Unique Opportunity for Ecosystem Enhancement, Improved Water Supply Reliability, and Emergency Water Supply

Valley Water – Water Storage Exploratory Committee
December 28, 2020

Pacheco Reservoir Expansion Project:
Construction Cost Estimate Update

Presented by Ryan McCarter, Pacheco Project Delivery Unit Manager

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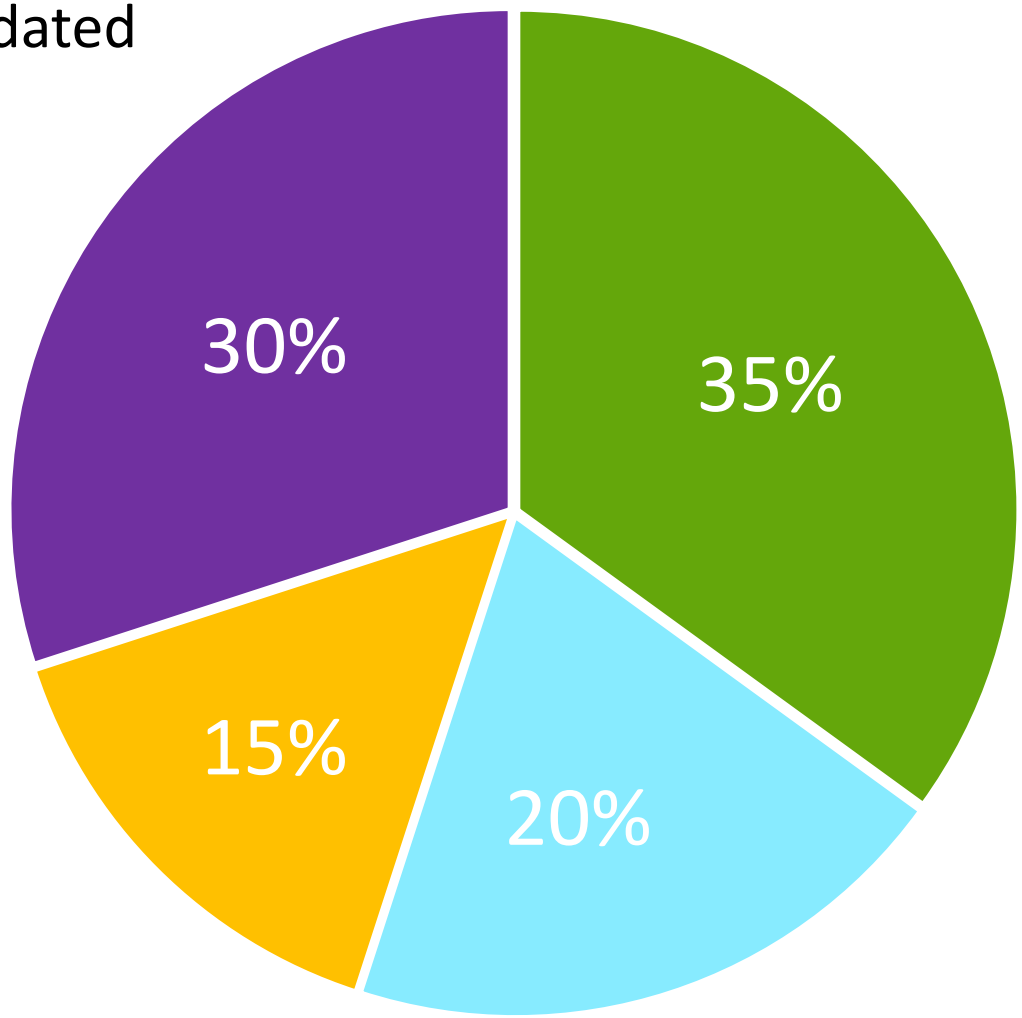
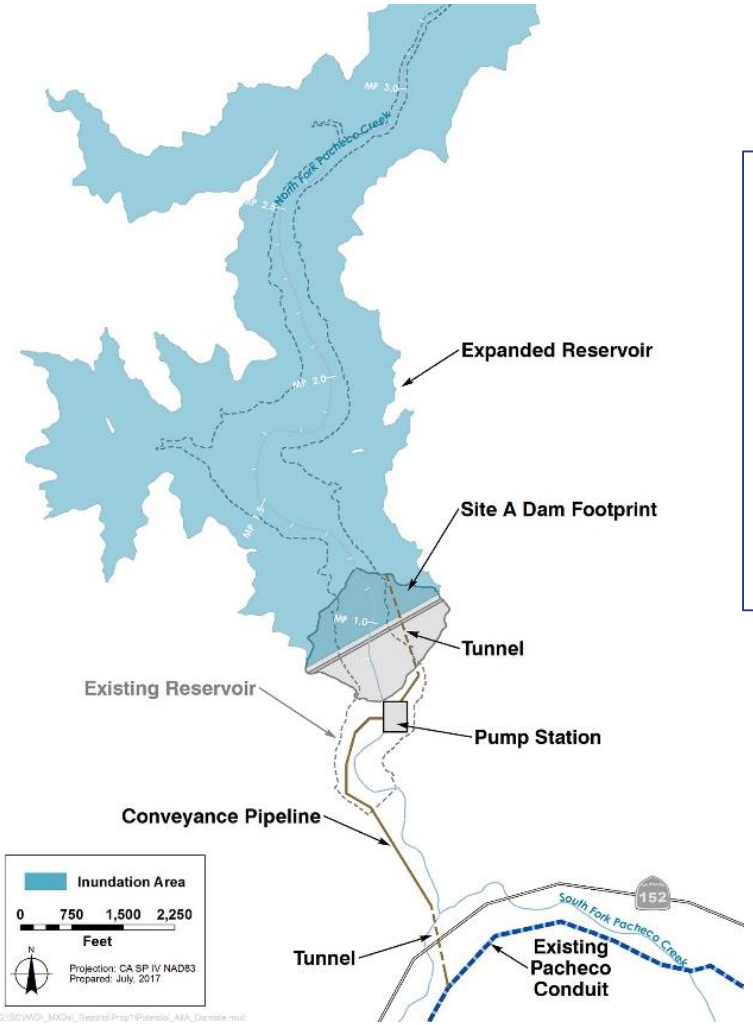
Factors contributing to $1B construction cost increase

