. The DEIR notes that the mean salinity (771 mg/L) used for the Existing Setting reflects results from the period of record from 1987-1999 (3.1-92). Yet the salinity used for the Baseline assumes *maximum* concentrations (of 879 mg/L) “over the life of the Proposed Project” (3.1-93), a salinity 14% higher than existing conditions. This biased assumption minimizes the potential impacts of the Proposed Project relative to a baseline based upon reasonable assumptions.¹¹ The DEIR’s misleading assumptions generate the projection that the Salton Sea’s baseline salinity would reach 60,000 mg/L by 2023 (3.0-15), rather than a salinity of 57,900 mg/L *after 50 years*, as projected by the to-be-published paper on Salton Sea salinity cited by the DEIR in Appendix F (p 20).

- **Recommendation** – The baseline alternative should assume that salinity of the Colorado River at Imperial Dam remains relatively constant, at roughly 771 mg/L.

To its credit, the DEIR’s Salton Sea Accounting Model accounts for the current precipitation or biological reduction of 0.7 – 1.2 million tons of dissolved solids within the Sea each year (App. F p. 20), meaning that the Sea’s salinity is increasing more slowly than previously estimated. It is not clear, from either the DEIR or from the draft paper it cites, how such precipitation/biological reduction rates might vary at the higher salinities projected for the Salton Sea if inflows decrease. Potentially, such precipitation rates might increase as the saturation thresholds of other salts are approached with the Sea’s rising salinity, decreasing the overall rate of increase. This suggests that the model’s sampling from a uniform probability distribution may tend to overestimate the rate of increase, particularly at higher salinities.

¹¹ The Colorado River Basin Salinity Control Program works actively to implement programs to reduce the river’s salt load. Interior’s *Quality of Water: Colorado River Basin* Progress Report No. 19 (Jan. 1999) notes that planned and potential salinity control programs could result in a *downward* trend in Colorado River salinity at Imperial Dam (rather than upward as asserted by the DEIR (3.1-93)), suggesting that it would be entirely reasonable for the DEIR to assume that salinity remains constant at current levels.

- **Recommendation** – The Salton Sea Accounting Model should be modified to reflect potentially higher precipitation rates at higher salinities.

At one point, the DEIR claims that “The Sea currently has an average salinity of approximately 44,000 mg/L” (ES-15), while later it claims “The existing salinity of the Sea is approximately 46 g/L.” (3.0-15) Assuming a higher current salinity minimizes the impacts of the Proposed Project, especially given the biased salinity and inflow assumptions present in the baseline model. That is, assuming a higher starting salinity decreases the “temporal impact” attributable to the water conservation and transfer programs.

- **Recommendation** – Current salinity should be based on recent empirical data (such as a mean of 2001 values), not model-generated projections. This empirical data should then be the basis for future salinity projections.

Tilewater salinity and selenium loadings are not uniform across the Imperial Valley,¹² suggesting that an appropriate means of minimizing such loadings would be to concentrate on-farm conservation efforts and/or fallowing efforts on parcels identified as contributing disproportionately to such loadings.

- **Recommendations** – Include a map displaying mean annual salinity and selenium loadings by irrigated parcel.
- Modify the Proposed Project so that it would target conservation and/or fallowing efforts at those parcels with disproportionately high salinity and/or selenium tilewater loadings.

Selenium

The DEIR finds that selenium concentrations currently exceed fresh water quality criteria in surface drains and at the outlets of the Alamo and New Rivers (Table 3.1-4), and that such concentrations would increase under the Proposed Project (Table ES-1). Yet the DEIR claims a finding of ***unavoidable*** impact (“This impact cannot be mitigated” (3.1-111)). This is patently false. The increases in selenium concentrations are significant impacts that could and should be mitigated. Various on-going selenium mitigation programs exist within California and within the Upper Colorado River basin, undermining the DEIR’s questionable finding. Such mitigation could be implemented within the Imperial Valley, through wetland management programs based upon current programs in California’s Central Valley that may have reduced selenium concentrations by as much as 90%.¹³ IID could also contribute to Colorado River Upper Basin source reduction programs. A pilot project in the Montrose Arroyo Basin of western Colorado reported a decrease of selenium loadings by 28%.¹⁴

¹² Setmire, J.G., R.A., Schroeder, J.N. Densmore, S.L. Goodbred, D.J. Audet, and W.R. Radke. 1993. Detailed study of water quality, bottom sediment, and biota associated with irrigation drainage in the Salton Sea area, California, 1988-90: U.S. Geological Survey Water Resources Investigations Report 93-4014, 102 pp.

