

**JOINT RESERVOIR COMMITTEE &  
AUTHORITY BOARD MEETING  
AGENDA ITEM 2.1**

**UPDATED FEASIBILITY TOTAL PROJECT  
COST ESTIMATE  
JUNE 23, 2021**



# Background

1. In 2019 the Authority initiated a comprehensive Value Planning process to identify the “right size” project
  - a) Affordable
  - b) Buildable
  - c) Permittable
  
2. The process was documented in the April 2020 Sites Project Value Planning Alternatives Appraisal Report
  - a) Recommended Alternative VP7: 1.5 MAF Reservoir
  - b) Alternative options VP5 and VP6: 1.3 MAF Reservoir
  - c) Conceptual screening cost estimate (AACE Class 5) of approximately \$3 billion in 2019 dollars

# Feasibility Design

1. Feasibility design of the “right size” project initiated in the Summer of 2020
  - a) Alternative 1: 1.5 MAF Reservoir
  - b) Alternative 2: 1.3 MAF Reservoir
2. Informs preparation of the Feasibility Cost Estimate
  - a) Collected more data
  - b) Additional engineering analysis
  - c) Design refinements
3. Resulted in:
  - a) 10% level of design details
  - b) Analysis of material needs and potential sources
  - c) Estimated construction schedule

# Feasibility Cost Estimate

1. Provides a higher level of accuracy (AACE Class 4)
  - a) Considered results from Feasibility Design
  - b) Bottom-up approach
2. Provides investors with a higher degree of certainty in project affordability
3. About a 30% cost increase compared to Value Planning estimates (AACE Class 4 vs. Class 5 cost estimates)
  - a) Alternative 1: **\$3.93 billion** (2021 dollars)
  - b) Alternative 2: **\$3.87 billion** (2021 dollars)

