

DRAFT (For Discussion)

Evaluating Best Available Science for Delta Conveyance Proposals

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Rational planning is based on the explicit comparison of a range of alternatives in terms of their impacts on performance for important objectives. Federal and state laws requiring and governing Environmental Impact Statement (EIS) and Environmental Impact Report (EIR) documents generally are intended to support a rational and structured decision-making process, by identifying major environmental impacts and mitigation options for various project alternatives.

The Delta Independent Science Board (Delta ISB) is charged under California's 2009 Delta Reform Act with assessing the scientific information and analysis of Bay-Delta Conservation Plan (BDCP) EIR, with the intent of reviewing the soundness of scientific work and whether the best available science has been employed. This charge includes: "(c) The department [DWR] shall consult with the council and the Delta Independent Science Board during the development of the BDCP . The council shall be a responsible agency in the development of the environmental impact report. The Delta Independent Science Board shall review the draft environmental impact report and submit its comments to the council and the Department of Fish and Game." [CA Water Code § 85320 \(c\)](#)

Following this charge, the Delta ISB reviewed draft environmental documents for BDCP (later California WaterFix) in 2014, 2015, and 2017. These reviews identified scientific strengths and weaknesses in these multi-volume environmental documents and made recommendations for improving these documents for scientific clarity, completeness, and decision-making utility. Some of these environmental impact reports exceeded 39,000 pages, and these Delta ISB reviews have sometimes exceeded 100 pages.

Later in 2022, for the fourth time in a decade, the Delta ISB will likely review environmental impact documents for related proposed major changes in conveyance for Delta water exports (a Delta tunnel). The Delta ISB indicated its plan to review environmental documents for the Delta Conveyance Project, as it did with previous Delta conveyance proposals, as part of its [comments to DWR](#) in April 2020 on its Notice of Preparation for the Project. This is in accordance with the Delta ISB's responsibilities to provide scientific oversight of programs that support adaptive management, as specified under the Delta Reform Act of 2009 (CA Water Code § 85280(a)(3)) and as a reasonable expectation in light of its legislatively mandated review of BDCP environmental documents (CA Water Code § 85320 (c)).

Both the writing and review of these new environmental impact documents are causes for trepidation due to these documents' importance to official decision-makers, project

DRAFT (For Discussion)

proponents, opponents, and diverse stakeholders (as well as their burdens on writers, reviewers, and readers).

This memo offers some thoughts on lessons from Delta ISB's previous reviews that might a) help the Delta ISB prepare for this major review and b) help agencies and authors prepare better and more useful environmental impact documents.

Major findings from previous reviews relevant for current EIR and EIS authors and sponsoring agencies

- The main finding from the three previous reviews was frustration with the lack of concise and explicit comparison of project alternatives in terms of major project objectives and impacts. Major project objectives were not concisely stated and evaluations of project alternatives were not made or summarized in these terms. The Delta ISB prepared summary tables and figures that might be adapted for this purpose, one of which appears below. **It should not be the responsibility of EIR and EIS reviewers and readers to develop comparative summaries of performance of project alternatives from immense multi-volume environmental planning documents. Effective environmental documents for such projects require concise and articulate summaries at chapter and document levels.** A 150-page summary is not an effective summary.

