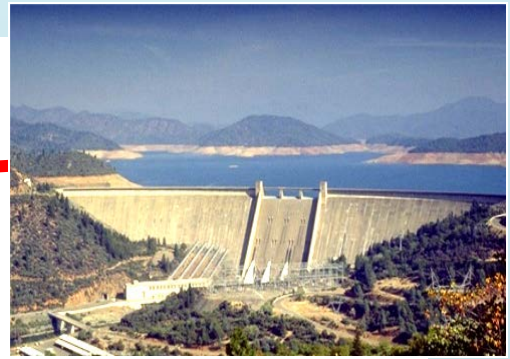
CALFED Surface Storage Investigations

Status Update

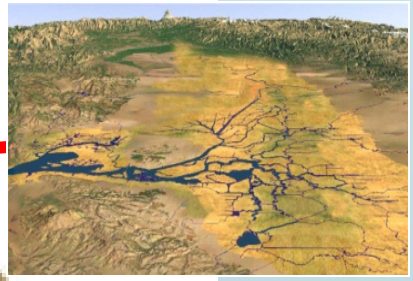
March 2013

CALFED Surface Storage Investigations

North-of-the-Delta Offstream Storage

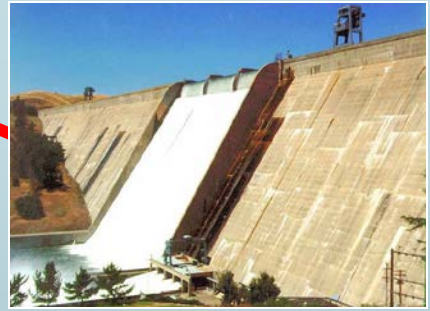


Shasta Project Enlargement



In-Delta Storage

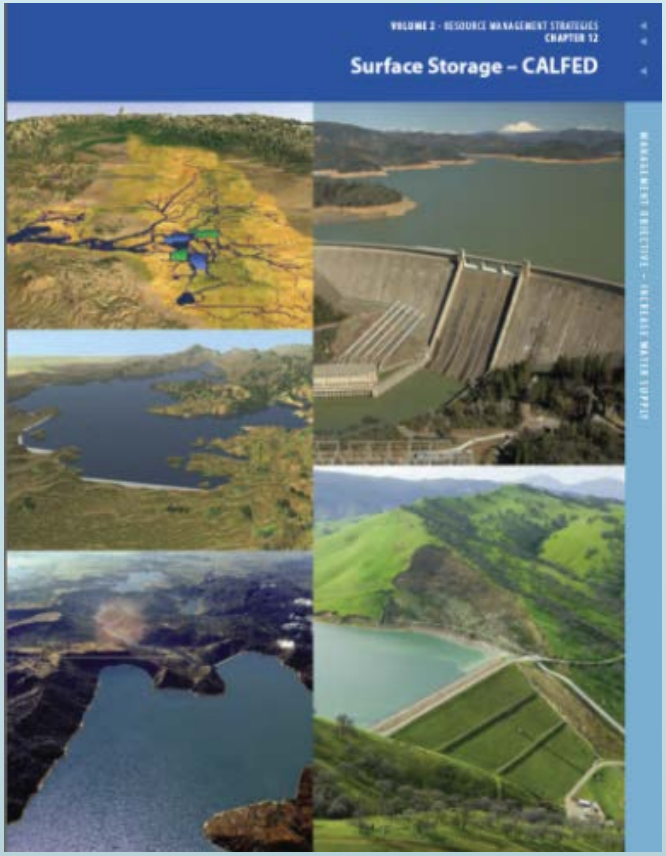
Los Vaqueros Expansion



Upper San Joaquin Basin River Storage

CALFED Surface Storage Investigations

- Objectives
  - Improve Water supply reliability
  - Improve Water quality
  - Enhance Ecosystem
- Designed to improve environmental conditions in addition to mitigating for all project impacts
- Cost allocations based on "Beneficiaries Pay" principle



CALFED Storage – Potential Public Benefits

Eligible Public Benefits	Shasta Lake Enlargement	NODOS (Sites)	USJRBS (Temp Flat)	Los Vaqueros Expansion
Ecosystem Improvements	✓	✓	✓	✓
Water Quality Improvements	✓	✓	✓	✓
Flood Control Benefits	✓	✓	✓	✓
Emergency Response	✓	✓	✓	✓
Recreation	✓	✓	✓	✓
Other Benefits				
Improve Water Supply	✓	✓	✓	✓
Improve System Flexibility	✓	✓	✓	✓
Hydropower & Renewable Int.	✓	✓	✓	

