Water Use Conflicts and the Future of North State Water Resources

CALFED's Surface Storage Program

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CALFED Objectives and Programs

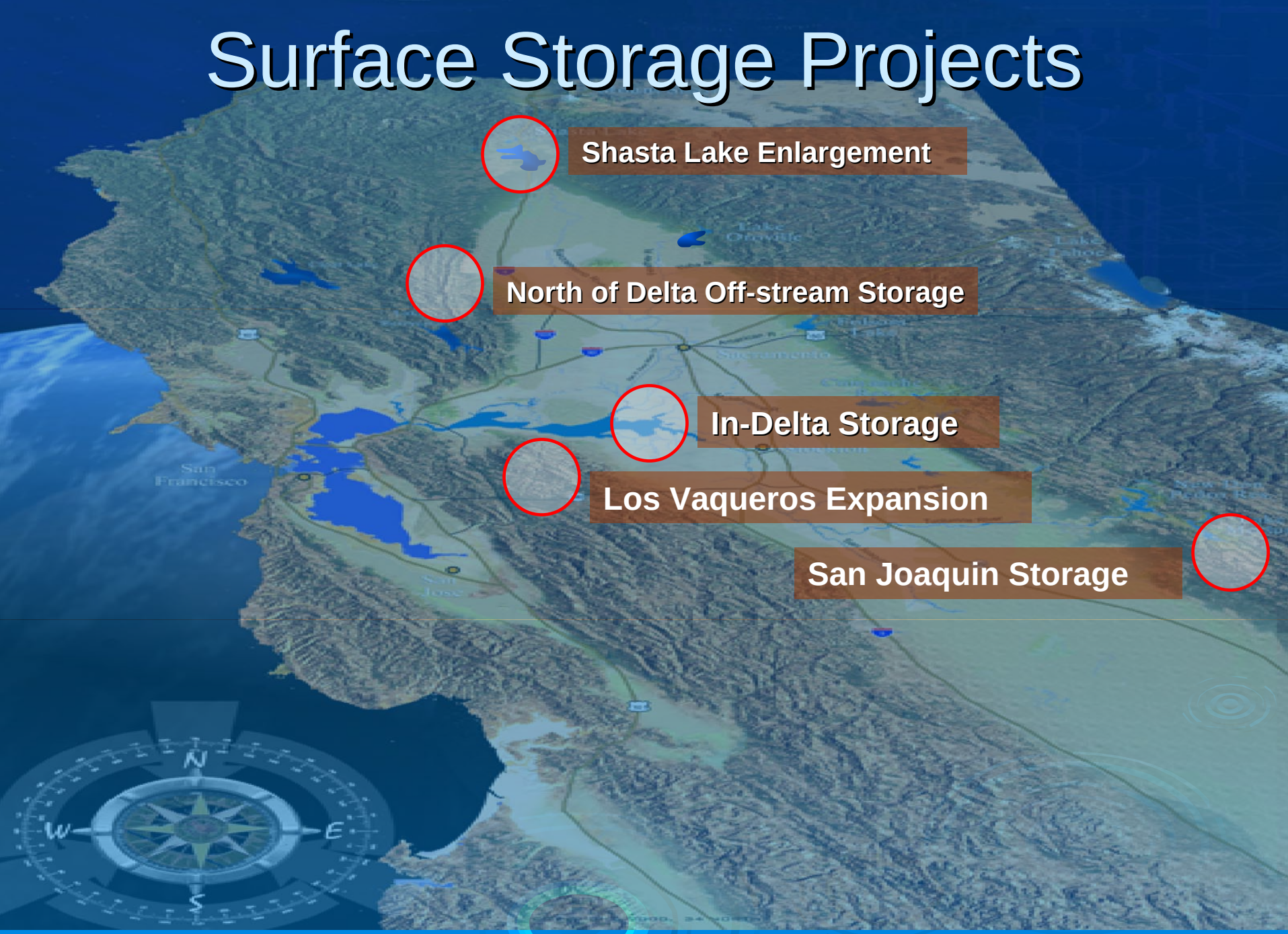
How Storage Fits into the CALFED Program

"Expanding water storage capacity is critical to the successful implementation of all aspects of the CALFED Program. Not only is additional storage needed to meet the needs of a growing population but, if strategically located, it will provide much needed flexibility in the system to improve water quality and support fish restoration efforts."