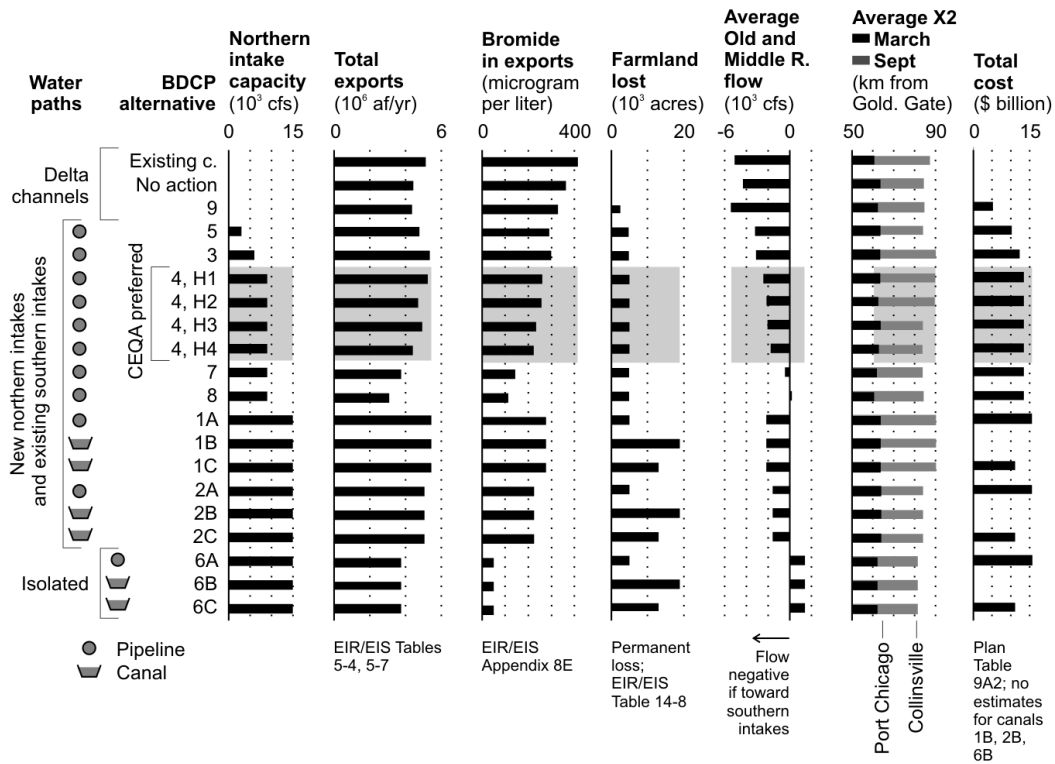


Figure 1. Graphical comparison of 2017 alternative proposals for Delta conveyance (Delta ISB 2017)

DRAFT (For Discussion)

2. Environmental documents are more than required legal documents; they are opportunities for project proponents to articulate rational comparative justifications for projects based on their estimated impacts and potential benefits. This opportunity has not been effectively employed with prior environmental documents, to the detriment of project proposals and agency reputations.
3. Long-term impacts, with respect to sea level rise, climate change, Sacramento Valley and San Joaquin Valley groundwater storage and overdraft, in-Delta and export-dependent agriculture (particularly San Joaquin Valley water supply reliability), likely future environmental regulations, invasive species, and other impacts and changes are important under-addressed topics. The project's potential impacts for future Delta conditions also seem relevant, although projections will always have substantial uncertainties. The public interest is served by clear representation and discussion of the relative risks and impacts across alternatives with expected short and long-term environmental, economic, and social changes. Assessing risks for different groups and species (including those not yet endangered) seems relevant.
4. Project construction impacts to Delta residents, economic activities, and recreation were extensively detailed in past documents, but were not "presented in a coherent and understandable way" that would aid public discourse and decision-making.
5. Delta levee risks and their practical and programmatic interactions with Delta conveyance were not explicitly explored in past environmental documents.
6. Impacts on fish entrainment, cueing, fish habits and food webs, natural flow disruptions, etc. were not systematically and proactively addressed in past environmental documents. Recent research on California fish needs and sustainability can be helpful here.
7. Habitat restoration and mitigation are difficult activities with often unreliable and uncertain outcomes. Adaptive planning and implementation are needed to promote success of these activities, including systematic field experimentation and testing of restoration activities across locations and time. An adaptive restoration plan can help manage uncertainty about future conditions and provide a process and resources for handling inevitable difficulties. The project will need to adapt. In addition, difficulties of addressing the "recovery debt" from the time needed to recover environmental functions, between initial degradation and the fulfillment of mitigation activities, are often inadequately addressed.