¹³ Agrarian Research and Management Company, Ltd., cited in 2002 SWRCB California Regional Water Quality Control Board-CRBR Exhibit No. 2.

¹⁴ Butler, David L. 2001. *Effects of piping irrigation laterals on selenium and salt loads, Montrose Arroyo Basin, western Colorado*. U.S. Geological Survey Water Resources Investigations Report 01-4204. 14 pp.

- **Recommendation** – Identify and develop an appropriate program to mitigate for the increase in selenium concentrations due to the Proposed Project, via one or more of: wetland management programs, targeted efforts at disproportionately high sources of selenium within the Imperial Valley, and/or support for Upper Colorado River Basin selenium source reduction programs.

Temperature

The temperature of the Salton Sea affects many of the species in the Sea, with low winter temperatures causing tilapia mortality and high summer temperatures further decreasing the availability of oxygen, stressing aquatic life. Because the Sea is a broad and shallow body of water, it responds relatively quickly to changes in air temperature. Average water temperatures in the Sea vary seasonally from the low 50s to the upper 90s; water temperatures at the surface of the Sea vary more than 70 degrees Fahrenheit annually.¹⁵

In 2000, air temperatures in the Imperial Valley ranged from a low of 35° F to a high of 112° F.¹⁶ The current size of the Salton Sea dampens these temperature fluctuations. As the Sea shrinks, water temperature fluctuations would increase. The DEIR fails to account for the biological impacts resulting from a reduction in the Salton Sea's thermal inertia due to the Proposed Project's reduction in inflows. The DEIR projects that the Sea's elevation will drop to a mean of -245' msl by 2030. According to the Elevation/Area/Capacity data provided in Table 5.1 of Appendix F, at this elevation the Sea would have a volume of 3.8 MAF, roughly half of its current volume. This dramatic reduction in thermal inertia would increase the Sea's annual fluctuation in temperature, further stressing aquatic species. The DEIR completely ignores this important water quality parameter. Indeed, the Sea's 50% reduction in volume could potentially have more immediate impacts on tilapia viability than would the rise in salinity. Moreover, this loss of thermal inertia represents a distinct impact of the Proposed Project; under a properly characterized baseline/No Action alternative, the size of the Sea would not diminish significantly.

- **Recommendation** – Describe the range of impacts to biological resources due to the decrease in the Sea's thermal inertia.

HCP

In reference to the potential effects of the proposed project on listed species, the DEIR offers the disclaimer, "IID recognized and considered the following: ... The level of mitigation should be scaled to the impact attributable to the water conservation and transfer programs." (2-49) This is a reasonable standard, assuming that the projected impacts are credibly and comprehensively assessed. The DEIR fails to do this, partly by relying on the biased assumption that baseline conditions at the Salton Sea will represent a marked change from current conditions, including a 7-foot drop in elevation (3.1-120). Using IID's standard, the public could rightly assume that IID would also mitigate for the impacts the DEIR attributes to reductions in flow to the Sea due

¹⁵ Cohen, MJ, JI Morrison, and EP Glenn. 1999. *Haven or Hazard: The Ecology and Future of the Salton Sea*. Oakland, CA: Pacific Institute. 63 pp.

¹⁶ IID Fact Sheet: Weather Summary: Imperial Valley 2000.

to the 1988 IID/MWD Conservation Program, given that these impacts would represent a change from current conditions. The DEIR fails to describe any existing or planned mitigation plans for the impacts attributable to the 1988 IID/MWD water conservation and transfer program, despite the projection that this program would decrease the elevation of the Sea by 7.3 feet, expose 16,000 acres of lakebed, and accelerate the rise in salinity to approximately 60,000 mg/L by 2023 and as high as 86,000 mg/L by 2077 (3.1-128).

- **Recommendation** – Describe IID’s level of mitigation efforts (if any) for impacts attributable to implementation of the 1988 IID/MWD water conservation program.

HCP Approach 1, as noted under **Process and Scope** (above), fails to provide more than a cursory description of the Salton Sea portion of the HCP. Yet even this cursory description raises a host of questions and problems. The DEIR notes that “the primary potential effects of the covered activities on proposed covered species associated with the Salton Sea relate to an increased rate of salinization and increased rate and magnitude of decline in the surface elevation” (2-49), though these relative impacts are tied to the inaccurate baseline. As described above, this arbitrary baseline minimizes the extent of impacts potentially caused by the proposed water conservation and transfer program, and therefore does not represent a reasonable threshold.

