CalSim and CalLite Model Applications

California Water and Environmental Modeling Forum

April 11th, 2016

Monday, April 11. 3:30pm – 5:15pm
Sierra 1

- **Presentation 1**: *CalSim Updates*
  - Raymond Hoang (DWR)

- **Presentation 2:** *CalLite Updates*
  - 2a: CalLite Tulare Basin Derya Sumer (CH2M)
  - 2b: CalLite Power Module N. Taraky (DWR)

- **Presentation 3:** *What's Controlling Delta Outflow?*
  - Karandev Singh (DWR)

- **Presentation 4:** *Decision Scaling with CalLite to Identify Climate Change Vulnerabilities to the State Water Project*
  - Andrew Schwarz (DWR)

- **Presentation 5:** *Cost Allocation and Flow Tracker*
  - Nancy Parker (Reclamation)

- **Presentation 6:** *CalSim 3.0 and the San Joaquin: Has the Model Changed?*
  - David O'Connor & Jim Shannon (U.S. Bureau of Reclamation)

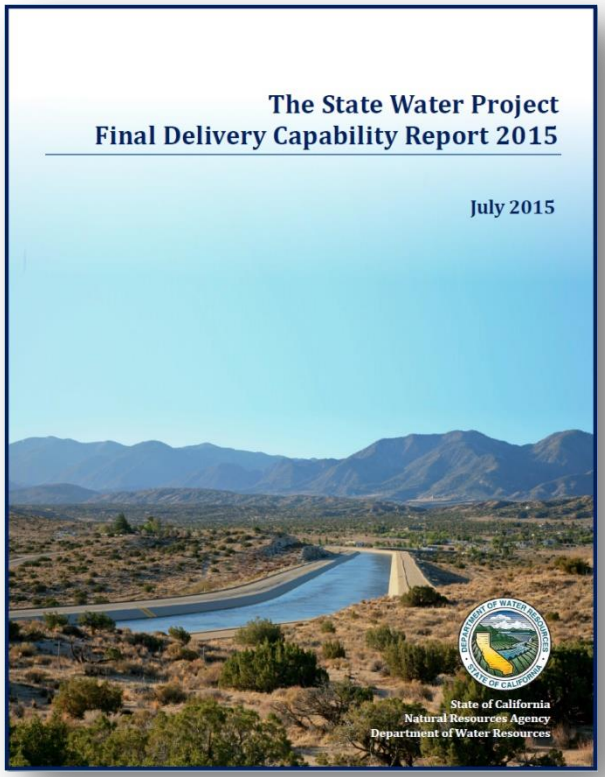
CalSim Updates

California Water and Environmental Modeling Forum

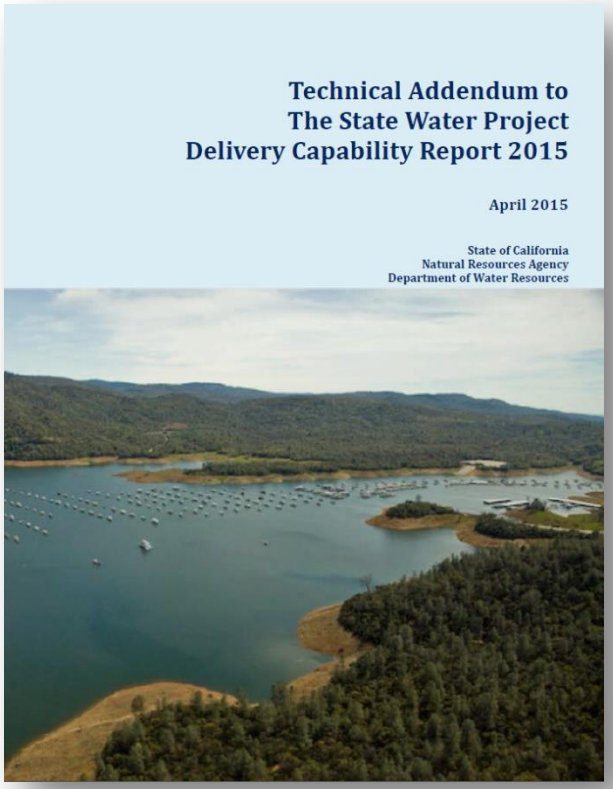
April 11th, 2016

2015 Delivery Capability Report

Updated 2015 DCR Existing Base study and developed four “future” alternative studies: ELT, ECHO, ECLO and Alternative 4 H3.



Existing Conditions Study (Base Study)



Four Future Conditions Studies:

- ELT
- ECLO
- ECHO
- Alternative 4

2015 Delivery Capability Report

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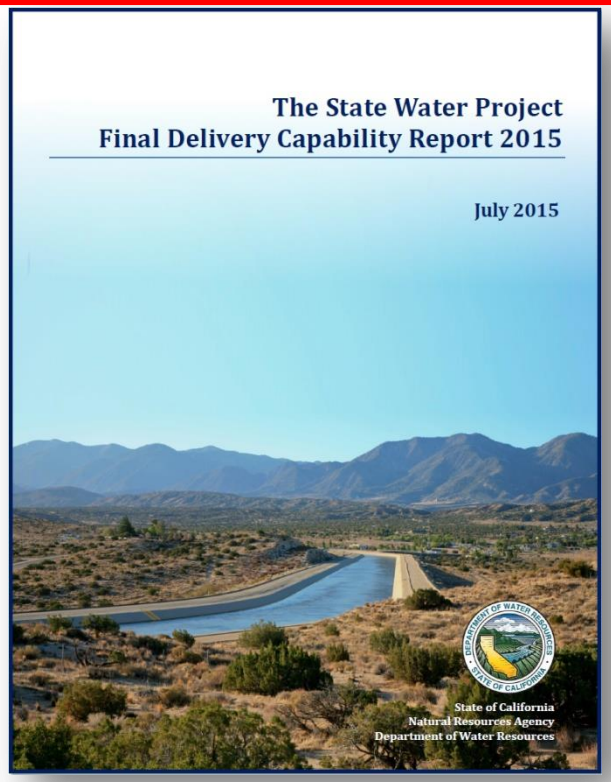
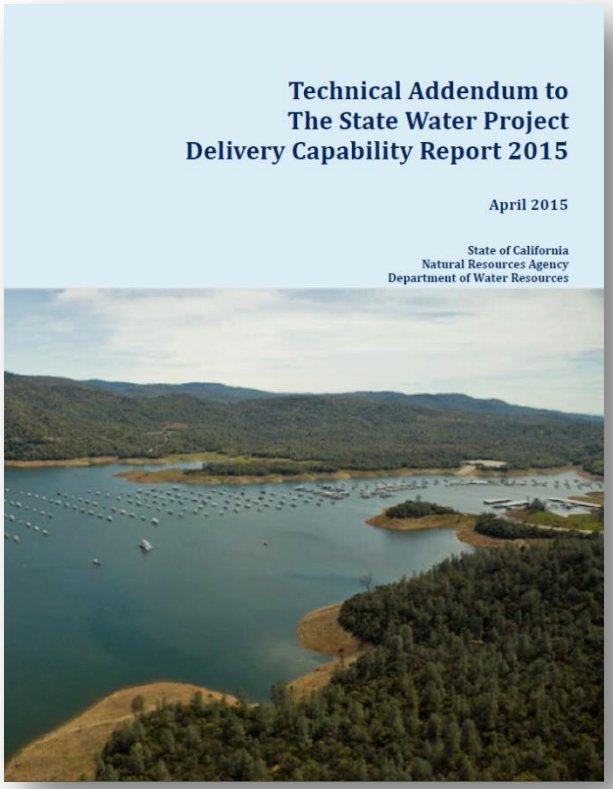


Existing Conditions Study
(Base Study)

Updated from 2013 Base Study



Four Future Conditions Studies:

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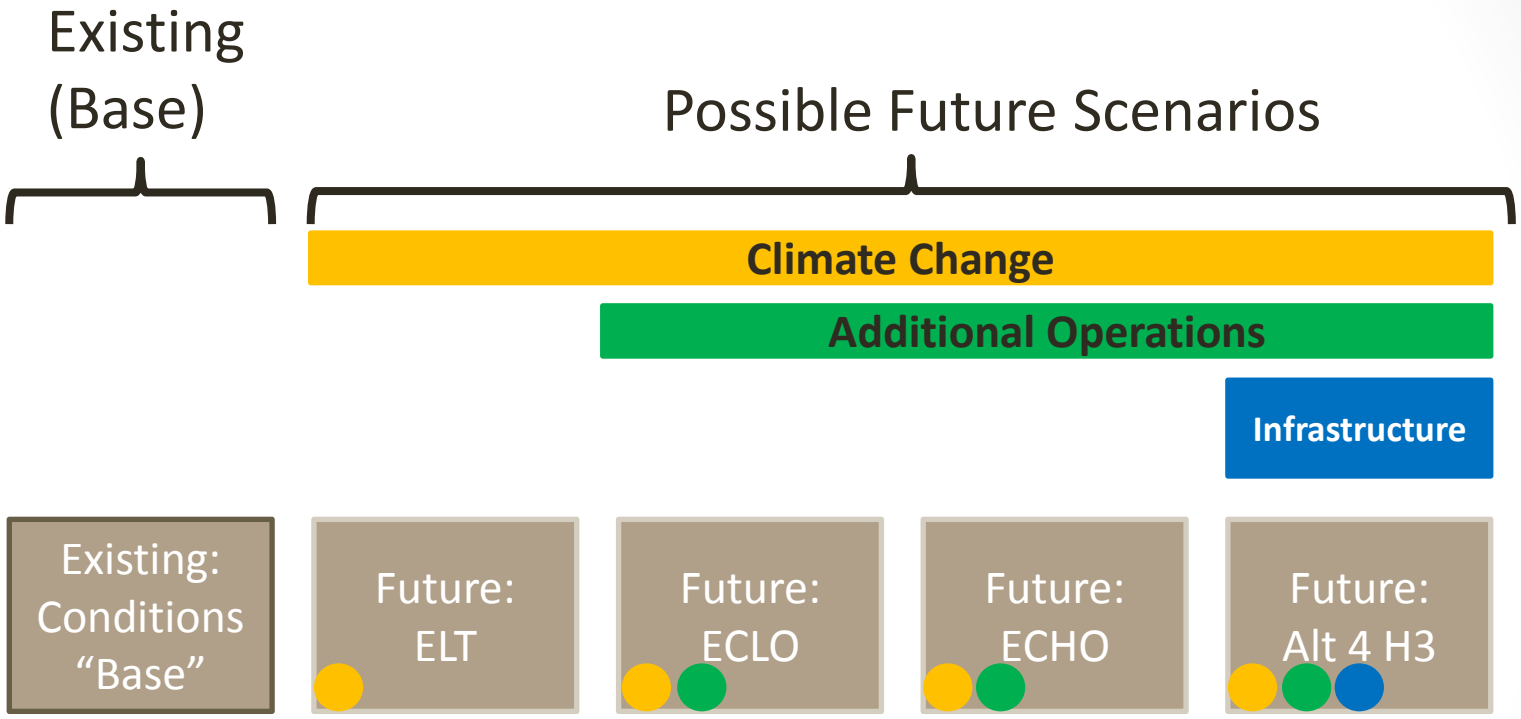
2015 DCR Studies