Shasta Lake Enlargement

18.5-ft Raise Alternative

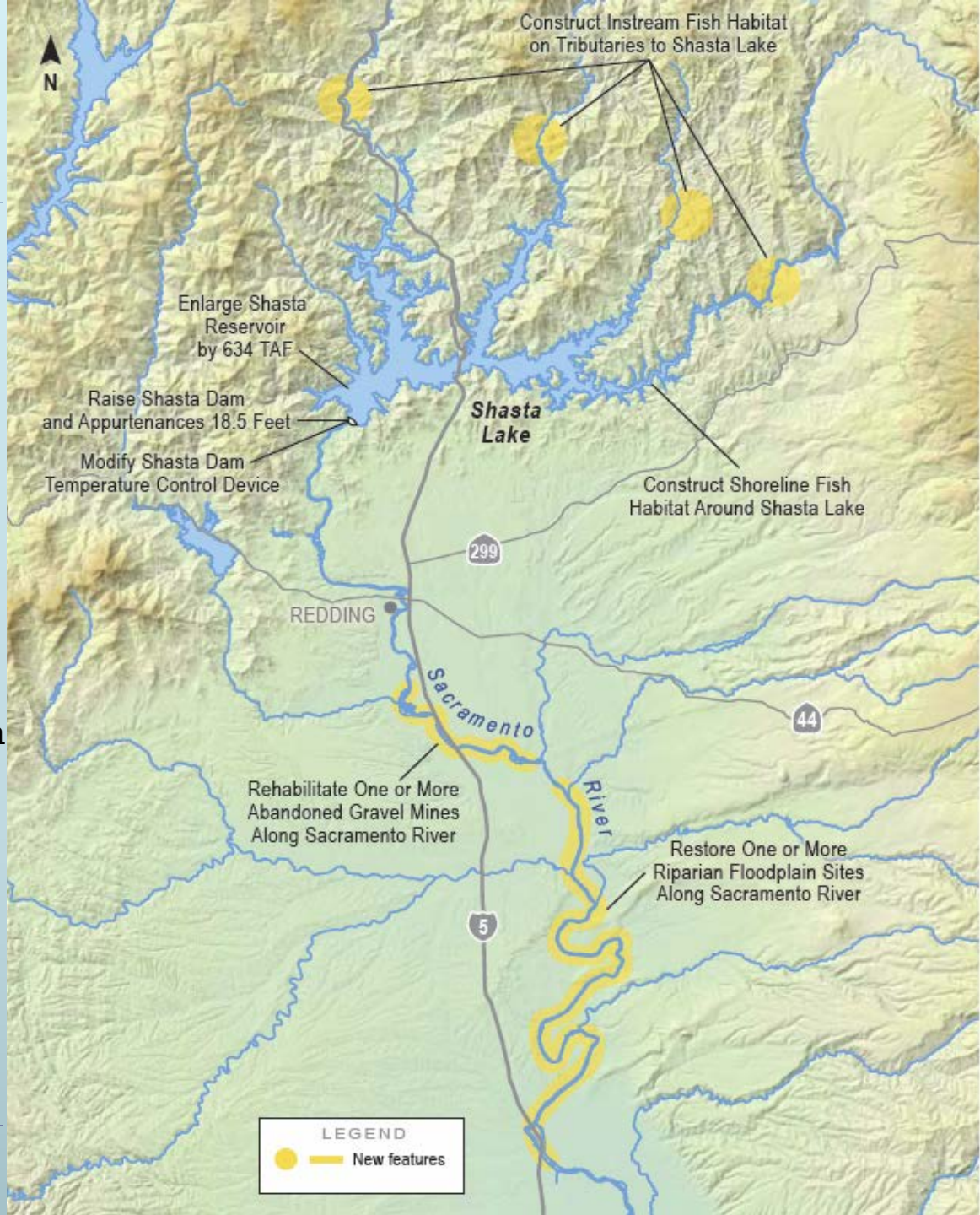
- **New Storage:** 634 TAF

- **Water Supply:**
  On Average: 76.4 TAF/yr

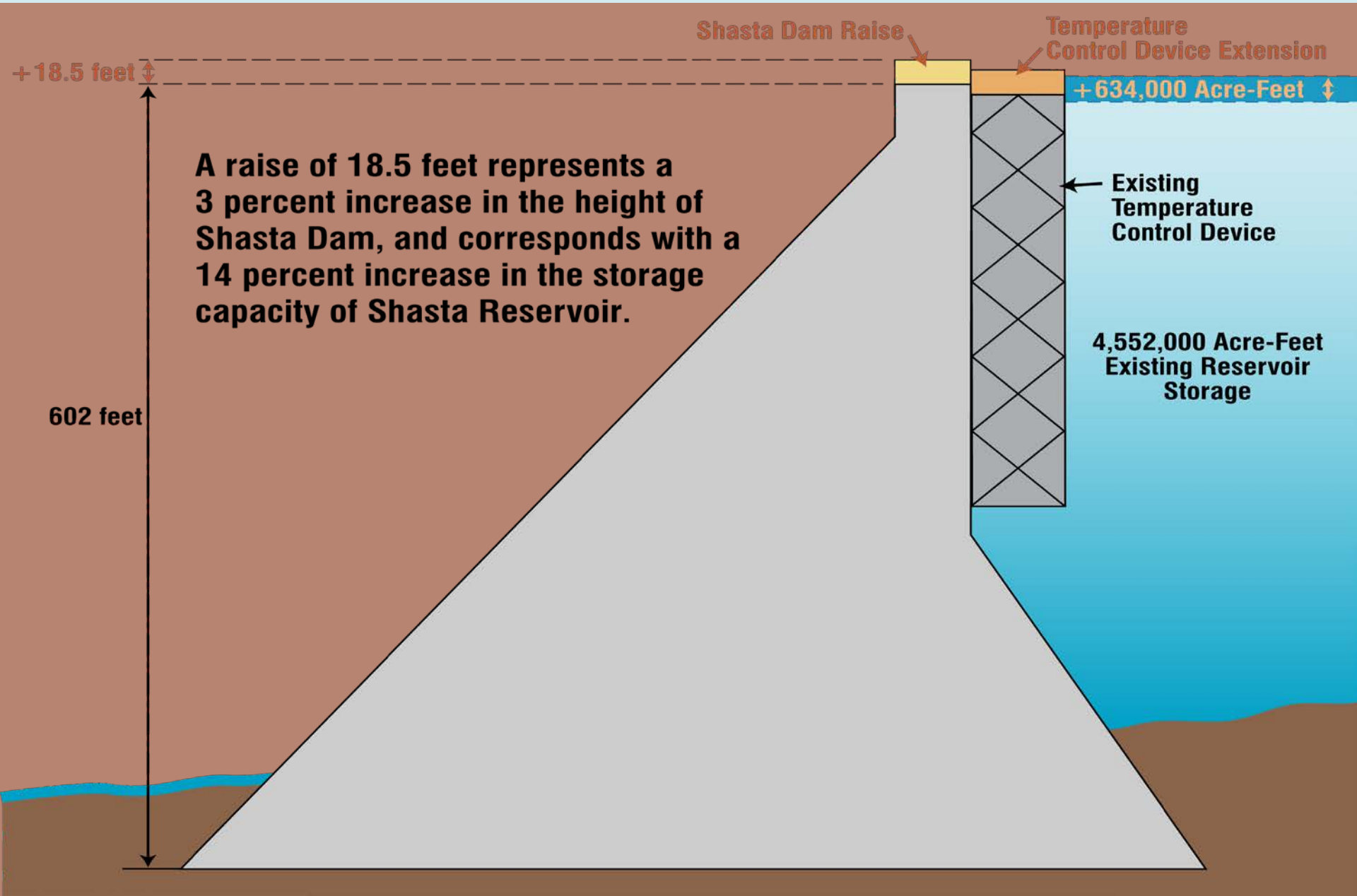
- **Fish Benefits:**
  - Cold water pool: 378 TAF
  - Increased habitat
  - Spawning gravel augmentation

- **Other Benefits:**
  - Delta Water Quality
  - Hydropower
  - Flood Damage Reduction
  - Recreation