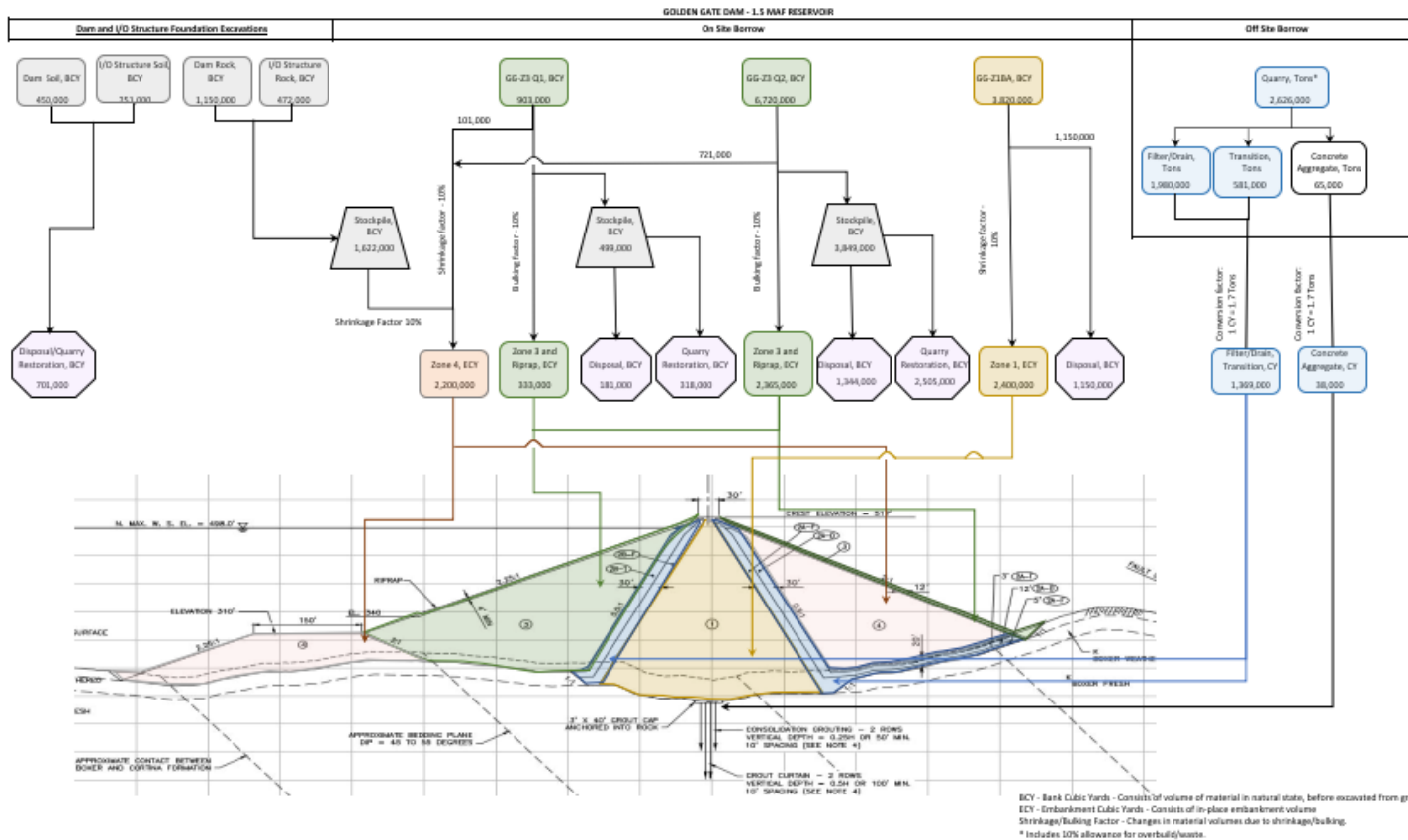
# Cost Increase Drivers

Facility	VP7 (2019 dollars)	Alternative 1 (2021 dollars)	Alternative 2 (2021 dollars)
Develop Sites Reservoir, including Sites Lodoga Road, Clearing and Demolition	\$143,000,000	\$227,400,000	\$548,500,000
Other Roads (Project and Recreation)	\$79,000,000	\$70,900,000	\$80,600,000
South Road to Residents	\$41,000,000	\$45,500,000	-
Sites Lodoga Road Bridge	\$180,000,000	\$172,700,000	-
North Construction Access Road	\$30,000,000	\$29,300,000	\$29,300,000
Construct Sites Dam and Golden Gate Dam	\$450,000,000	\$1,056,800,000	\$913,500,000
Construct Saddle Dams	\$198,000,000	\$484,800,000	\$290,600,000
Construct TRR	\$51,000,000	\$212,000,000	\$212,000,000
Funks Reservoir Dredging/Structures	\$24,000,000	\$40,000,000	\$40,000,000
Hunters Creek Release Structures	\$91,000,000	-	-
Construct I/O Structure and Tunnels for Reservoir	\$302,000,000	\$263,600,000	\$259,200,000
Construct TRR Pumping/Generating Plant	\$200,000,000	\$112,700,000	\$112,700,000
Construct Funks Pumping/Generating Plant	\$200,000,000	\$114,400,000	\$114,400,000
Construct Funks Release Channel	\$34,000,000	-	-
Red Bluff Pump Addition	\$4,000,000	\$4,900,000	\$4,900,000
Construct TRR Pipeline & Funks Pipeline	\$227,000,000	\$226,900,000	\$226,900,000
Construct Dunnigan Pipeline (1,000 cfs) Release Structure	\$66,000,000	\$96,700,000	\$266,200,000
Transmission Lines, Substations, Switchyards	\$8,600,000	-	-
General Property, including Recreation Areas and OM&R Facilities	\$136,000,000	\$156,600,000	\$156,600,000
Mitigation	\$32,000,000	\$33,000,000	\$33,000,000
GCID Improvements	\$540,000,000	\$579,400,000	\$579,400,000
	-	\$6,600,000	\$6,600,000
<b>Total</b>	<b>\$3,036,600,000</b>	<b>\$3,934,200,000</b>	<b>\$3,874,000,000</b>

