Review of Water Supply Reliability Estimation Related to the Sacramento-San Joaquin Delta

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Jay R. Lund

Delta Independent Science Board

Background

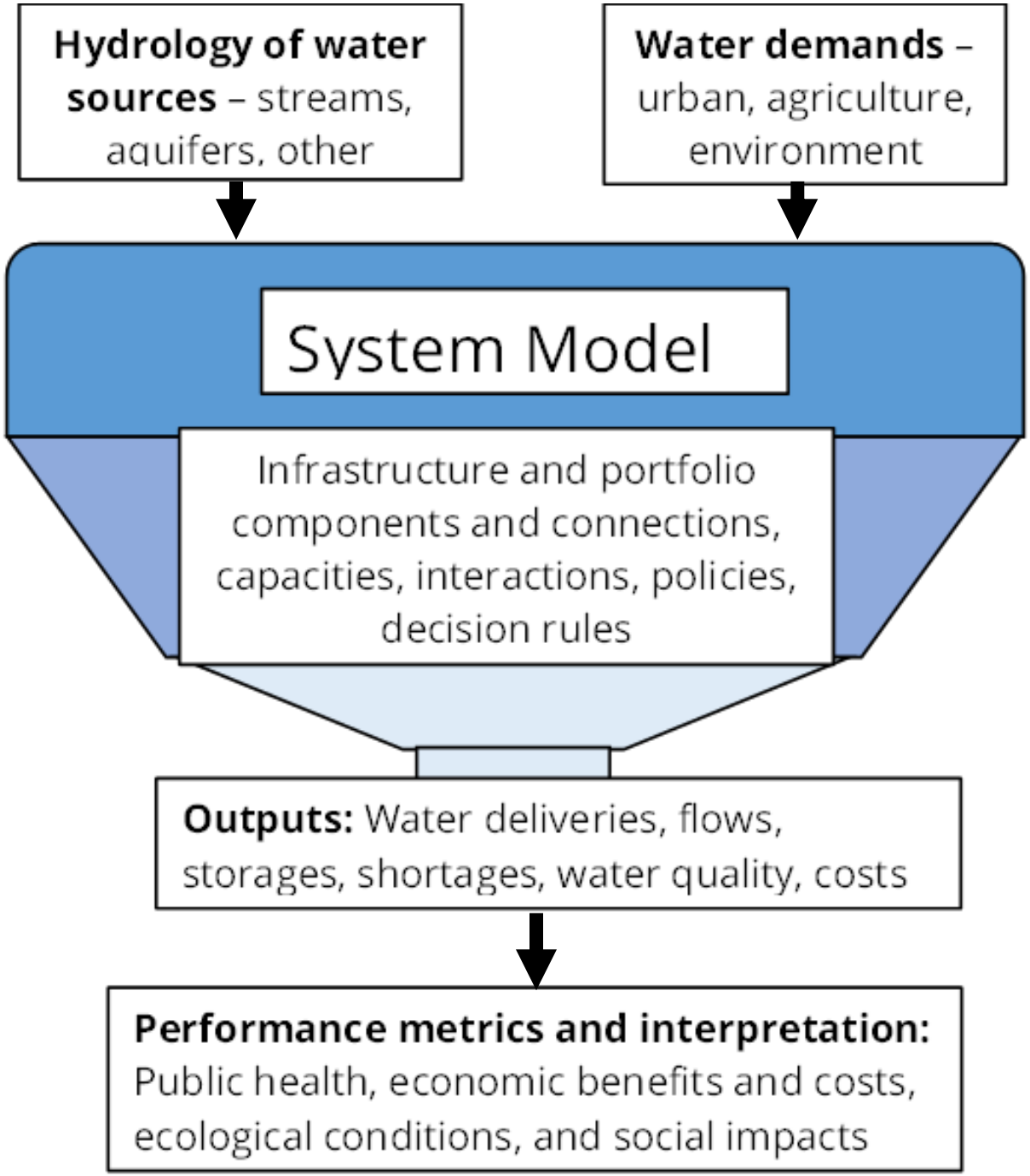
1. DISB legislative charge (Delta Reform Act 2009)
2. "Water supply reliability" is a co-equal goal, important and controversial
3. This first water reliability review is mostly methodological
4. Report should be released soon

Here are some major findings and recommendations:

Supply Reliability vs. System Performance Reliability

1. We have done well with studies of water supply reliability, such as DWR's DCR reports
2. But today's systems are integrated portfolios of sources, operations, and demands
3. Source reliability estimates need to expand to system performance reliabilities
4. Performance in terms of health, economic, ecosystem, and social performance

From source reliability to more integrated system reliability:



Climate change study uncertainties

1. Future global emissions.
2. GCM model uncertainties
3. Bias correction uncertainties
4. Downscaling uncertainties
5. Landscape and precipitation-runoff uncertainties
6. Water demand uncertainties
7. Adaptation uncertainties – how we react!

High variance of climate impact estimates!

Challenges

1. Reliability estimation and management involves many risks and uncertainties.
2. Preparing for changes in climate, water demands, etc.
3. Communications and integrating reliability into decision-making
4. New staff education and modeling practices
5. Probabilistic and non-probabilistic reliability – Surprises!