Some ideas for forthcoming Delta ISB Delta conveyance proposal reviews

Past reviews also have some potential lessons for how the Delta ISB conducts forthcoming Delta conveyance proposal EIR and EIS reviews:

1. Early on, obtain tables of contents for the forthcoming documents and organize Delta ISB members to cover critical chapters and sections, with each chapter having primary

DRAFT (For Discussion)

and secondary reviewers. Ideally, for better overall integration and quality, no individual Delta ISB member should review a chapter alone. Due to scarce expertise or perceived relative importance, some chapters might receive less in-depth review than others.

2. Because many Delta ISB members are fairly new to California, general chapter review assignments should be made early enough for members to begin obtaining relevant background knowledge for California well before the EIR and EIS documents become available.
3. To supplement its legislative charge, the Delta ISB should ask the Delta Plan Interagency Implementation Committee (DPIIC) to provide a list of 5 to 10 particular topics of concern for the forthcoming EIR and EIS documents. Individual agencies should, of course, feel free to add their individual agency topics of concern, overall and/or organized by chapter topic.
4. A list of major topics of concern from previous reviews, organized by chapters, might be useful for supplementing and guiding the development of new review comments. The Delta ISB might request the agencies sponsoring the forthcoming EIR and EIS to write a short letter summarizing how the Delta ISB's previous document concerns were addressed.

The public policy intent of environmental impact documents is to provide structured information for public decision-making. This is a tremendously important and difficult task, and becomes less effective if the writing of these documents is driven more by the letter of the law than its spirit. The result has often been expensive environmental documents that create far more eyestrain and exhaustion than insight.

I hope this letter provides some material for discussions that improve the forthcoming environmental documents and Delta ISB review.

Further readings

Overview:

[2022 DWR Update to the Delta ISB on the Delta Conveyance Project](#)

Previous Delta ISB reviews of Delta conveyance environmental impact documents:

2017 - 6/16/2017 - [Review of the Final Environmental Impact Report/Environmental Impact Statement for California WaterFix](#)

2015 - 9/30/2015 - [Review of Environmental Documents for California WaterFix \(Partially Recirculated Draft Environmental Impact Report/Supplemental Draft Environmental Impact Statement for BDCP/California WaterFix\)](#)

2014 - 5/15/2014 - [Review of the Draft EIR/EIS for the Bay Delta Conservation Plan](#)

DRAFT (For Discussion)

Legal policy:

[Delta Reform Act of 2009, CA Water Code § 85320 \(2014\)](#)

[NEPA on EIS and its purposes](#)

NEPA (1969): [§ 1502.1 Purpose of environmental impact statement](#). The primary purpose of an environmental impact statement prepared pursuant to section 102(2)(C) of NEPA is to ensure agencies consider the environmental impacts of their actions in decision making. It shall provide full and fair discussion of significant environmental impacts and shall inform decision makers and the public of reasonable alternatives that would avoid or minimize adverse impacts or enhance the quality of the human environment. Agencies shall focus on significant environmental issues and alternatives and shall reduce paperwork and the accumulation of extraneous background data. Statements shall be concise, clear, and to the point, and shall be supported by evidence that the agency has made the necessary environmental analyses. An environmental impact statement is a document that informs Federal agency decision making and the public.

CEQA: [Association of Environmental Professionals 2020 CEQA Guidebook](#)

Delta Reform Act of 2009:

85280. (a) (3) The Delta Independent Science Board shall provide oversight of the scientific research, monitoring, and assessment programs that support adaptive management of the Delta through periodic reviews of each of those programs that shall be scheduled to ensure that all Delta scientific research, monitoring, and assessment programs are reviewed at least once every four years.

(4) The Delta Independent Science Board shall submit to the council a report on the results of each review, including recommendations for any changes in the programs reviewed by the board

85308. The Delta Plan shall meet all of the following requirements:

(a) Be based on the best available scientific information and the independent science advice provided by the Delta Independent Science Board.

85320. (c) The department shall consult with the council and the Delta Independent Science Board during the development of the BDCP. The council shall be a responsible agency in the development of the environmental impact report. The Delta Independent Science Board shall review the draft environmental impact report and submit its comments to the council and the Department of Fish and Game.