# Market Price Increase

## DRAFT - MATERIALS BALANCE GOLDEN GATE DAM - 1.5 MAF RESERVOIR

Calculated by: BN  
Reviewed by: MS  
Date: January, 2021

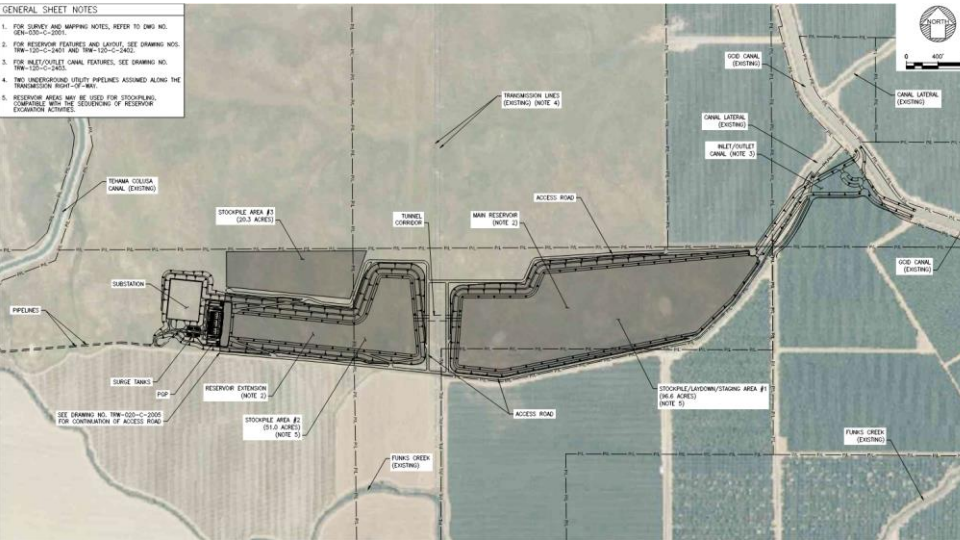


18% to 23% increase in unit price for embankment materials

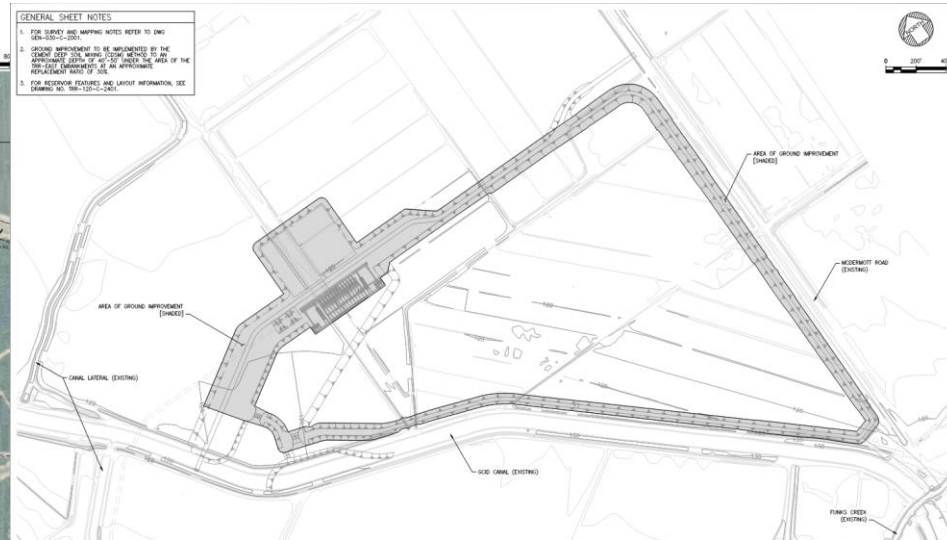


# Additional Data and Design Refinements

## TRR West



## TRR East



Facility	TRR West (2021 dollars)	TRR East (2021 dollars)
TRR Reservoir	\$212,000,000	\$185,100,000
TRR/Funks Pipelines	\$226,900,000	\$369,600,000
TRR Transmission Power Lines	\$39,300,000	\$60,400,000
<b>Total</b>	<b>\$478,200,000</b>	<b>\$615,100,000</b>