Estimated Cost: $1.1 Billion



Shasta Dam & Reservoir Enlargement



North of the Delta Offstream Storage – Sites Reservoir Location

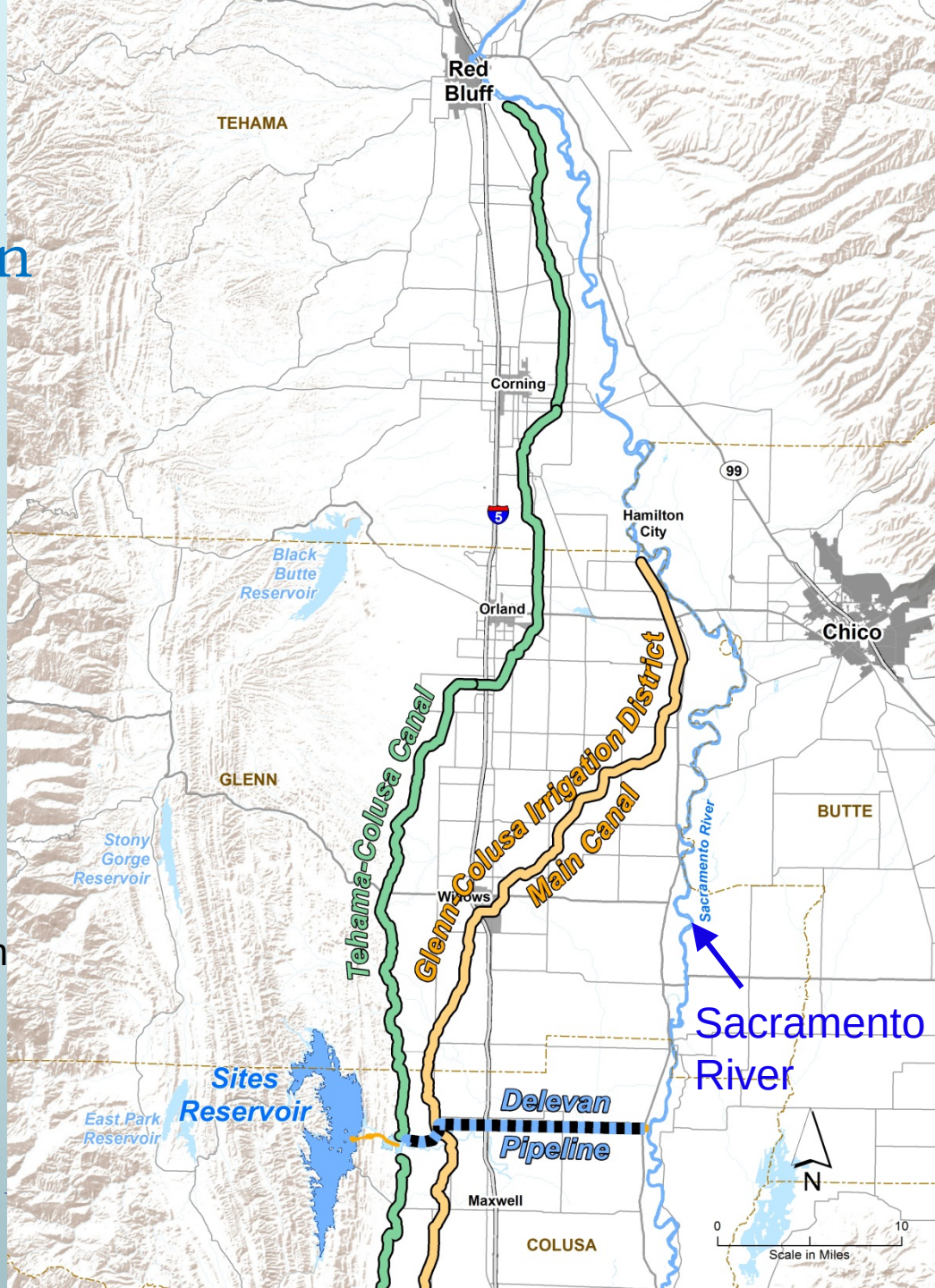
- **New Storage:** 1.2 – 1.8 MAF

- **Water Supply:**
  - Critical & Dry yr: 300-390 TAF/yr
  - On Average: 200-230 TAF/yr

