

SALTON SEA WATER IMPORTATION SUBMITTAL REVIEW

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Technical Memorandum (TM) #2.5

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Subject Area: Screening and Evaluation Approach
Topic: Fatal Flaw Criteria

This Technical Memorandum (TM) was prepared as part of the Salton Sea Water Importation Proposal Review to provide information to support and reflect the Independent Review Panel's (Panel) evaluation of submitted ideas to restore the Salton Sea by water importation and provide the Salton Sea Management Program (SSMP) with approaches that are feasible. Parts of this TM may be used in the Panel's Screening Report, Fatal Flaw Report, Feasibility Report, and/or Summary Report (Reports). In the event that any discrepancies are found between the Reports and this TM, the Reports shall take precedence.

The purpose of this TM is to document the updated approach for evaluation of proposals in the Feasibility stage. All project concepts that were responsive to the RFI and passed screening will be further evaluated in the Feasibility Analysis, starting with a fatal flaw analysis. Any concepts that do not pass the fatal flaw analysis will not receive further review under the feasibility analysis.

This TM documents the Panel's Fatal Flaw Criteria. The next step will be to proceed to subjecting the submissions to the criteria and producing the fatal flaw section of the Feasibility Report.

Parts of this TM may be used in the Panel's Feasibility Report, and/or Summary Report. In the event that any discrepancies are found between the Reports and this TM, the Reports shall take precedence.

1.0 Fatal Flaw Analysis

Concepts that pass the screening process will be evaluated in the Feasibility Analysis. The RFI States that required information in each response includes the planning and design process of the project including the following language on project feasibility:

"The description should include the following:

•**Project Feasibility** -- Documentation of the engineering feasibility of the project. Documentation should include at a minimum: system capacity; pumping requirements; channel and pipe size; water quality; other associated infrastructure such as desalinization, fish or trash screens, etc.; and expected energy use.”

The burden is on the respondents to the RFI to provide sufficient information for the Panel to evaluate the feasibility of project concepts. The respondent possesses the knowledge and expertise to demonstrate the efficacy of the concepts in its submission. The Panel will evaluate the viability of each submission to plan, construct, and operate a project.

The Feasibility Analysis will be comprised of two components: Fatal Flaw Analysis and Feasibility Analysis.

1.1 DRAFT FATAL FLAW CRITERIA

The Fatal Flaw analysis will be applied to all submissions that pass the screening process. Fatal Flaw Criteria are presented in Table 1.

Components of concepts that do not pass the Fatal Flaw Analysis may be revisited at a later date. The Panel may choose to evaluate and/or recommend components of concepts that do not pass the Fatal Flaw Analysis for use in interim and/or long-term solutions.

With respect to all of the Fatal Flaw Criteria, there is an assumption that the state will only pursue one water import project large enough in scope to achieve long-term restoration of the Salton Sea. However, it is possible that a portfolio of projects, or “several small” approach could be preferable to a “single large” approach. When applying these criteria to the submissions, the Panel may choose to consider the possibility of a portfolio approach to long-term restoration.

Table 1: Draft Fatal Flaw Criteria

No.	Category	Draft Fatal Flaw Criterion
1	Risk	The submission is technically sound and utilizes established, non-speculative technologies.
2	Risk	The submission would not create significant risk of catastrophic flooding.
3	Legislative	The submission will meet the State’s commitments to the region as stated in the Quantification Settlement Agreement.
3a	Public Health	The submission results in improved air quality (1) through reduction of exposed playa to levels consistent with those prior to 2009, after which the region’s air pollution level persistently exceed the air quality standards, or (2) that reduces dust emissions by employing other mechanisms.

No.	Category	Draft Fatal Flaw Criterion
3b	Ecology	The submission’s stated salinity goals, confirmed by modeling projections, are within Protected Species and Species of Importance salinity tolerance range.
4	Hydrology	No extraction or infrastructure being proposed will cause significant ecological impacts to the Biosphere Reserves and Ramsar wetlands of international importance located within the Upper Gulf of California & Lower Colorado River Delta.
5	Sustainability	Solutions must be viable for the project duration (until 2078).
6	Sustainability	The submission must demonstrate sufficient renewable and/or zero-carbon energy sources to make the long-term operation of the project carbon neutral.