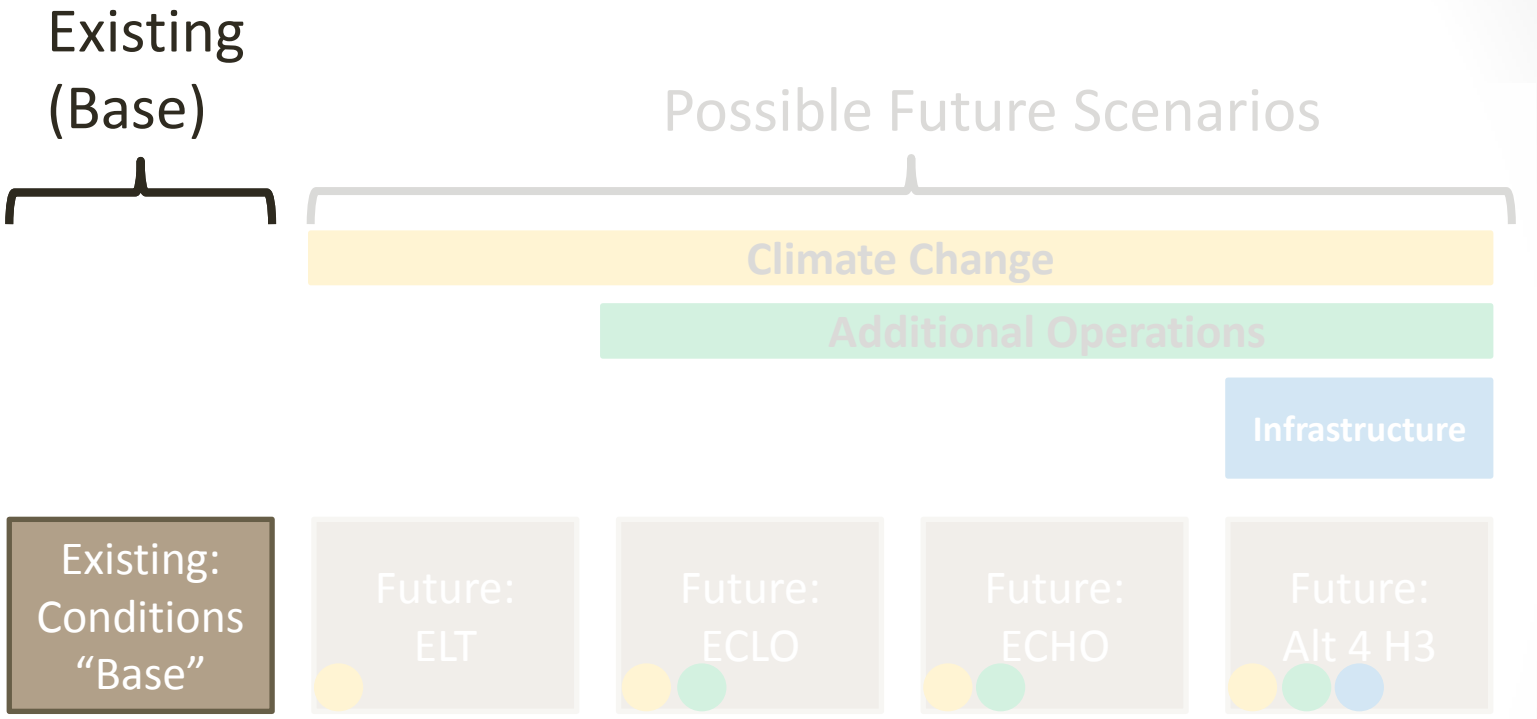


ELT: Early Long-Term Climate Change

EC**LO**: Existing Conveyance, **Low Outflow**

EC**HO**: Existing Conveyance**, High Outflow**

2015 DCR Studies



The Existing Conditions "Base" study assumes current day operations, regulations and facilities

Updates to the Base Study

Existing: Conditions "Base"