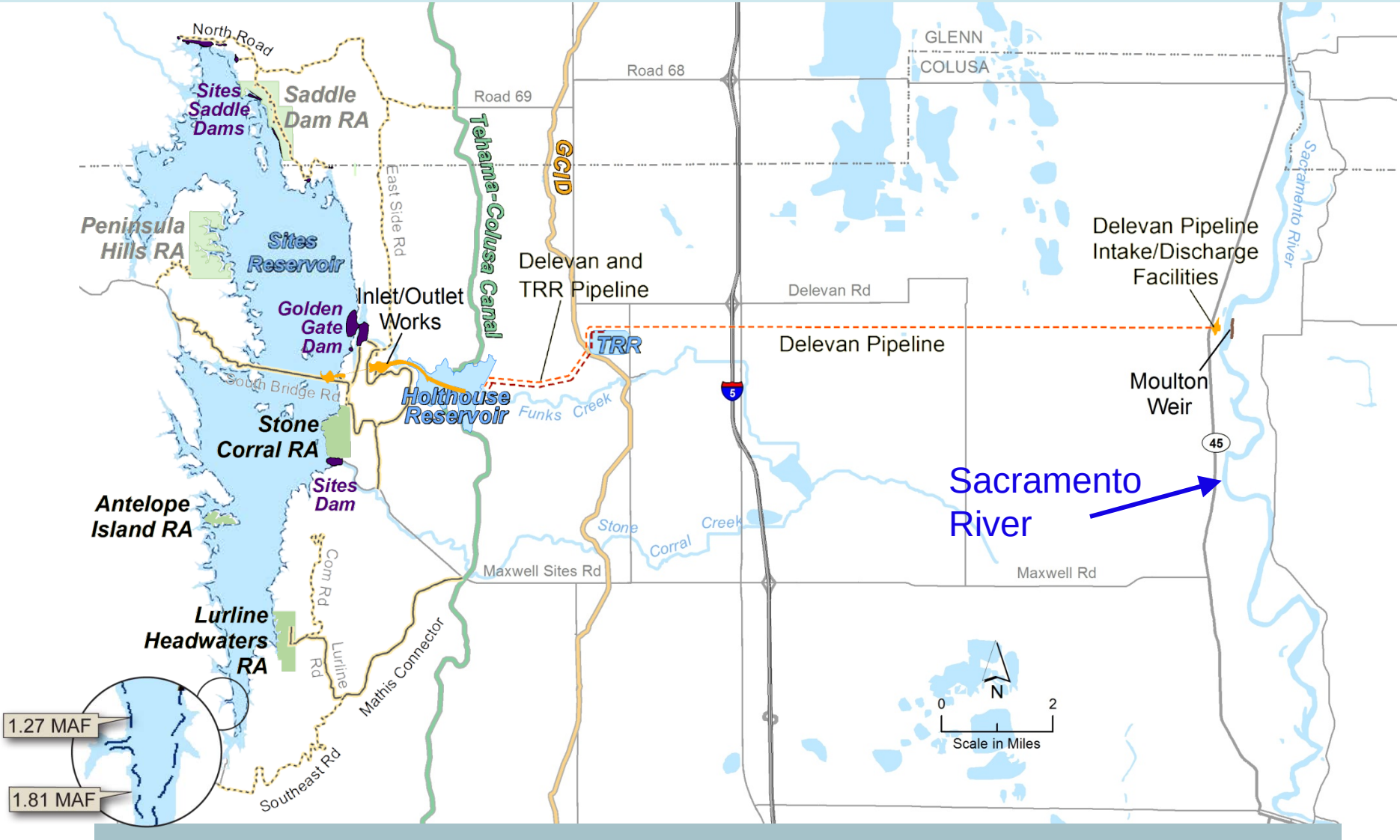
- **Environmental:**
  - In-stream Flows
  - Cold Water Pool
  - Level-4 Refuge
  - Delta Water Quality

- **Other Benefits:**
  - Hydropower - Renewable Integration
  - Flood Damage Reduction
  - Recreation