1. The submission is technically sound and utilizes established, non-speculative technologies.

Submissions must be technically sound to pass the Fatal Flaw Analysis. Concept design and engineering considerations include, but are not limited to: intake structures, pumping and conveyance, energy sources, salt management strategies, constructability, and long-term operations.

The water importation project must be based on established, proven technologies. Established technologies deployed in novel ways are acceptable. Technologies that have minimal or no performance record present too much risk for a project of this immediacy, magnitude, and importance.

Failure of a submission to meet this criterion does not constitute a judgment by the Panel on the proposed technology, the technology’s manufacturer/provider, or the respondent. Rather, the Panel is concerned about the amount of time it would take to establish the technical viability of emerging technologies in light of the immediate needs in the region, as well as the additional risks of scaling up emerging technologies to the capacity needed to address the region’s problems.

2. The submission would not create a risk of catastrophic flooding in the Salton Sea basin.

The Salton Sea’s elevation is over two hundred feet below sea level. Many of its surrounding towns from Indio to Calexico and associated farmland in the Salton Basin are also at or below sea level. No project should introduce the possibility of a catastrophic flood of imported water into the basin caused by failures due to earthquakes, fire, mismanagement, or other causes.

3. The submission will meet the State’s minimum commitments to the region as stated in the Quantification Settlement Agreement.

The State of California, as a party to the 2003 Quantification Settlement Agreement, committed to implementing and funding necessary activities to address two problems: 1. Public health concerns and 2. Wildlife impacts at the Salton Sea. The submission must demonstrate a strong likelihood of meeting the State's obligations.

a. The submission must result in improved air quality through reduction of exposed playa and/or dust control.

Local public respiratory health has been in decline due in part to wind-borne particulate matter from the exposed playa as the lake shoreline recedes. Projects must reduce exposed playa and/or utilize dust control measures, and therefore improve air quality.

b. The submission's salinity goals and modeled outcomes are within Protected Species and Species of Importance salinity tolerance range.

Some species have special status in the Salton Sea region, among them the Desert Pupfish, American White Pelican, and Yuma Ridgway Rail. Any long-term project to restore the Salton Sea should result in salinity ranges consistent with their viability and the viability of their food webs. Submissions that exceed the maximum or drop below the minimum salinity needed to preserve these species will not be considered.

4. No extraction or infrastructure being proposed will cause significant ecological changes within the Biosphere Reserve of the Upper Gulf of California & Colorado River Delta.

The Biosphere Reserve of the Upper Gulf of California & Colorado River Delta is a UNESCO World Heritage Site, and consists of a core area, buffer zone, and transition area. Additional areas adjacent to the Reserve, including the Laguna Salada, are designated as Ramsar Wetlands of International Importance. The Panel recognizes the critical importance of these areas.

While some construction activity may be allowable, extraction of water and/or construction within the area may result in significant ecological changes and are very likely to be rejected by the governing bodies responsible for the Reserve. This creates a risk of delay or cancellation that is unacceptable to a project of this level of importance to California.

5. Solutions must be viable for the project duration (until 2078)

The charge of the Panel is to assess the feasibility of water importation as a long-term strategy for restoration of the Salton Sea. The study period as defined by the Salton Sea Ecosystem Restoration PEIR is consistent with the complete implementation period for the QSA, which is defined as 2003 to 2078. Concepts that have a shorter period of beneficial impact will not receive further consideration.

6. *The submission must demonstrate sufficient renewable and/or zero-carbon energy sources to make the long-term operation of the project carbon neutral*

The State of California has enacted legislation (SB 100) to have “eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers and 100 percent of electricity procured to serve all state agencies by December 31, 2045.” Governor Newsom has requested that this process be accelerated to meet a new target of 2035. Large scale conveyance of water and potential desalination presented in the submissions will require a significant amount of energy. Submissions must demonstrate the ability to comply with SB 100.