Regardless, the proposed “Hatchery and Habitat Replacement” approach for the Salton Sea portion of the HCP is fatally flawed, for the following reasons.

1. The DEIR notes that the habitat replacement (“fish ponds”) component of the approach would be initiated “if a long-term Salton Sea Restoration Project were not implemented before the Sea could no longer support fish” (2-50). As noted above, unless the proposed project solely relies upon fallowing, it would effectively preclude the implementation of a Salton Sea Restoration Project because it would be cost-prohibitive to remove sufficient salt from the shrunken Sea to render the Sea habitable for fish.
2. The trigger for the second component is ill-defined. As noted in Appendix C, tilapia are projected to reproduce within the delta regions long after the main body of the Sea becomes too saline for reproduction. Presumably, adult tilapia will continue to live in these less saline delta regions after the rest of the Sea becomes too saline for them. At what point, then, will the Sea “no longer support fish”? Is there a defined population that would trigger construction of the ponds? One would expect that the tilapia population would decline markedly, well before the adult salinity tolerance threshold is reached. Would impacts be mitigated in this transitional period?
3. Would hatchery-raised fish be raised in diluted Salton Sea water, or in Colorado River water? How would such fish be acclimated to Salton Sea water, particularly as the Sea’s salinity approaches adult tolerances? Would this require a longer growing period and therefore a larger facility (and more water and other resources)?
4. How would the temperature of the fish ponds be regulated to limit tilapia mortality? January minimum temperatures in the Imperial Valley (<40 ° F) are well below the tolerance of tilapia. Small (160-640 acre fish ponds at 5-6’ deep) would not buffer the low air temperatures, leading to large-scale fish kills in winter months, the very time when avian use of the Sea is at its peak. It is unclear from the description of HCP Approach 1 whether

IID would heat the water in the fish ponds to minimize temperature-generated mortality, or how this could be reasonably accomplished over 5,000 acres of ponds.

5. The intent of the ponds as described is too general. “The objective of creating ponds would be to maintain a level of foraging habitat that would help ensure that piscivorous birds would continue to be represented at the Salton Sea.” (2-50-51). At least 16 of the covered avian species eat fish. How would this approach ensure that the foraging needs of all of these species are met? Certain species (e.g., gulls) are much more aggressive and might be expected to dominate the feeding ponds, potentially to the exclusion of other, covered species. How would this approach be managed to ensure that the covered species are fed? Are there any estimations of how many individuals of each covered species might be fed by such ponds?
6. Water use for the ponds was estimated at close to 30 KAFy (2-51). Was there any assessment of whether such use would be considered reasonable and beneficial? Were any additional estimates developed of how much additional water would be required for flushing and water circulation, to minimize the concentration of selenium?

The DEIR fails to consider other alternatives, “because of insufficient [project] detail to determine feasibility and address agency concerns” (App. C 3-26). This rationale is questionable at best, since both the “Tri-Delta Wetland Project” and the “Pacific Institute Approach” provide far greater detail than does the DEIR’s own HCP. Since either of these approaches, or a plan with a larger impounded area, would provide a reasonable alternative to the two proposed approaches for the Salton Sea portion of the HCP, both should be considered fully.

- **Recommendation** – consider other approaches as mitigation for the proposed water transfer.

Biological Resources

The DEIR finds “less than significant impact” or “less than significant impact with implementation of biological conservation measures/the HCP” to all biological resources that do not enjoy a “beneficial impact” due to the proposed project and the three project alternatives (Table 3.2-1). These findings rely on the projected impacts of ill-defined HCP approaches (see above), and a questionable set of definitions. For example, the accelerated loss of the fishery at the Salton Sea is dismissed “Because all fish species are introduced, non-native species, the impacts are less than significant.” (3.2-150). This remarkable assertion both ignores the endangered native desert pupfish, and the tremendous resource offered by the Salton Sea’s estimated 160 million fish. While one can not help but admire the hubris of dismissing the loss of 160 million fish as “less than significant,” this would clearly be a significant, unmitigated impact.