2020 – CIP construction cost updated

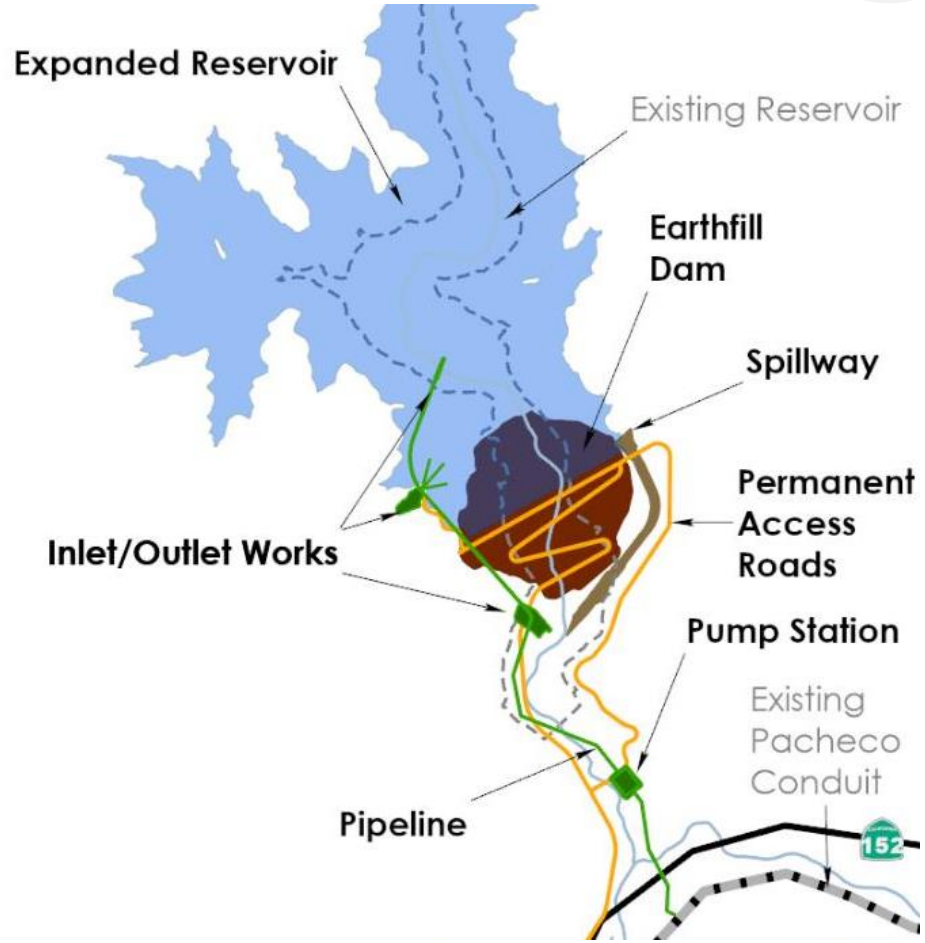
- 1. Geotechnical/Design
- 2. Unit Prices & Quantities
- 3. Other Drivers
- 4. Contingencies & Schedule