- **Estimated Cost:** $3.3–$3.9 Billion



Sites Reservoir Features



Upper San Joaquin River Basin Storage at Temperance Flat

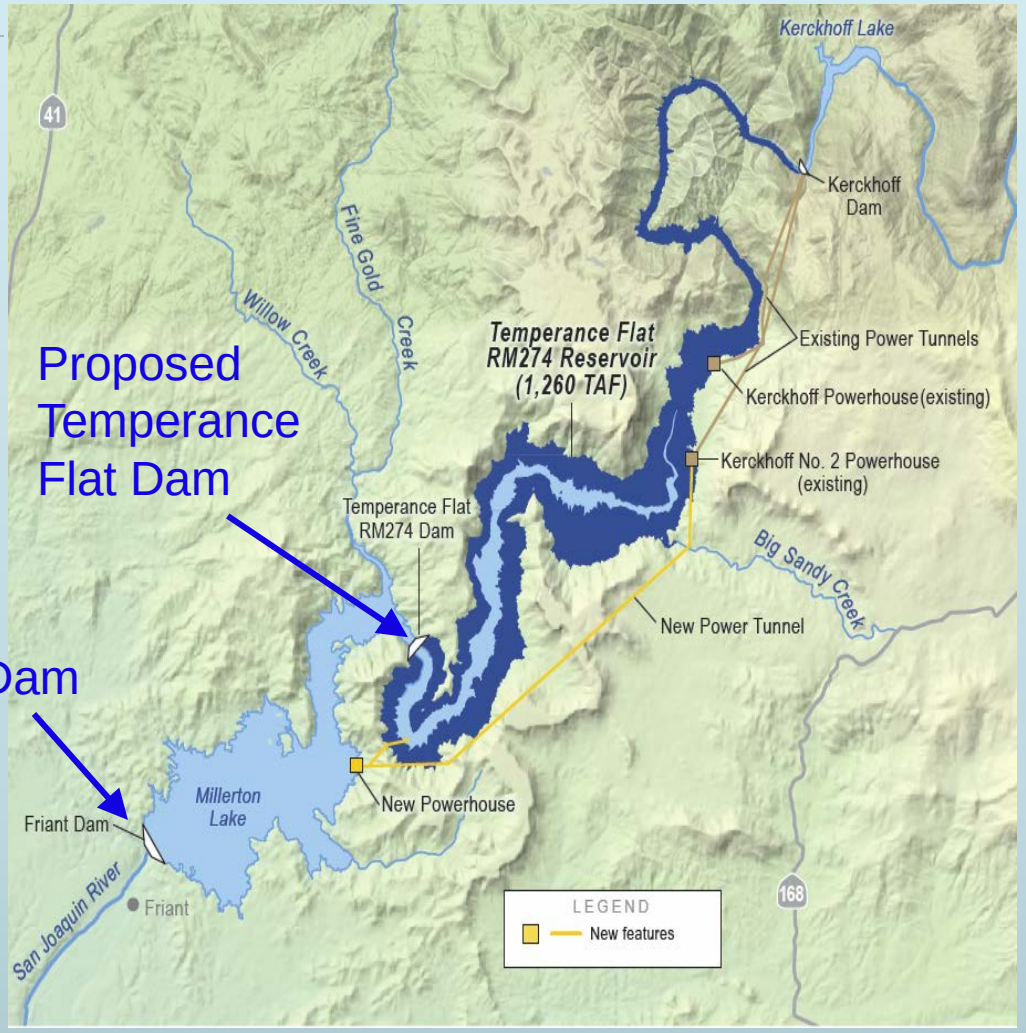
- **New Storage:** 1.26 MAF

- **Water Supply:**
• Critical & Dry: 86 TAF/yr
• On Average: 140 TAF/yr

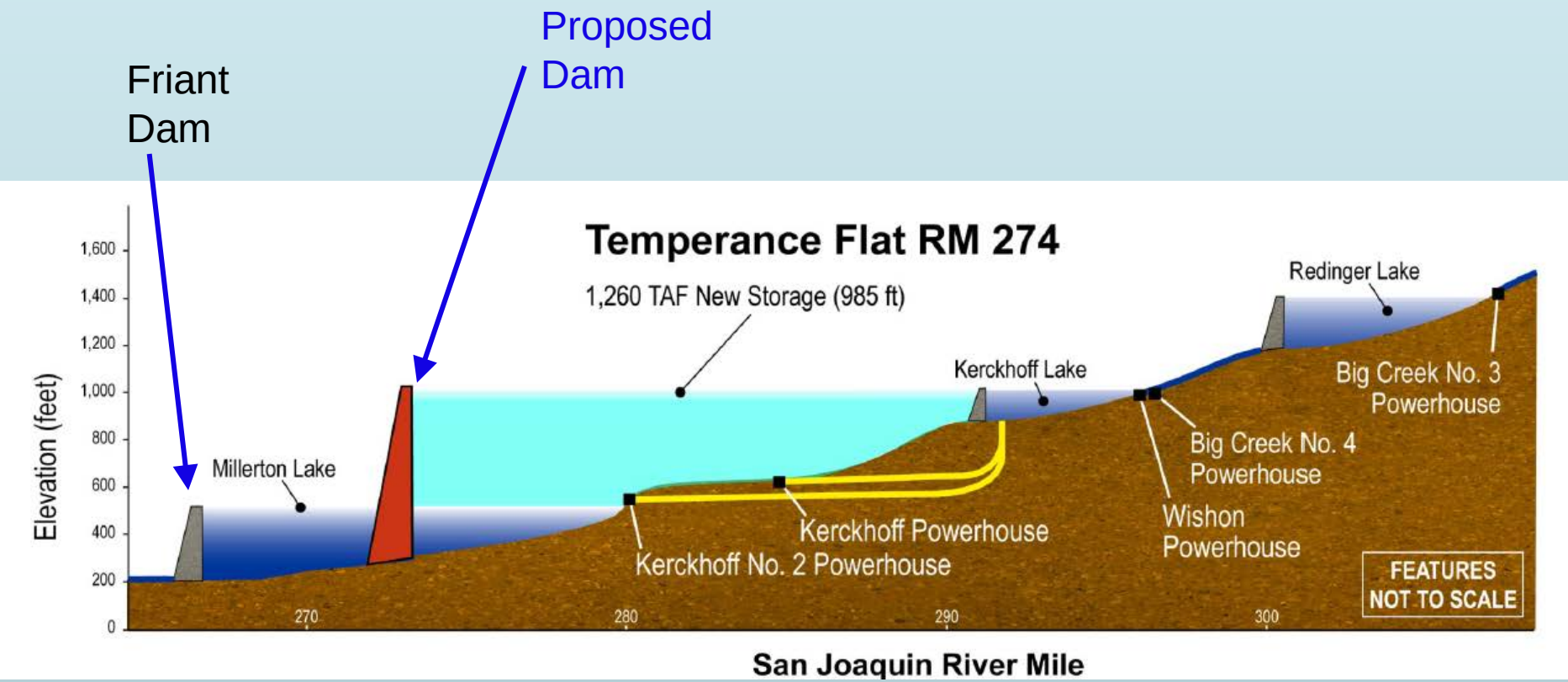
- **Environmental:**
Enhanced Flow & Temperature to aid San Joaquin River Restoration

