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Elements for an Outline of a Review of Water Supply Reliability Estimation related to the Sacramento-San Joaquin Delta

Delta Independent Science Board

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Summary findings and recommendations

Section outlines

1) Introduction
    a) Purpose: Uses of water supply reliability estimates– questions asked
    b) Scope: Urban, agricultural, environmental, regulatory perspectives, regional systems
    c) Incomplete inventory of reliability estimation efforts
    d) Changing challenges and questions (Portfolios in reliability, Water quality, Environmental water reliability, Climate change, Conflicts in water management)
    e) Structure of report
2) Metrics of water supply reliability
3) Scientific underpinning of trends in water supply reliability
    a) Portfolios in reliability
    b) Water quality
    c) Environmental water reliability
    d) Climate change
    e) Multiple objectives and conflicts in water management
4) Developing and communicating insights for managers and policymakers
    a) Long-term education and insights for policy-makers
    b) Transparency
    c) Potential for decision analysis
5) Quality control in reliability estimation
    a) Peer review
    b) Common standards or expectations?
    c) Common efforts
        (1) Land use, inflows, groundwater modeling, portfolio characterization, etc.
        (2) Common water accounting
6) Priorities for future studies
    a) Ecological and environmental water reliability
    b) Incorporating climate change and sea level rise
    c) FIRO
    d) Fragility analysis
7) Conclusions and Recommendations

References

Appendices

1. A review of water supply reliability estimation
2. Inventory of Water supply Reliability Estimations in California
3. Case studies of successes

Boxes

- Representing Hydrology – “design drought” (EBMUD), historical unimpaired flows (DWR et al.); Re-sequenced historical flows (MWD), Paleo-data (various); Climate change adjusted historical inflows (many); Climate model precipitation and runoff, other?

- Representing water demands – single targets, demand curves; time frames

- Representing ecosystems – minimum instream flows, function flows (single species, ecosystems); unimpaired flow alternations; partial or fuller hydro-ecosystem modeling; land-water floodplain/wetland effects; other?

- Integrating portfolios (table of elements)

- Metrics of reliability