Future: ELT

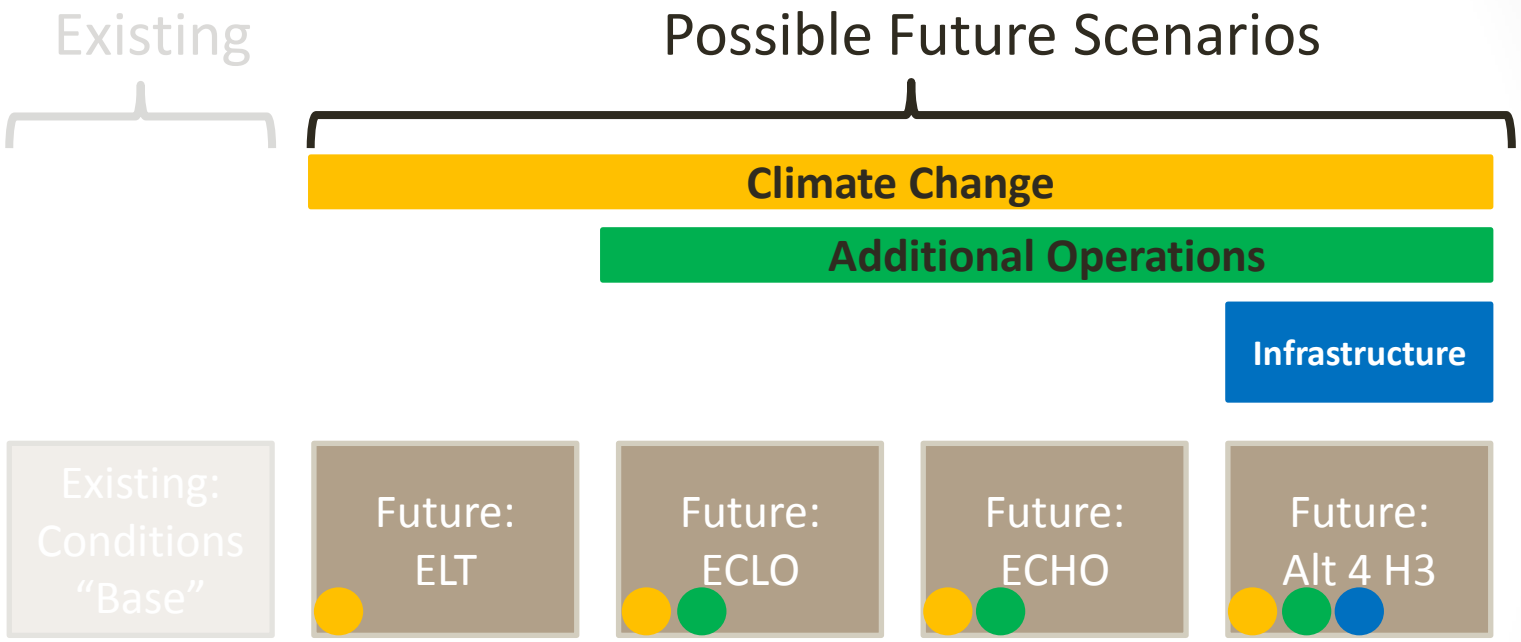
Future: ECLO

Future: ECHO

Future: "Alt 4"

- **2020 Level of development now considered "Existing"**
- **CVP Operations**
- **Vernalis Adaptive Management Plan (VAMP)**
- **American River Updates**
- **Dynamic Feather River Rice Decomposition Demands**
- **WSI-DI Curve Generation Procedure**

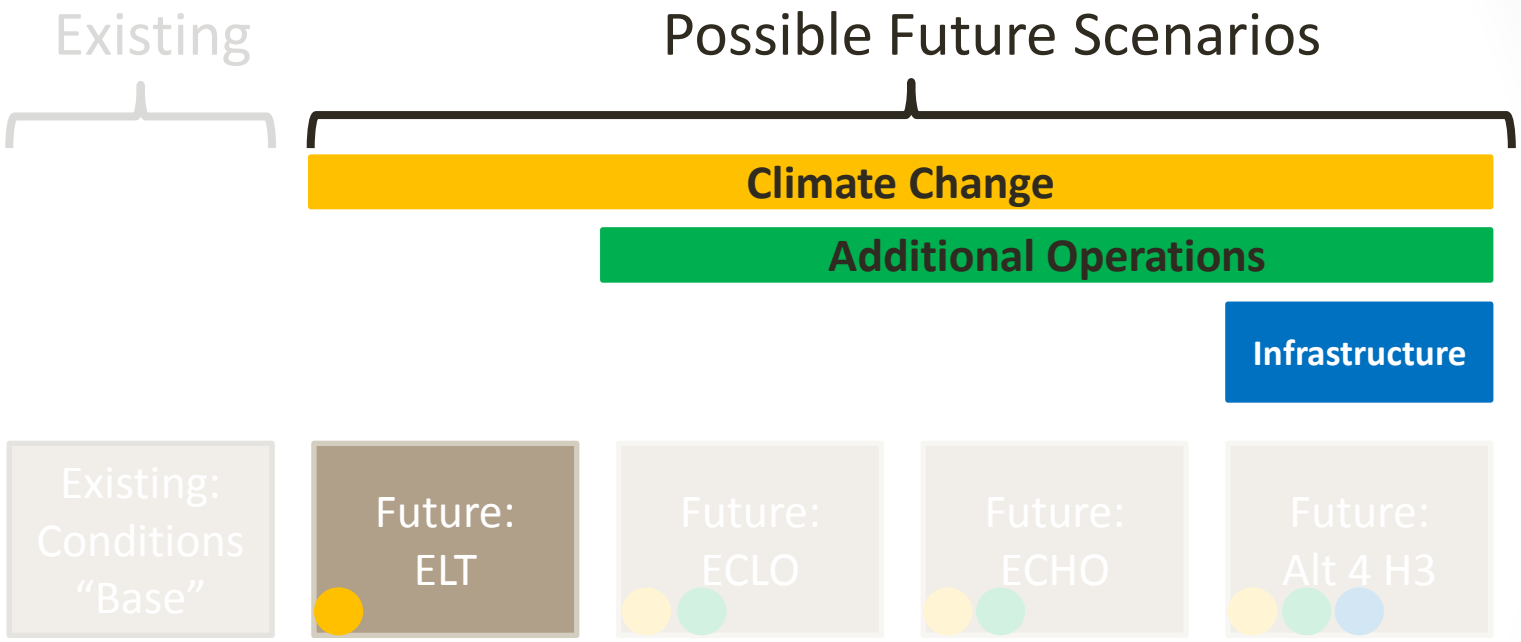
2015 DCR Studies



The "future" conditions studies consider ELT climate change and possible combinations of additional operations and infrastructure.