- **Other Benefits:**
• Hydropower-Renewable Integration
• Flood Damage Reduction
• Recreation

- **Estimated Cost:** $2.6 -$3.3 Billion



Temperance Flat and River Profile



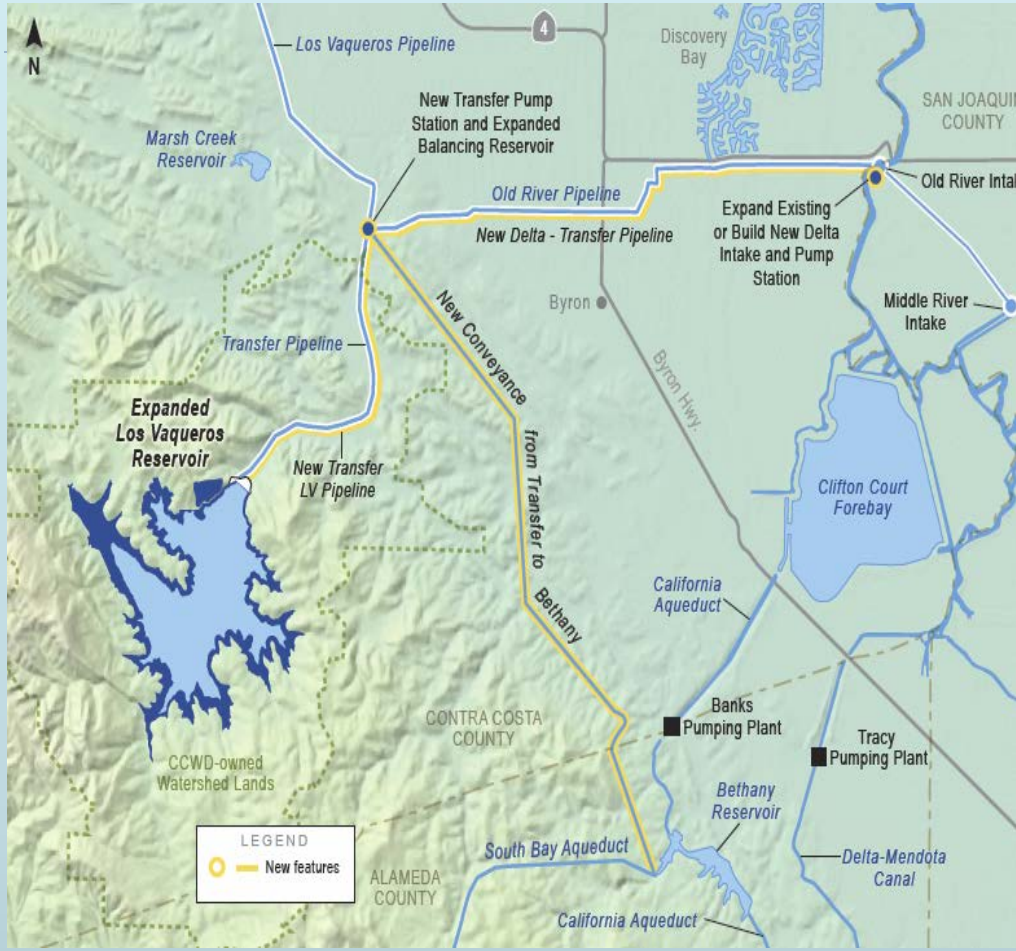
Los Vaqueros Expansion

Phase 1 (to 160 TAF)

- **New Storage:** 60 TAF expansion completed June 2012
- **Actual Cost:** $125 Million

Phase 2 (to 275 TAF)

- **New Storage:** Additional
- 115 TAF would further increase environmental water and emergency dry year water storage
- **Estimated Cost:** $840 Million