1. Geotechnical/Design Updates



- Dam foundation excavation
- Spillway
- Inlet/Outlet



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2. Unit Prices and Quantities

Estimated Unit Prices

- Filter/drain material costs
- Embankment/shell cost
- Conveyance pipe cost

Estimated Quantities

- Total embankment volume

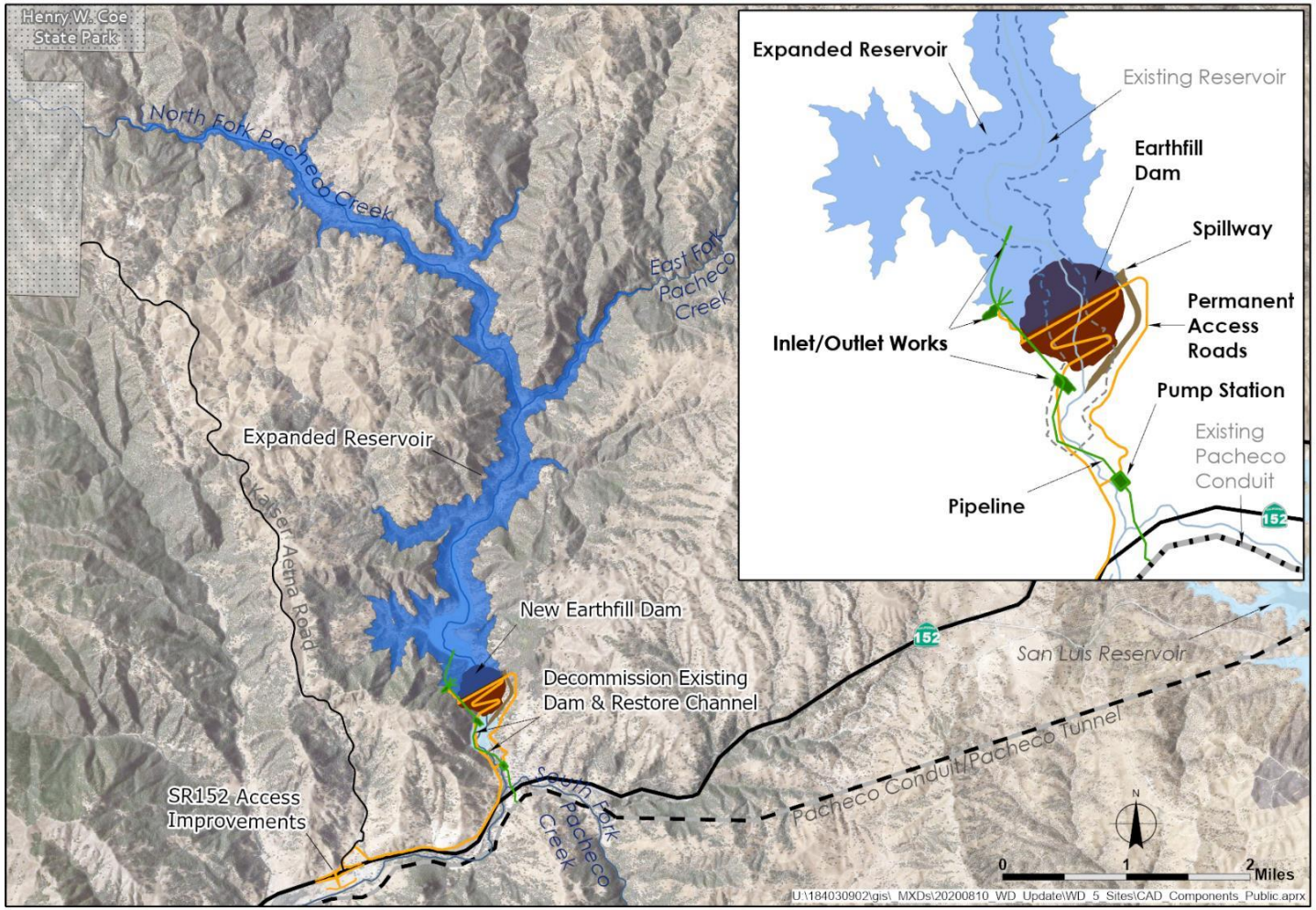
3. Other Drivers

Additional Updated Items

- Site and access roads
- Power transmission

Environmental/Permitting