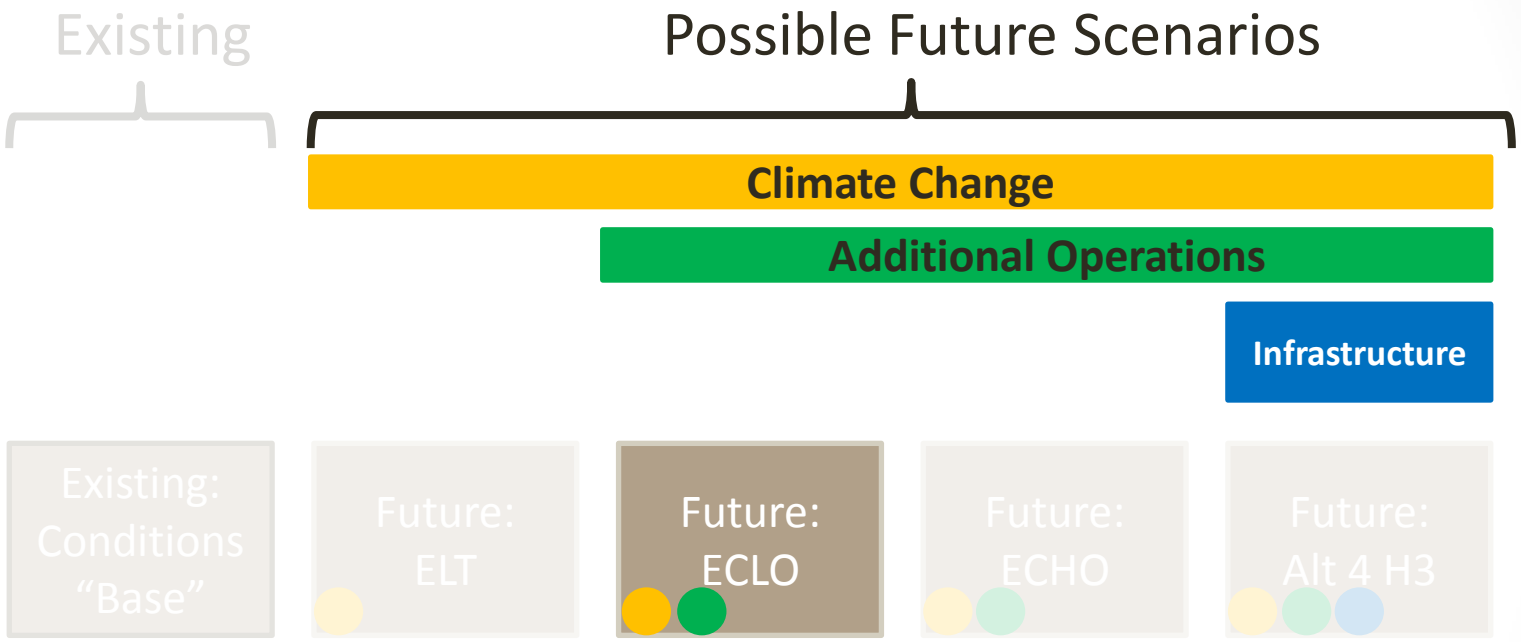
Provides a *range* of possible futures

2015 DCR Studies



Early Long-Term (ELT) climate change: 2025 emission levels and 15 cm sea level rise.

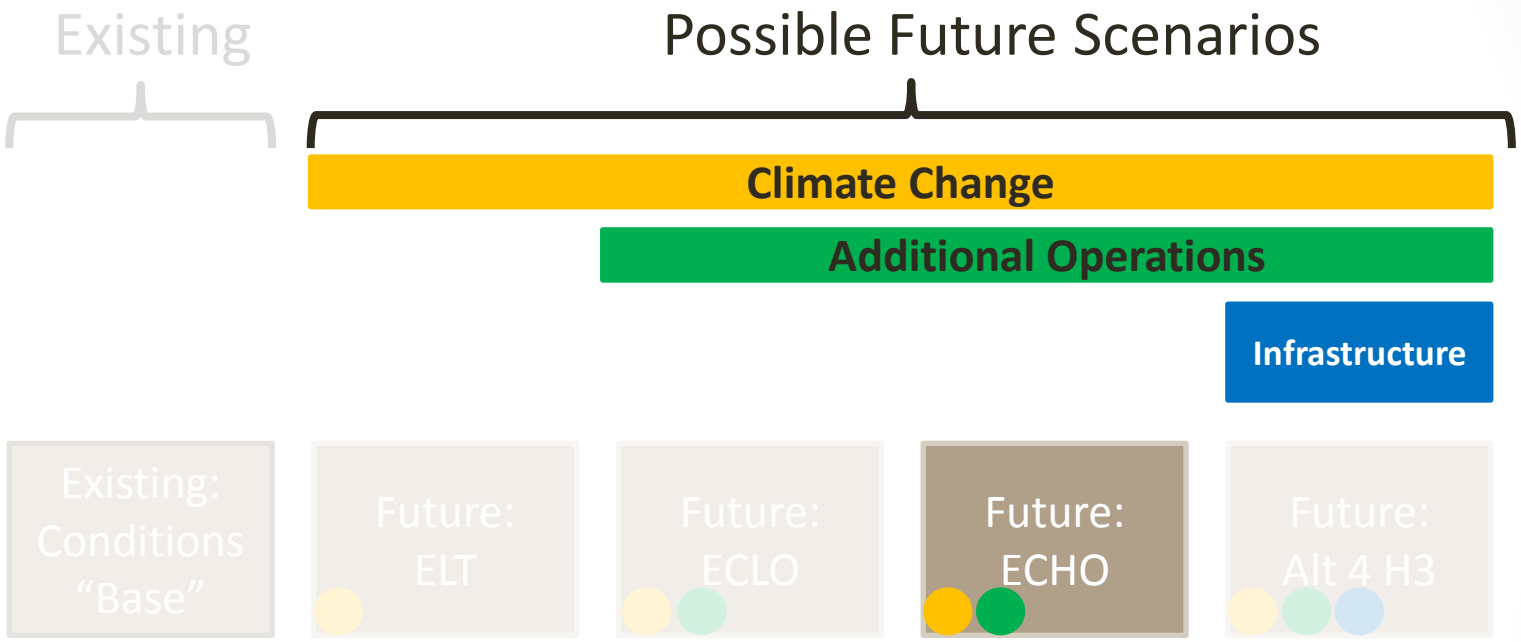
2015 DCR Studies



EC**LO**: Existing Conveyance**, Low Outflow**

- ELT
- additional operational criteria (low outflow bookend)