"Storage projects are not developed in isolation but rather as part of an overall water management strategy."

[CALFED ROD, August 2000, pages 42 & 43]

Surface Storage Projects



CALIFORNIA BAY-DELTA PROGRAM SURFACE STORAGE PROJECTS

Location of Projects and Benefits

Shasta Enlargement

NODOS Reservoir

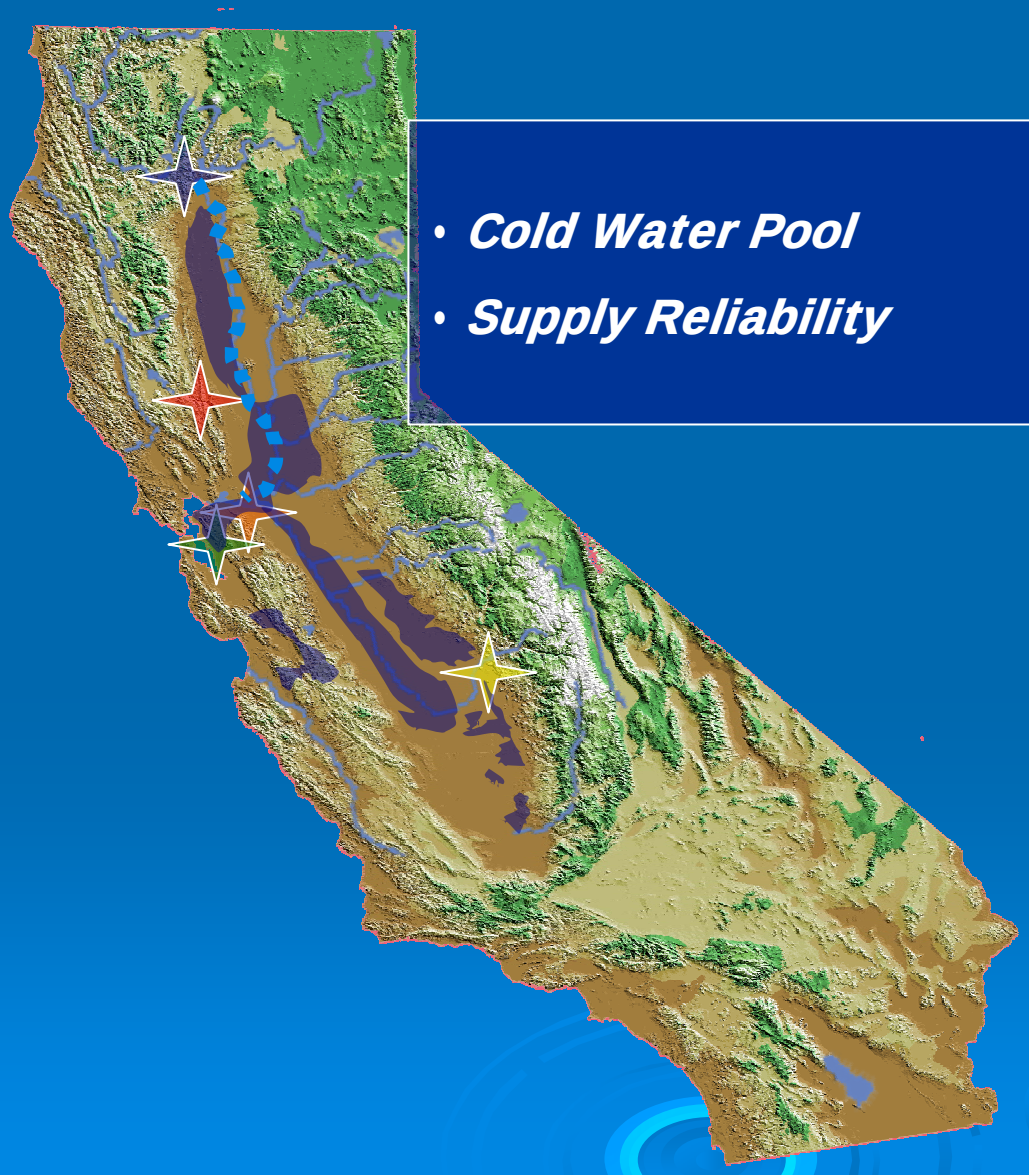
In Delta Storage

Los Vaqueros Enlargement

San Joaquin Storage

CALIFORNIA BAY-DELTA PROGRAM SURFACE STORAGE PROJECTS

Location of Projects and Benefits



- ***Cold Water Pool***
- ***Supply Reliability***

Shasta Enlargement

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CALIFORNIA BAY-DELTA PROGRAM SURFACE STORAGE PROJECTS

Location of Projects and Benefits

- ***Manage Diversions***
- ***Supply Reliability***
- ***Water Quality***
- ***EWA and ERP***

Shasta Enlargement

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CALIFORNIA BAY-DELTA PROGRAM SURFACE STORAGE PROJECTS

Location of Projects and Benefits

- ***Supply Reliability***
- ***Operational Flexibility***
- ***EWA and ERP***

Shasta Enlargement

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CALIFORNIA BAY-DELTA PROGRAM SURFACE STORAGE PROJECTS

Location of Projects and Benefits

- ***Water Quality***
- ***Supply Reliability***
- ***EWA***

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CALIFORNIA BAY-DELTA PROGRAM SURFACE STORAGE PROJECTS

Location of Projects and Benefits

- ***River Restoration***
- ***Supply Reliability***
- ***Water Quality***

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Potential ERP Benefits from NODOS

Restore Spring Snowmelt Pattern

- *Hypothesis:* Cottonwood cohort success is improved by slowly receding late spring flows
- *Operations:* Shasta supplemental releases; partial recovery + payback from NODOS
- *Preliminary Results:* 9 out of 73 were candidate years; 8 resulted in successful <u>operations</u> – Avg release = 460 TAF; 1 year did not require any supplemental release