Additionally, the DEIR’s assessment of biological impacts is not consistent with that of the January 2002 draft programmatic EIR for Implementation of the Colorado River QSA, (table ES-1), which finds that “The accelerated change in the natural habitat of the desert pupfish is considered a *potentially significant impact*. *Significant impacts* would occur to the California brown pelican, black skimmer, double-crested cormorant, and other resident and migratory birds that forage on fish.” (emphasis added)

The DEIR notes that “Impacts associated with a decline in [the Salton Sea’s] elevation are discussed in Sections 3.3 Geology and Soils, 3.6 Recreation, 3.7 Air Quality, and 3.11 Aesthetics” (3.0-15), failing to recognize the potential impacts to biological resources associated with a decline in elevation. Such impacts would include a loss of valuable shoreline habitat, the exposure of land bridges connecting existing island rookeries to the mainland, and loss of connectivity between pupfish populations. cursory discussion of such impacts are relegated to Appendix C, but they should be appropriately summarized and described within Section 3.2 Biological Resources.

- **Recommendation** – include an adequate description of the potential impacts to biological resources associated with a decline in the Salton Sea’s elevation within Section 3.2.

Birds

Shorebird counts at the Salton Sea exceed 78,000 individuals in fall, 68,000 in spring, and 27,000 in winter, with large numbers of black-necked stilts, American avocets, western sandpipers, and dowitcher species reported. These shorebirds are concentrated primarily on unvegetated beaches and alkali flats along the Sea’s south shoreline.¹⁷ The DEIR reports that such unvegetated areas constitute 25% of the adjacent wetlands at the Salton Sea (App. C 2-43), yet fails to quantify the loss of such habitat due to the projected decline in the Sea’s elevation, or assess how the loss of such habitat might impact shorebirds. In the air quality section, the DEIR contends that a fairly stable salt crust would form on exposed lakebed (3.7-35), suggesting that the Salton Sea’s newly exposed shoreline would not provide suitable habitat for the species that shorebirds currently prey upon.

- **Recommendations** – quantify the decrease in unvegetated shoreline habitat due to the proposed project and assess the impacts this will have on shorebirds.
- Develop an adequate mitigation plan for these impacts.

The Salton Sea provides valuable habitat for a significant percentage of the North American population of American white pelicans, as well as other special status fish-eating birds. The proposed project would greatly accelerate the loss of the Salton Sea’s fishery, destroying important habitat for these birds. This potential loss of habitat is especially alarming given the loss of more than 90% of California’s wetlands, dramatically limiting the options available to these birds. As noted above (see section on **HCP**), the proposed mitigation for impacts to fish-eating birds is defined inadequately and is unlikely to provide any real benefits for such birds.

Fish

The DEIR inconsistently addresses the salinity tolerance of tilapia, at one point suggesting that tilapia can be expected to survive in the Salton Sea until its salinity reaches 120 g/L (2-50)¹⁸, while later suggesting that the loss of the tilapia fishery will occur at or near 60 g/L, and that the loss of all fish (including desert pupfish) could occur at about 80 g/L (3.2-147). The use of

¹⁷ Shuford, WD and N Warnock. 2002. Patterns of shorebird use of the Salton Sea and adjacent Imperial Valley, California. *Studies in Avian Biology* (forthcoming).

¹⁸ The counter-intuitive assertion that “tilapia have been collected at a salinity as high as 120 ppt” (2-50) warrants documentation and explanation.

apocalyptic salinity thresholds or triggers as stark determinants of species' viability ignores the absence of empirical evidence of any such salinity thresholds; population abundance or productivity would be expected to change continuously in response to increases in salinity.

- **Recommendation** – given that the DEIR designates tilapia an indicator species and the critical food supply for fish-eating birds, the DEIR should include a consistent, detailed, documented description of tilapia's life history, with references to existing studies on juvenile and adult salinity tolerance, impacts of salinity, selenium, low dissolved oxygen, temperature, and other stressors.

Tilapia are sensitive to water temperatures below 55° F and are subject to large-scale die-offs in cold winter months. High summer temperatures can reduce the availability of oxygen in the Sea, exacerbating the impacts of algal blooms and wind-generated mixing of anoxic bottom waters, increasing mortality rates. The DEIR fails to account for the exacerbation of existing temperature fluctuations at the Sea due to the Proposed Project (see **Water Quality – Temperature**, above). Such temperature-driven mortality potentially could exceed losses due to the rise in salinity.

- **Recommendation** – describe the increase in temperature-generated fish mortality and potential indirect impacts to fish-eating birds.