1. TRR Reservoir cost increase is about 5% of VP7 total cost estimate

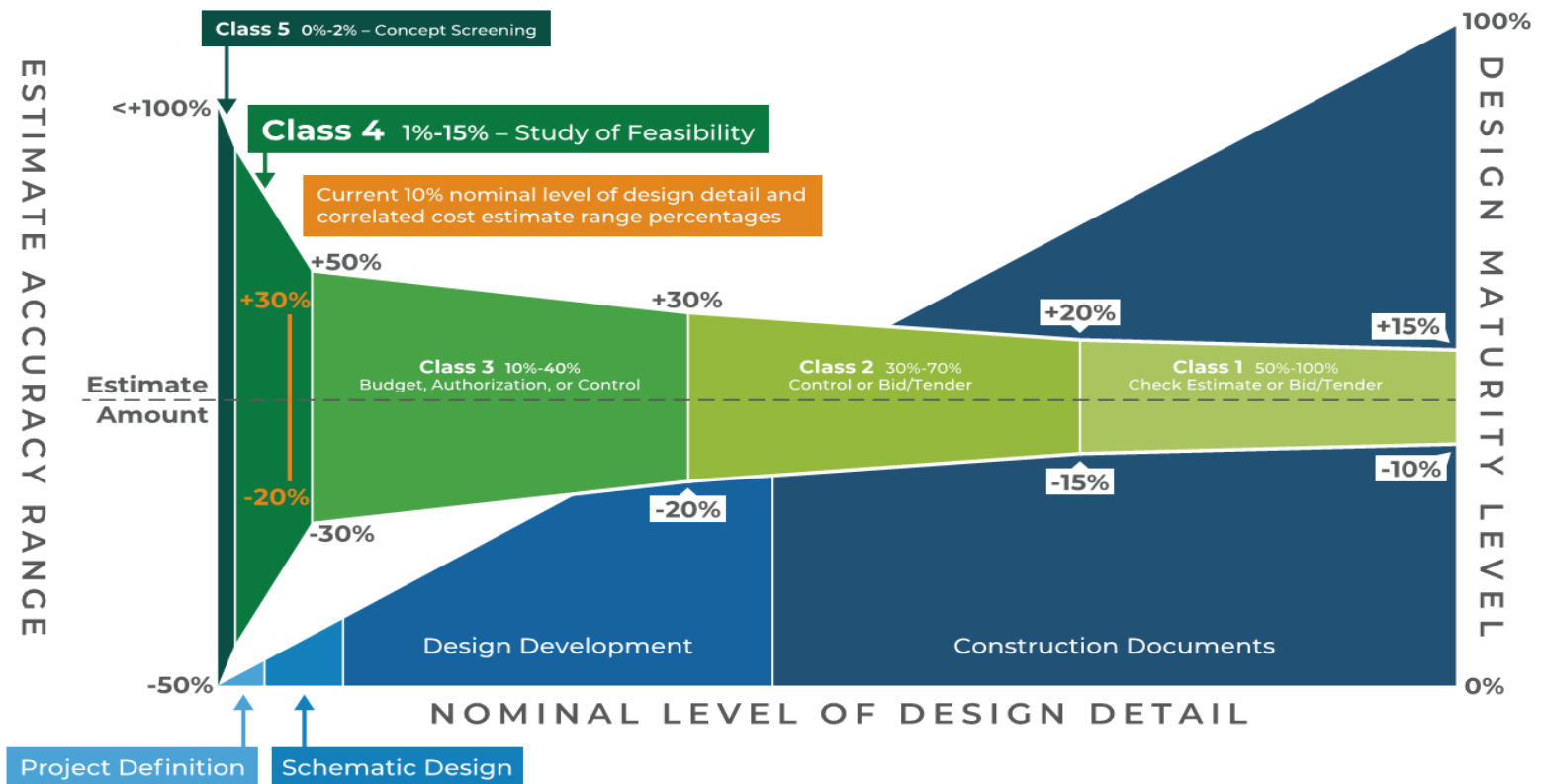
- a) Resulted from design refinements based on additional geotechnical data that was not available during the Value Planning process

# Consideration of Uncertainties

1. Design and Construction Contingencies
  - a) About 15% of total cost estimate, **\$583M**
  - b) Recommended based on current project understanding
2. Environmental Mitigation
  - a) About 15% of total cost estimate, **\$579M**
3. Non-Contract Costs including administration, real estate, and legal services
  - a) About 13% of total cost estimate, **\$496M**
4. Alignment with Bureau of Reclamation
  1. Combined environmental mitigation and non-contract costs typically range from 25% to 30% of total cost estimate



# AACE Cost Estimate Classification System



# Next Steps

1. The Feasibility Cost Estimate is **not a final estimate**
  - a) Used in preparation of the WSIP Feasibility Report to meet CWC Prop 1 requirement
  - b) Inform project funding and affordability analysis
2. Next phase of design development
  - a) Continue to collect additional technical data
  - b) Refine project analysis and design
  - c) Evaluate potential cost saving opportunities
  - d) Focused on controlling project costs and continue to be transparent with information needed to support decision making
    - Prepare AACE Class 3 Cost Estimates for even greater cost accuracy and certainty

# Questions?