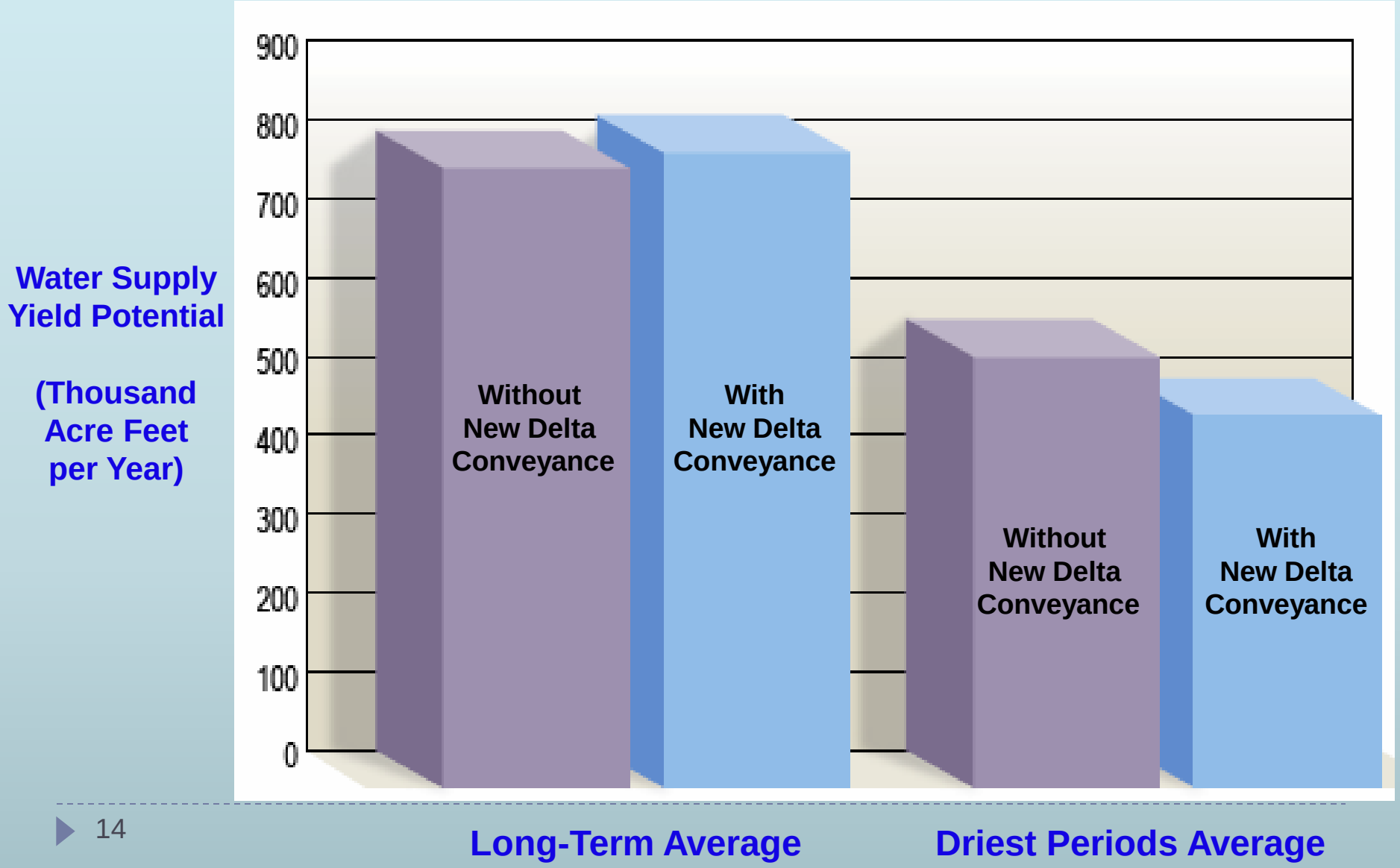
Left
Abutment
Top of Spillway
Intake/Outlets
Crest of dam
Right
Abutment
Continuing
Batching Plant
Spillway
Toe of dam
Stilling
Basin
Interpretive
Center

Previous
100,000 AF Level

CALFED Surface Storage Investigations Report Schedule

Report	Shasta Lake Enlargement	NODOS (Sites)	USJRBS (Temp Flat)	Los Vaqueros Expansion
Draft Feasibility Report	Feb 2012	Summer 2013	Fall 2013	Fall 2014
Draft EIR/EIS	June 2013	Fall 2013	Spring 2014	Fall 2014
Final Feasibility Report & EIR/EIS	Fall 2015	Fall 2015	Fall 2015	Fall 2016

Potential Effects of New Delta Conveyance Combined Yield of Surface Storage Projects



Questions & Comments

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