Land Use

The DEIR correctly includes the SDCWA service area within the region of influence (1-14), but then incorrectly asserts that “there would be no impacts in the SDCWA service area geographic subregion” (3.0-2), based on the misleading claim that SDCWA would receive the same blend of water that it currently receives (Table 3-1). The pertinent question is not the origin of the water received by SDCWA, but its reliability. The adoption of SB 221 in October 2001 changed California's statutory climate, clarifying the Proposed Project's growth-inducing impacts at the points of delivery. SB 221 prohibits approval of new developments of at least 500 units, unless the applicable public water system verifies that a sufficient water supply is available or, in addition, a specified finding is made by the local agency, available prior to completion of the project. A 1999 IID newsletter specifically notes the objective of increasing reliability: “T

¹⁹ Hurlbert, SH. 1991. Salinity thresholds, lake size, and history: a critique of the NAS and CORI reports on Mono Lake. *Bulletin of the Southern California Academy of Science* 90: 41-57.

²⁰

²¹ California Government Code Section 66473.7. (a)(2)(D) “The amount of water that the water supplier can reasonably rely on receiving from other water supply projects, such as conjunctive use, reclaimed water, water conservation, and water transfer, including programs identified under federal, state, and local water initiatives such as CALFED and Colorado River tentative agreements....”

designed to ... 3) provide SDCWA with a reliable, long-term and cost effective water supply to provide drought protection and to accommodate current *and projected* demands for municipal and agricultural water.”²² (emphasis added) Under S.B. 221, the approval of the water transfer would enable SDCWA to demonstrate a reliable supply of water sufficient to supply large new developments; without the water transfer, SDCWA would not be able to demonstrate such reliability, preventing the approval of such new developments. The proposed water transfer would thus have clear growth-inducing impacts within the SDCWA service area.²³ The DEIR itself states that the Proposed Project “would improve the reliability of SDCWA’s water supply” (5-40).

- **Recommendation** – Include a comprehensive assessment of the full range of potential impacts to the SDCWA service area, due to the reliability of supply of up to 300 KAF/year of water under the Proposed Project and Alternative 4.

Air Quality

The DEIR characterizes the indirect air quality impacts due to the potential for windblown dust from exposed shoreline as a “Potentially significant unavoidable impact” (Table 3.7-1), based on a speculative, qualitative assessment. From the description, it does not appear that any empirical studies were conducted to assess the potential for fugitive emissions from exposed lakebed. Given that air quality conditions in the Salton Sea area already “violate national and state ambient air quality standards” (3.7-34), the failure to perform a more rigorous assessment is a salient failing of the DEIR.

The DEIR notes that the proposed project could expose as much as 50,000 acres of lakebed (more than 78 square miles), beyond the baseline. Thus, the proposed project would expose more lakebed than was exposed by the diversion of water from Owens Lake, where the exposure of more than 60 square miles of lakebed has led to the largest dust storms in the U.S. Owens lakebed emits as much as 290,000 tons of PM₁₀ annually, degrading human health in the region.²⁴ Even if Salton Sea lakebed were only 1% as emissive as that of Owens lakebed, emissions would still exceed federal standards. Suggesting that such emissions are “potentially significant” is a remarkable understatement.

- **Recommendation** - conduct appropriate air quality monitoring and quantify the potential for fugitive emissions from exposed lakebed.

The DEIR’s finding that the fugitive dust emissions caused by the exposure of Salton Sea lakebed is an “unavoidable impact” (3.7-36) ignores the on-going mitigation efforts at Owens

²² IID and SDCWA Water Conservation and Transfer Project, “Project Newsletter,” p.1, dated November 1999.

²³ The Nature Conservancy and the Association for Biodiversity Information has designated much of the SDCWA service area as one of the six greatest hotspots for imperiled species in the U.S., supporting at least 138 endemic species and 158 imperiled species. Habitat loss and fragmentation, due to residential and urban development, is a principal cause of species endangerment. The National Wildlife Federation’s *Paving Paradise: Sprawl’s Impact on Wildlife and Wild Places in California* (Feb. 2001) found that urban sprawl is the leading cause of species endangerment in California. The proposed water transfer could enable the continued urbanization of the SDCWA service area and the destruction of a large proportion of the remaining native habitat in the area.

²⁴ SWRCB Defenders of Wildlife exhibit 17, testimony of Theodore D. Schade, Great Basin Air Pollution Control District.

Lake. Suggesting that the improbable HCP Approach 2 would be the only effective means of mitigating such emissions is disingenuous at best.