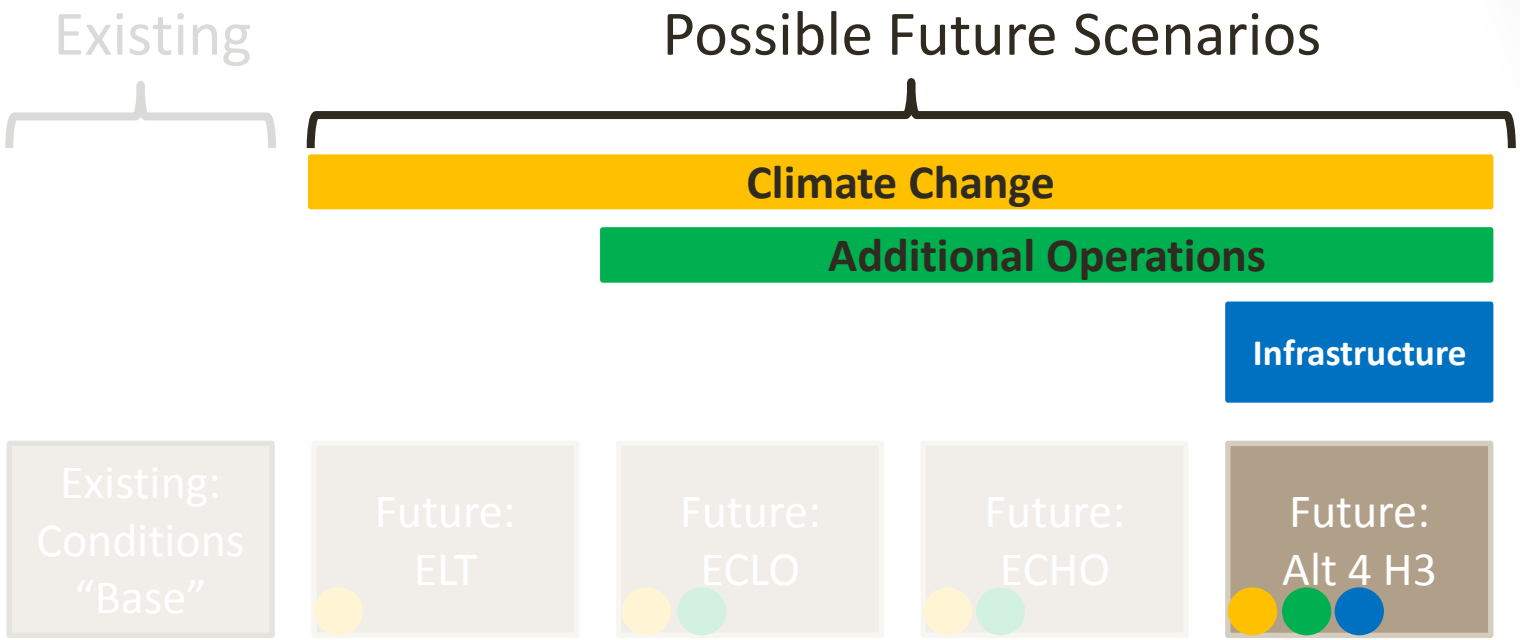
2015 DCR Studies



EC**HO**: Existing Conveyance**, High Outflow**

- ELT
- additional operational criteria (high outflow bookend)