- Land acquisition costs for mitigation



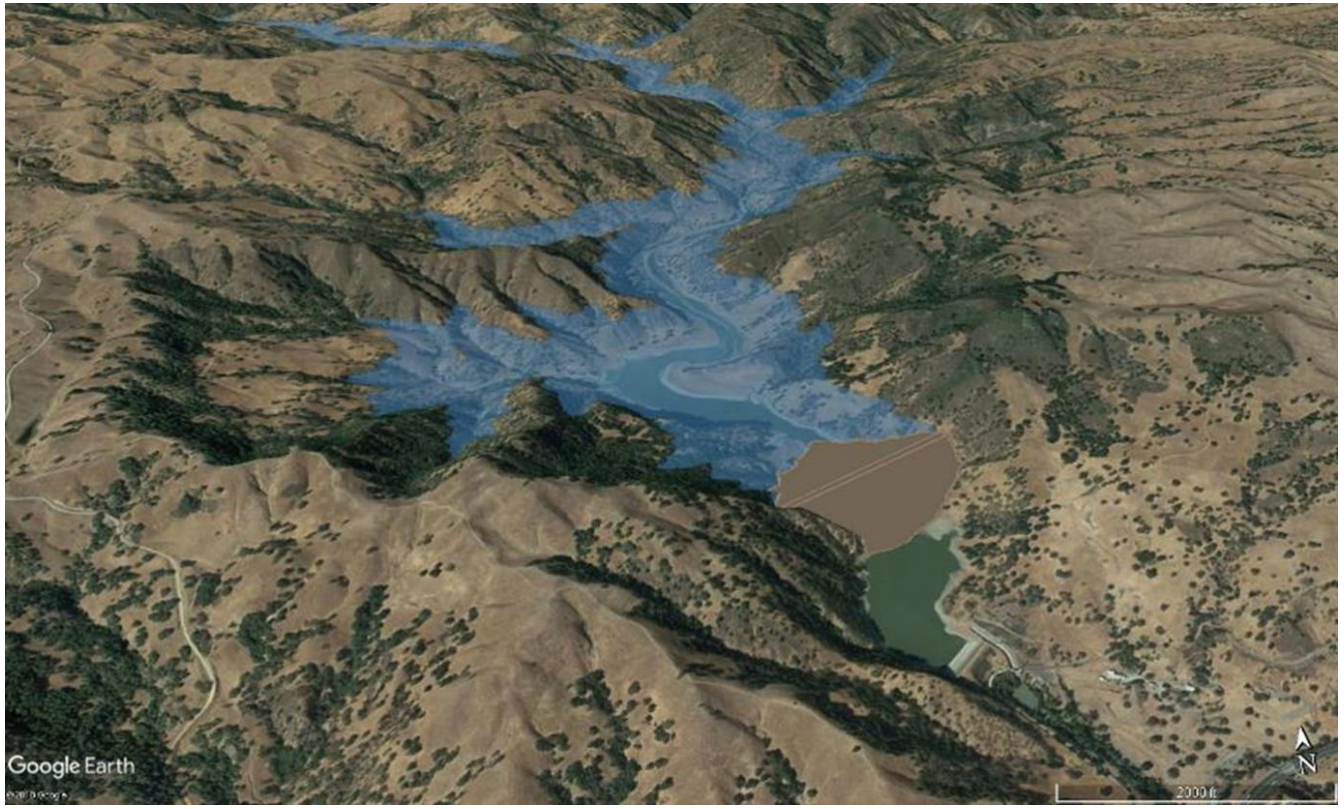
4. Contingencies and Schedule

Contingencies

- Increase in Design Contingency: 10% to 25%
- Construction Contingency: 20%

Construction Sequencing

- Schedule: 5 to 8 years

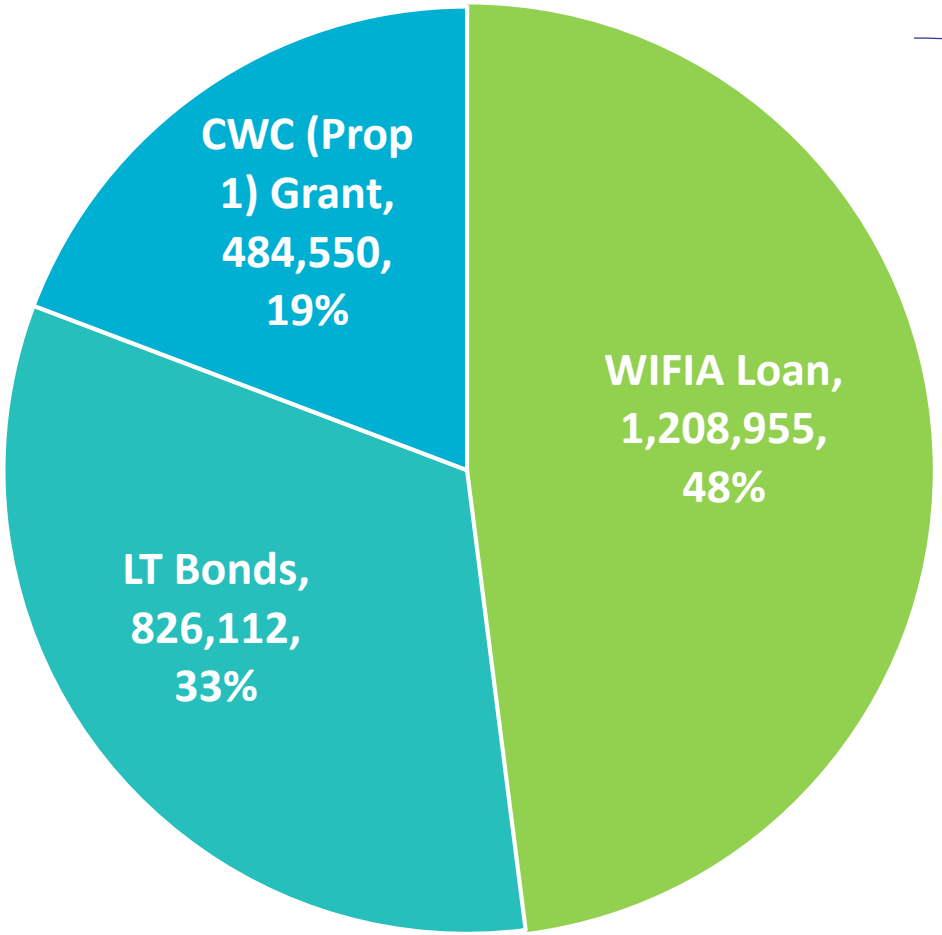


Project Cost Estimate History

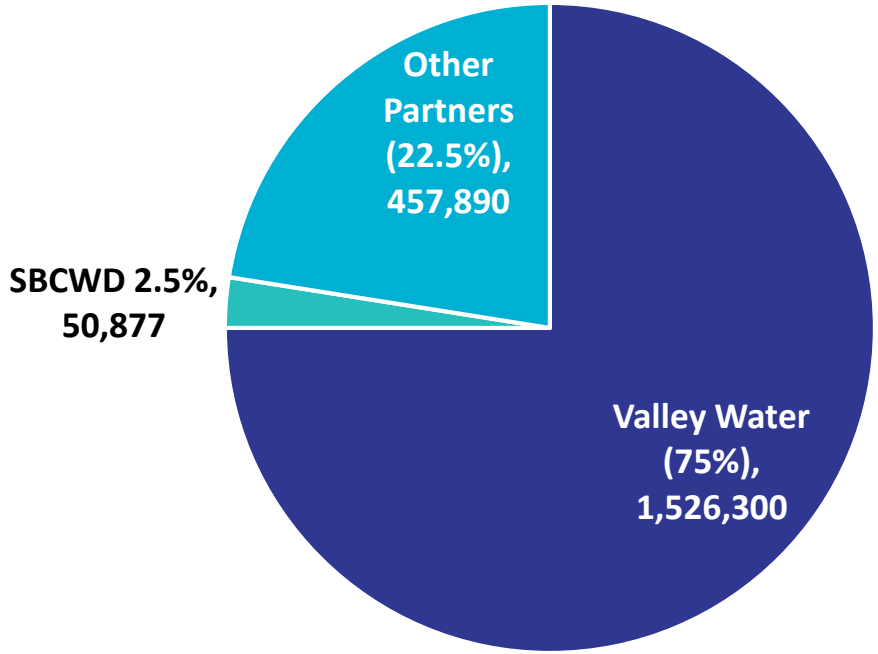
Year	CIP Estimate	Estimate with future inflation (CIP calc.)	
2017	$969,000,000	N/A	2015 dollars for WSIP Application
2019	$1,182,004,000	$1,345,000,000	No construction cost changes from WSIP estimate
2020	$2,203,321,000	$2,519,622,000	***NEW CONSTRUCTION ESTIMATE***

Financing Plan for 2020 Project Cost: $2.5B

(Amounts shown in $thousands)



Allocation of Debt Financing: $2B



Total Financing Costs (Principal + Interest): $3.8B*
Average Annual Debt Service: $81M*

* Preliminary financing estimates based on FY 2022 budgetary rates, subject to change pending timing, amount, and market conditions at time of debt issuance