- **Recommendation** – Develop an adequate dust control plan to mitigate for fugitive dust emissions arising from exposed Salton Sea lakebed. Such a plan could include shallow flooding and/or managed vegetation atop exposed lakebed.

Socio-economics and Environmental Justice

The DEIR employs a misleading method to determine the environmental justice impacts of the proposed water conservation and transfer project, by limiting its appraisal to those census tracts wherein the percentage of minority and/or low-income households exceeded the county average (3.15-13). This census tract-based approach is inconsistent with Executive Order 12898, which requires an absolute – not a relative – assessment of whether federal actions “have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.” Executive Order 12898 focuses on ethnicity and economic status, and does not suggest the specifically place-based analysis used by the DEIR. The DEIR fails to justify its census-tract appraisal, leading the reader to believe it was developed solely to mask the impacts that the project would cause across much of the IID Water Service Area and AAC and Salton Sea geographic subregions.

Yet this peculiar census-tract appraisal provides the basis for further obfuscation, as the DEIR claims that “Although [low-income and minority] populations exist in specific areas within the subregion, the environmental effects associated with water conservation and transfer would not disproportionately affect those areas specifically.” (3.15-14). That is, the DEIR identifies particular census tracts within the subregion based on an arbitrary set of criteria, masking the environmental and socio-economic impacts that would be expected to affect the subregion as a whole (which is disproportionately minority and low-income relative to the ROI as a whole, relative to the state, and relative to the nation). Then, the DEIR claims that because impacts would be felt across the subregion as a whole, they would not disproportionately impact such populations.

The pertinent question is the relative basis of the standard of measurement. The DEIR fails to establish the County of Imperial as a reasonable standard, particularly given that the region of influence includes a much broader area, and given that the county itself is disproportionately poor and minority. The environmental effects, including the potential for a dramatically increased exposure to airborne emissions and consequent health effects, would be borne in large measure by poor and minority populations. Yet the DEIR fails to describe these disproportionate impacts.

Additionally, these populations consume fish caught from the Salton Sea and tributaries. As described elsewhere in the DEIR, the proposed project would increase selenium concentrations in such fish, and eventually eliminate fish from the Salton Sea entirely. Yet the DEIR fails to describe these, or any other, impacts that would disproportionately impact poor and minority populations.

- Recommendation – include a detailed, referenced description of the range of socio-economic and environmental impacts, including health impacts resulting from increased selenium levels and increased fugitive dust emissions, that would be borne by the disproportionately poor and minority populations within the IID Water Service Area and AAC subregion.

The DEIR asserts that socio-economic impacts would vary, depending upon whether on-farm conservation improvements or fallowing were used to generate the transferred water, from a gain of 710 jobs and \$55 million in annual business output, to a loss of 1,400 jobs and \$97.5 million in business output. The implementation of HCP Approach 2 would eliminate another 750 jobs and \$55 million in business output from this fallowing scenario (Table 3.14-1), from a total Imperial County civilian workforce of 58,500 in 2000.

These job losses would disproportionately impact poor and minority populations: “Farm laborers, which are a predominantly low-income, minority population group, comprise a substantial component of the overall population demographics within the subregion” (3.15-3). Yet the DEIR offers the perfunctory appraisal, “The effect on this population group would be a loss of employment resulting from the reduction in acres that are in agricultural production.” This is not a reasonable assessment of impacts to poor and minority populations. Further job losses, in a community that suffers disproportionately high unemployment, merits more than one sentence of appraisal.

- **Recommendation** – within Section 3.15, provide a detailed description of the socio-economic and health indicators of poor and minority populations within the IID Water Service Area and AAC subregion, and describe how the proposed project could exacerbate these conditions.

Errata

The DEIR QSA implementation scenario (see Table 2-5, p 2-37) shows transfers beginning year 2002 (the current year), yet the transfer agreements have not been finalized and to date no farmer in the Imperial Valley has subscribed to the conservation program, making it extremely unlikely that any water will be conserved or transferred this calendar year.

- **Recommendation** - Table 2-5 and all other pertinent tables should be updated to show the transfer beginning in 2003. Additionally, all projections within the text that are based on the incorrect starting date of 2002 should be corrected.

Neither “HCP IT” nor “ROI” is listed or defined within the “Acronyms” section.

Please do not hesitate to contact me if you would like clarification of any of the above comments or recommendations.

Sincerely,
(signed)

Michael Cohen
Senior Associate