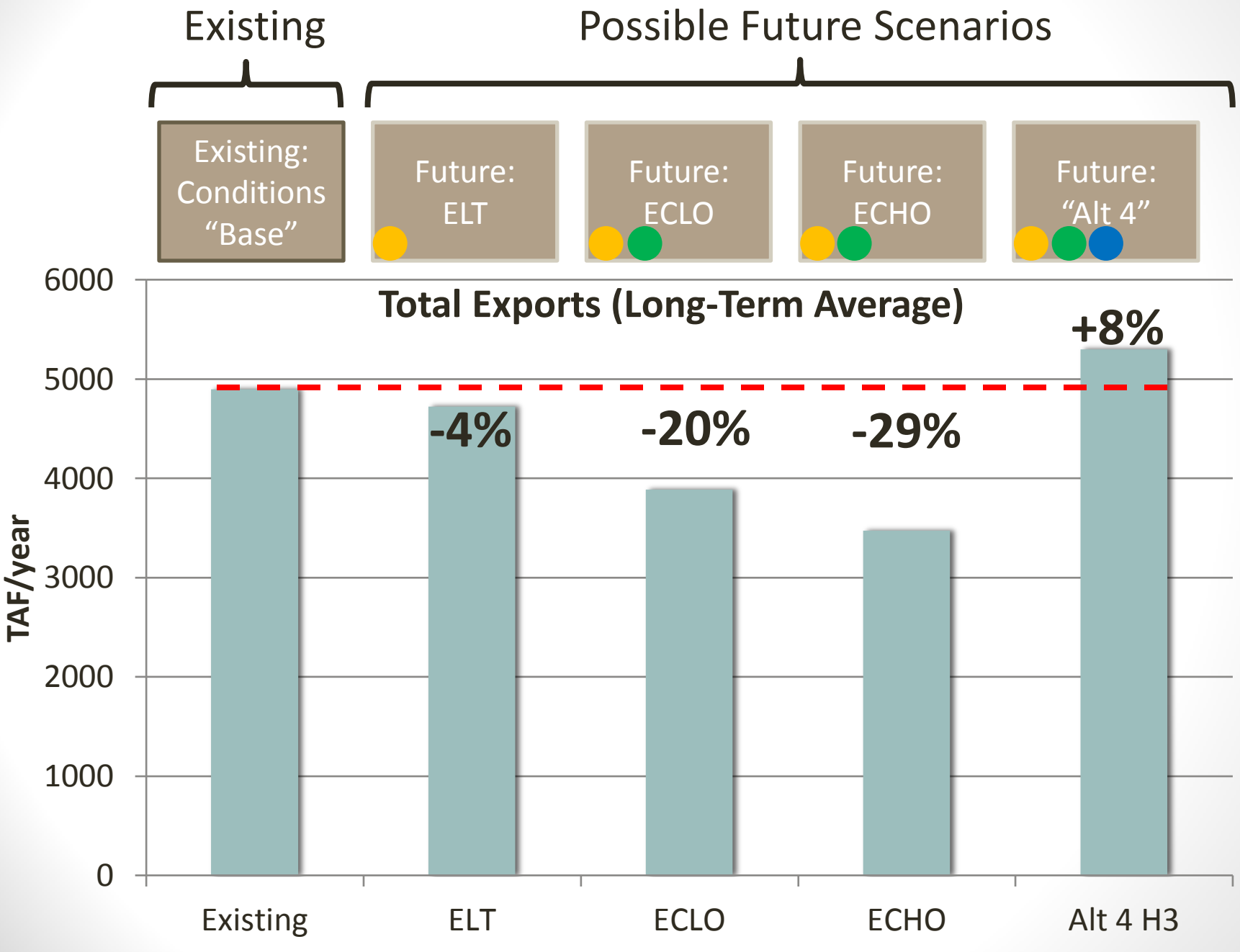
2015 DCR Studies



Alternative 4 (H3)

- ELT
- Additional operational criteria
- Isolated Facility

Note: This is not California Water Fix


Existing
Possible Future Scenarios
Existing: Conditions "Base"
Future: ELT
Future: ECLO
Future: ECHO
Future: "Alt 4"
Total Exports (Long-Term Average)
TAF/year
6000
5000
4000
3000
2000
1000
0
-4%
-20%
-29%
+8%
Existing
ELT
ECLO
ECHO
Alt 4 H3

Thank You!

