

Science Needs Assessment Science for a Rapidly-Changing Delta

Draft Outline (12/7/2020)

If you need assistance interpreting the content of the document, please email disb@deltacouncil.ca.gov.
This document makes use of bold and italics for emphasis.

Summary: Problem, major conclusions, and recommendations (2 pp)

Lead with primary objectives; include incremental and strategic change recommendations and the urgent need for bolder, forward looking and better integrated science and management program.

1. **Introduction** (1 to 2 pp)
 - a. Purposes: Identify science priorities and science integration needs in the context of a rapidly changing Delta
 - b. Scope of report: Delta-wide science challenges that span mandates of multiple agencies.
 - c. Input to report: Symposia, focused discussions, reports, workshop
 - d. Connect to other forward-looking initiatives: Water Resilience Portfolio, Nature-based Solutions Executive Order, etc.
2. **Problem Statement: Delta Science with Rapid and Uncertain Changes** (3 pp)
 - a. Overarching Management Challenge: Forecast and prepare for a changing Delta
 - i. Climate change: Sea level and temperature rises, Precipitation patterns, Extremes
 - ii. Invasive species and native species declines
 - iii. Catastrophic structural Delta failures: Floods, Earthquakes, Mega-droughts
 - iv. Environmental flows, SGMA, and new regulatory strategies (voluntary agreements)
 - v. Future water demands and infrastructure, etc.
 - b. Certainties of Major Change – Some changes are nearly certain and some are ongoing
 - c. Science for managing the Delta as a complex, integrated and connected system - Agency problems and agency-spanning problems
 - d. Where are the gaps in science, expertise, and organization
3. **Strategic and Bold Science Priorities** (<3 pp) (see below)
 - a. About five examples of large interagency needs for collaborative integrated solutions
4. **Governance and operation of the Delta scientific enterprise** (<5 pp) (see Appendices)
5. **Findings and Recommendations** (3 pp)
 - a. Improve predictive capability of Delta science as a centerpiece for integration
 - b. Develop understanding of Delta ecosystems under changing drivers and ecosystem responses
 - c. Develop mechanisms to set high-level, multi-agency priorities
 - d. Manage the Delta as a complex, integration and connected system responding to both natural and management drivers
 - e. Develop a collaborative Delta scientific enterprise (include some implementation steps)
6. **Next Steps** (1 p)

Appendices

- A. Types of Scientific Expertise Needed (<3 pp)

ROUGH DRAFT – DO NOT CITE (12/7/2020)

- B. A concise overview of scientific organization approaches
- C. A Collaboratory proposal?
 - a. Resource List and links (Rapid change report, etc.)

References