



Adaptive Strategies for the Colorado Basin

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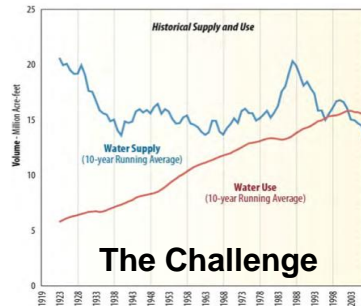
Adaptation Futures Conference

May 10, 2016

Colorado Basin Faces Significant Imbalance Between Supply and Demand

In collaboration with seven states and other users, Bureau of Reclamation:

- Assessed future water supply and demand imbalances over the next 50 years
- Developed and evaluated opportunities for resolving imbalances



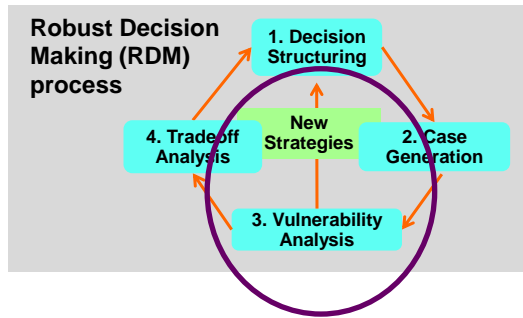
- Adaptive strategies played a key role in Reclamation Study
- Subsequent dissertation (Bloom 2015) used adaptation pathways to organize:
 - Adaptive responses into a small number of clear pathways
 - Discussion of signposts

Bloom, E. (2015). Changing Midstream: Providing Decision Support for Adaptive Strategies Using Robust Decision Making. RAND: RGSD-348

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Use Robust Decision Making to Address The Challenge

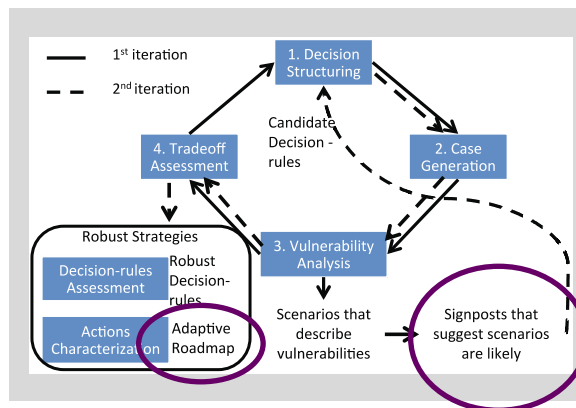
- Stress test plans to find vulnerabilities
- Use this information to identify adaptive responses
 - Adaptive pathways
 - Signposts for switching among pathways



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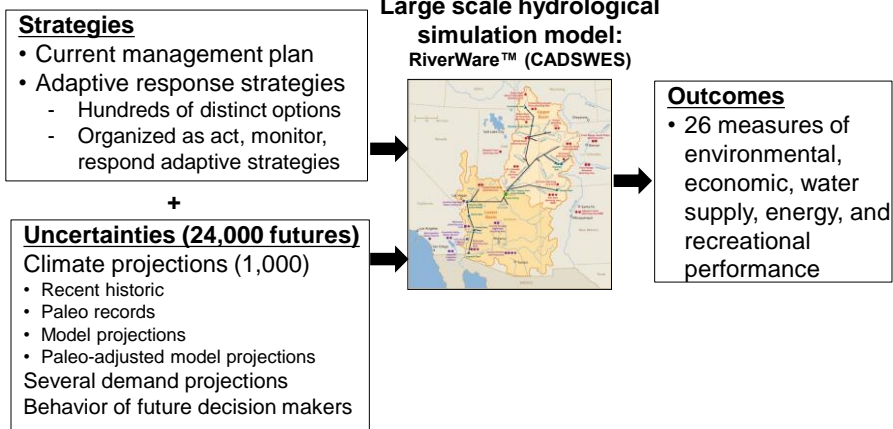
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Analysis Stress Tests Current and Proposed Managements Plans Over Many Futures



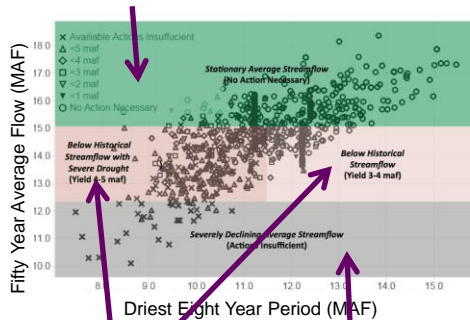
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Analysis Illuminated Vulnerabilities of Plans and Helped Identify Responses

Key drivers of vulnerability for current river management plan are both climate-related:

- Fifty year average river flow
- Driest eight year period

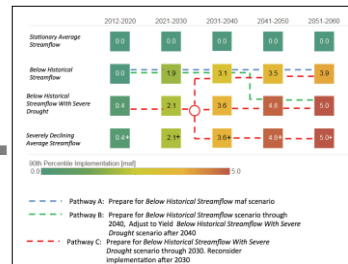
Business as Usual



Two Adaptive Transformative

Analysis suggests rule-based adaptive strategies, which include:

- **Near-term actions**
- **Trends to monitor**
- **Contingency actions**



Bloom, E. (2015). Changing Midstream: Providing Decision Support for Adaptive Strategies Using Robust Decision Making, RAND: RGSD-348

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Analysis Suggests Signposts That Accompany Each Path



This adaptive strategy monitors:

- Average streamflow
- Any available decadal climate forecasts