Download link for the 2015 Delivery Capability Report and its Technical Addendum

http://baydeltaoffice.water.ca.gov/swpreliability/

Supplemental: Updated WSI-DI Procedure

WSI-DI Curve Generation Procedure

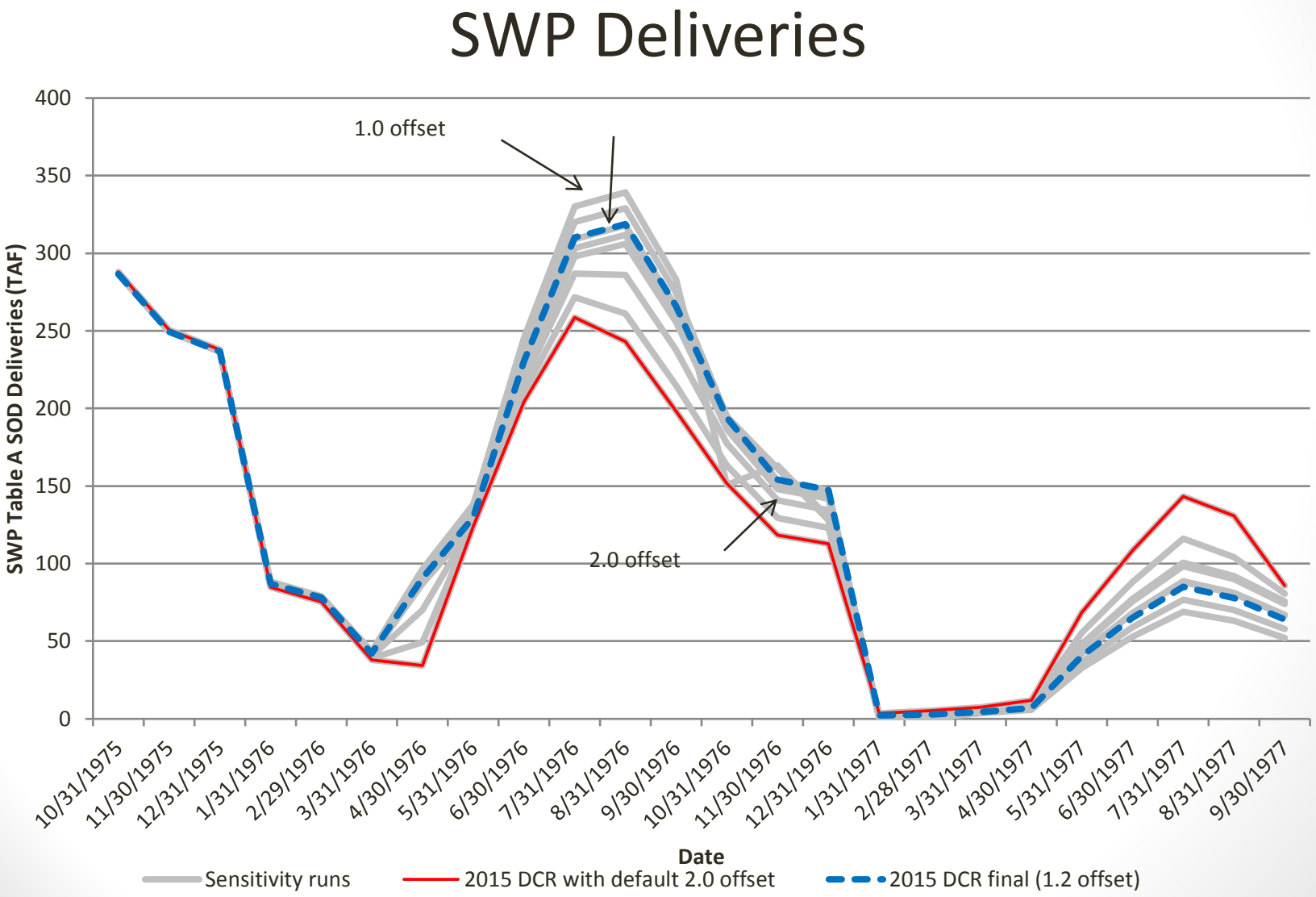
2013 DRR

- SWP Table A deliveries in 1977 were unreasonably high
- 1976 deliveries were too conservative
- San Luis not utilized fully in 1976

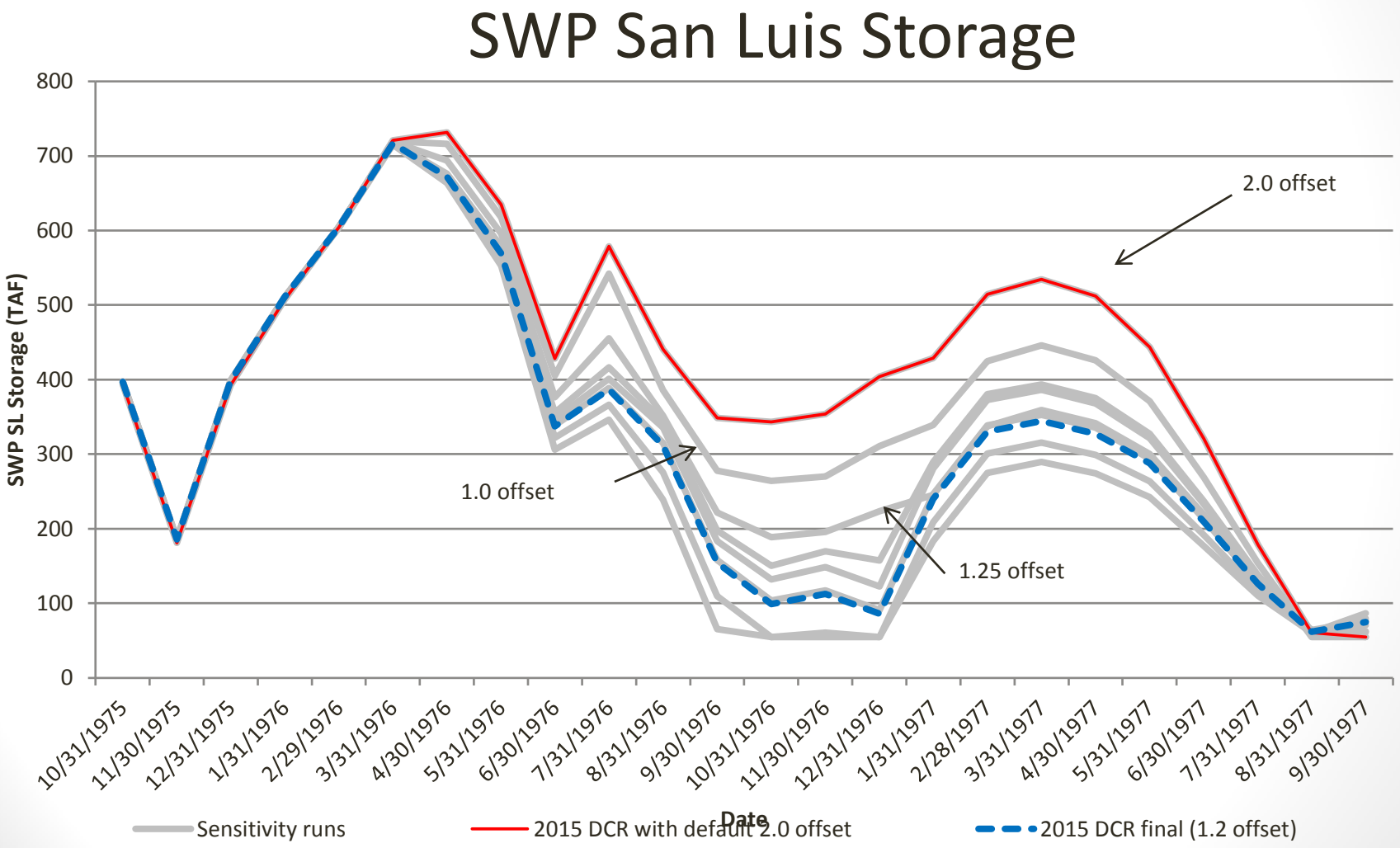
2015 DCR

- Updated the WSI-DI curve generation procedure based on sensitivity analysis

Supplemental: Updated WSI-DI Procedure



Supplemental: Updated WSI-DI Procedure



Supplemental: Dynamic Feather River Rice Decomposition Demands

October Oroville Storage (TAF)	FRSA Rice Decomposition Allocation
>1200	100%
1100-1200	75%
1000-1100	50%
900-1000	25%
<900	0%