Potential Reductions to Construction Cost

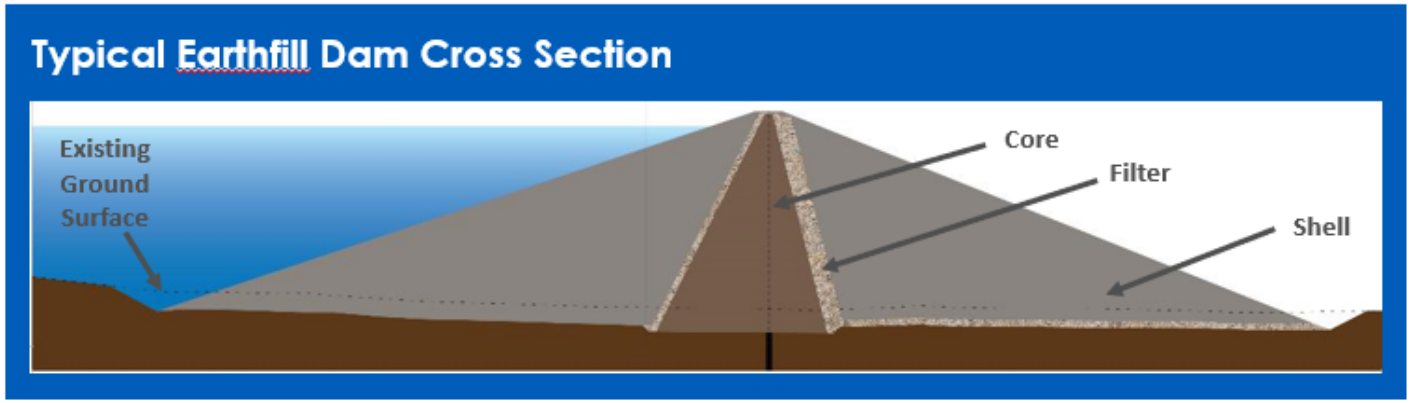
Alternative dam site upstream

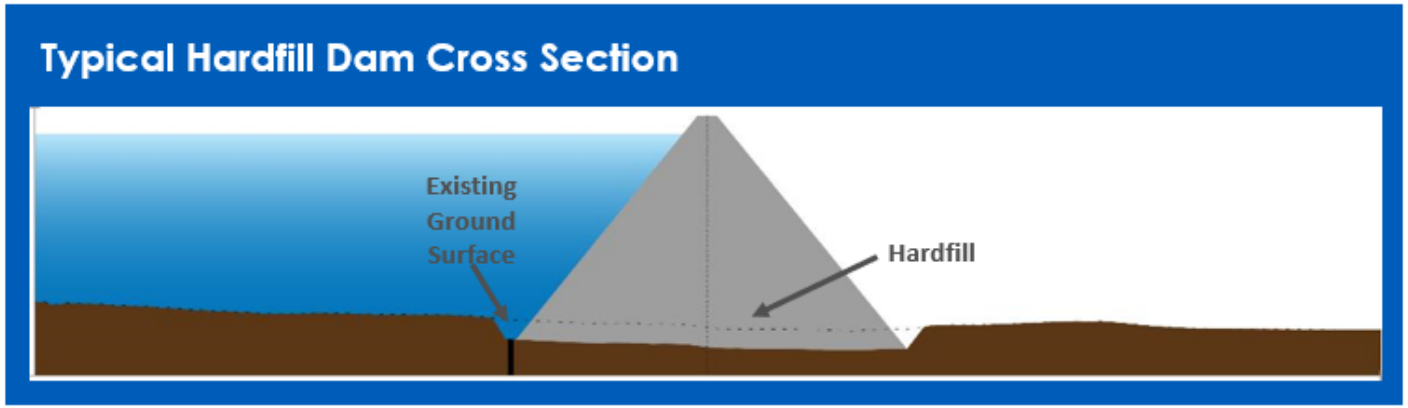
- Geotechnical investigations indicate more favorable conditions
- Reduced quantities due to topography (shorter dam)
- Longer conveyance pipeline, extended creek restoration

Potential Reductions to Construction Cost

Alternative dam type

- Hardfill dam (similar to Roller Compacted Concrete)
- Spillway and inlet/outlet works integrated into structure
- Reduced construction duration





Questions?

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Alternatives (lowest to highest cost at 5% design)

Preliminary Alternative #	Facilities Variations			Notes
	Dam Site Location	Expanded Reservoir Size	Dam Type	
5	*Upstream*	**96,000 AF**	Earthfill	• Narrower and smaller dam • Spillway and inlet/outlet works are separate from dam • Provides 31% less reservoir capacity
4	*Upstream*	140,000 AF	**Hardfill**	• Narrower dam (less embankment volume) • Spillway and inlet/outlet works are integrated into dam • Potentially shorter construction duration • Technical/permitting challenges • Encroaches into Henry Coe Park at full pool
2	Downstream	140,000 AF	**Hardfill**	• Spillway and inlet/outlet works are integrated into dam • Potentially shorter construction duration • Technical/permitting challenges
3	*Upstream*	140,000 AF	Earthfill	• Narrower dam (less embankment volume) • Spillway and inlet/outlet works are separate from dam • Encroaches into Henry Coe Park at full pool
1	Downstream	140,000 AF	Earthfill	• Similar to WSIP application • Spillway and inlet/outlet works are separate from dam