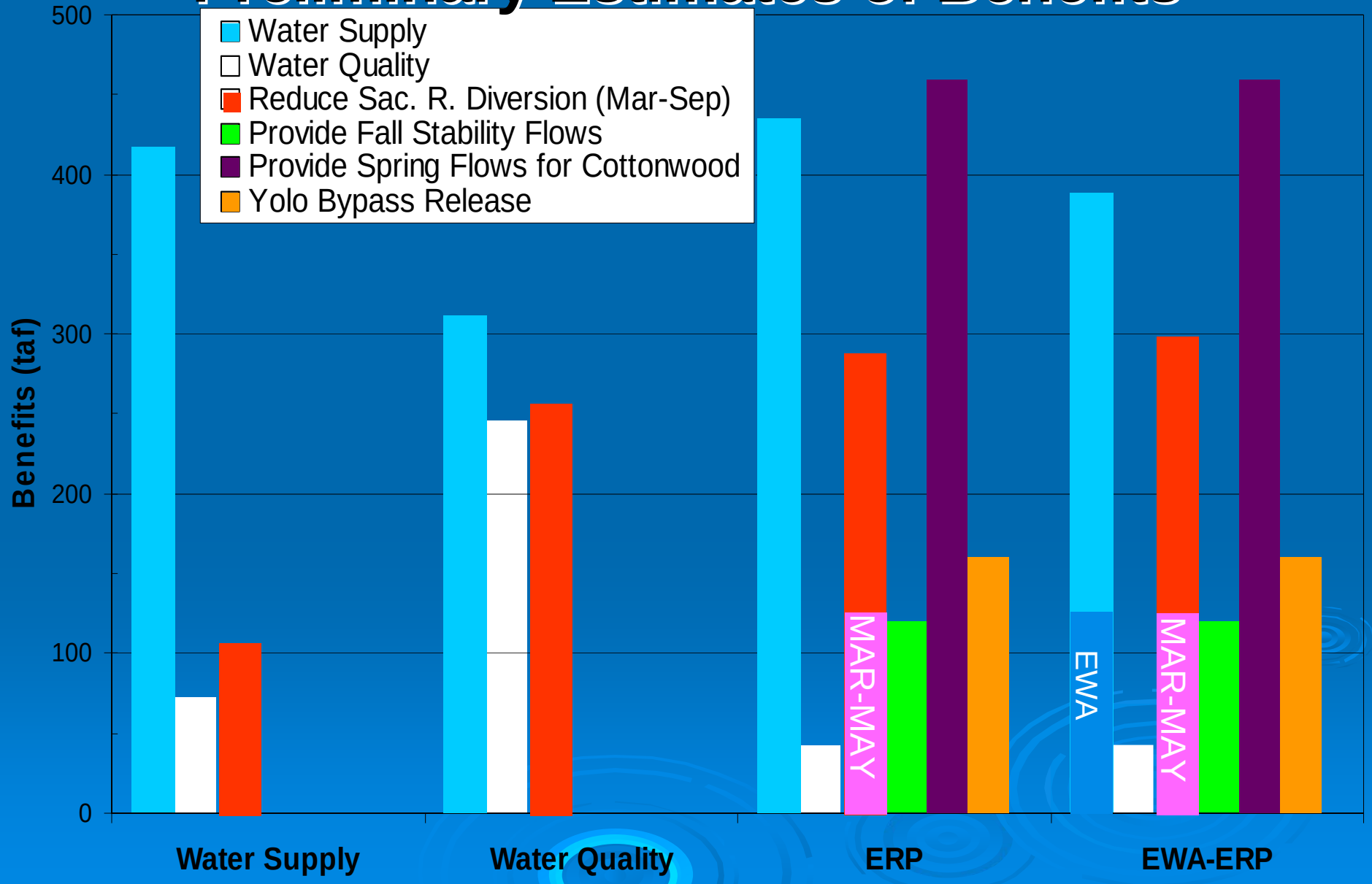
Stabilize Fall Flows

- *Hypothesis:* Stable flows Sept – Nov, from Keswick to Red Bluff, decrease stranding and desiccation
- *Operations:* Provide min. instream flow @ Keswick = 6,000 cfs; recover @ NODOS
- *Preliminary Results:* Shasta supplemental release 73 of 73 years;
  Avg release = 120 TAF

Reduce Spring Diversions

- *Hypothesis:* Minimize diversions @ T-C and GCID canals Mar – May to improve anadromous fish survival
- *Operations:* New screens @ Red Bluff; greater reliance upon NODOS during Mar – May
- *Preliminary Results:* Avg Mar – May diversion reduction = 130 TAF

North-of-the-Delta Offstream Storage Preliminary Estimates of Benefits



Summary

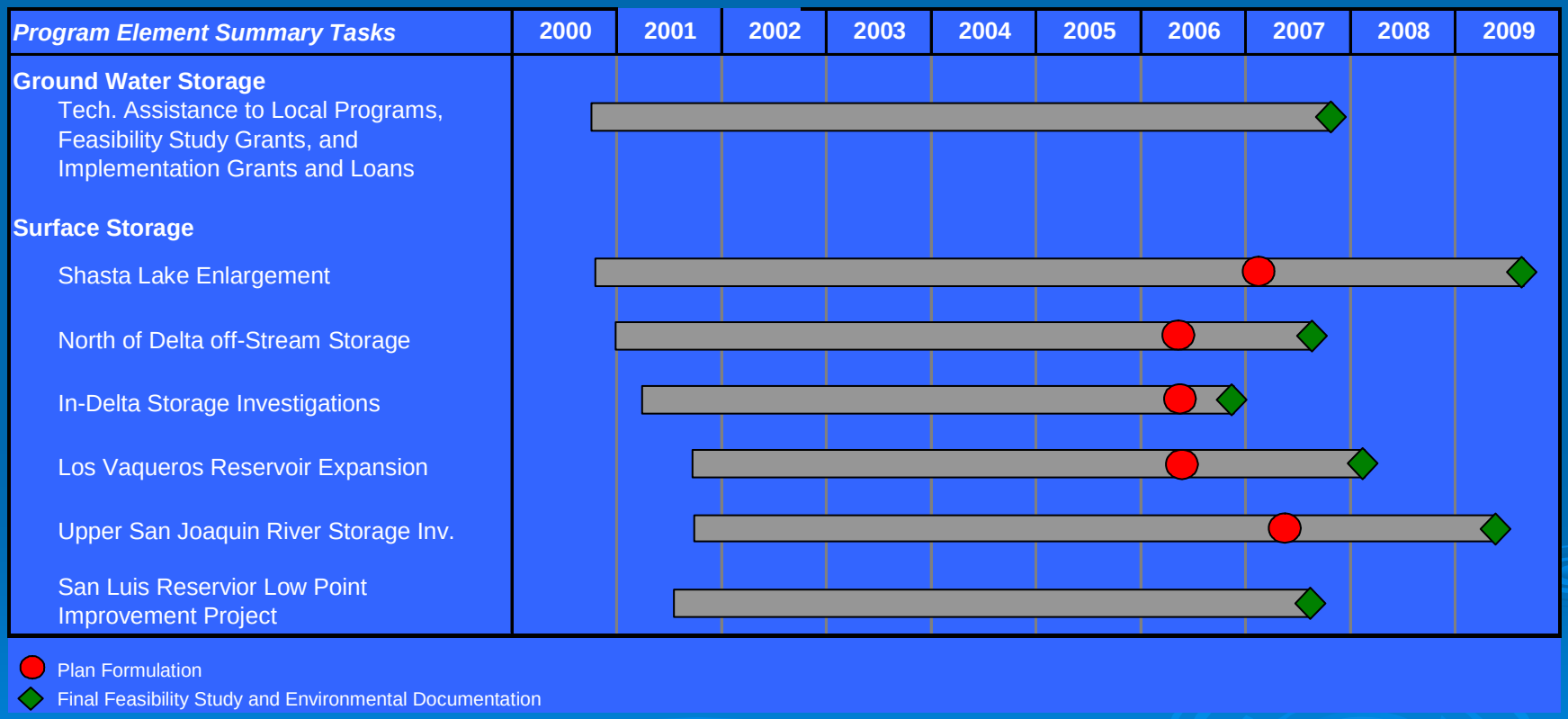
- Storage projects are not developed in isolation but rather as part of an overall water management strategy.
- CALFED's Surface Storage Projects are being planned as multi-purpose (multi-benefit) projects for water supply reliability, improved water quality and ecosystem restoration
- These projects can provide regional benefits and broad public benefits to California

Surface Storage Preliminary Capital Costs

	Shasta Lake Water Resources Investigation	North-of-the-Delta Offstream Storage	In-Delta Storage	Los Vaqueros Reservoir Expansion	Upper San Joaquin River Basin Storage Investigation
Storage Capacity (TAF)	**300 - 635** **(6.5 ft - 18.5 ft Raise)**	**1,800**	**217**	**200 - 400** **(Range of expansion)**	**450 - 1,200** **(Range of storage options)**
Capital Cost Estimates[1] ($ Millions)	**$280 - $480**	**$1,300 - $2,300**	**$700 - $800**	**$870 - $1,300**	**$600 - $1,200**

The wide range of costs is due to a wide range in storage sizes and types, conveyance options and appurtenant structures being studied at each project site.

Surface Storage Investigations Schedules



Contact Information

Websites

DWR: http://www.storage.water.ca.gov/

U. S. Bureau of Reclamation:
http://www.usbr.gov/mp/programs.html

CALFED: http://calwater.ca.gov/

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Questions ?