



**LOS VAQUEROS RESERVOIR JOINT POWERS AUTHORITY  
OPERATIONS AND ENGINEERING COMMITTEE  
AGENDA**

Regular Meeting  
June 16, 2022 – 10:00 a.m.

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**SPECIAL NOTICE OF TELECONFERENCE ACCESSIBILITY**

Pursuant to the provisions of Government Code Section 54953(e), as amended by Assembly Bill 361, any Committee Member and any member of the public who desires to participate in the open session items of this meeting may do so by accessing the Zoom link below without otherwise complying with the Brown Act's teleconference requirements.

**Please click the link below to join the Meeting/Webinar:**

**<https://lagerlof.zoom.us/j/81556636705?pwd=Z0pud2FnTnREQINMNW91MFo4dDI0QT09>**

**Webinar ID: 815 5663 6705**

**Passcode: 913403**

**Or One tap mobile:**

**US+16699006833,,81556636705# \*913403# or**

**+13462487799,,81556636705# \*913403#**

**Or Telephone:**

**US: +1-669-900-6833 or +1-346-248-7799**

Any member of the public wishing to make any comments to the Committee may do so by accessing the above-referenced link where they may select the option to join via webcam or teleconference. Members of the public may also submit written comments to the Interim Clerk by 4:00 p.m. on the day prior to the meeting for the Interim Clerk to read into the record (subject to three-minute limitation). The meeting Chair will acknowledge such individual(s) at the appropriate time in the meeting prior to making their comment. Members of the public will be disconnected from the meeting prior to any Closed Session, if applicable.

*NOTE: To comply with the Americans with Disabilities Act, if you need special assistance to participate in this Committee meeting, please contact the Authority's Interim Clerk at [rperea@lagerlof.com](mailto:rperea@lagerlof.com) by 4:00 p.m. on June 15, 2022 to inform the Authority of your needs and to determine if accommodation is feasible. Each item on the Agenda shall be deemed to include any*

*appropriate motion, resolution, or ordinance, to take action on any item. Materials related to items on this Agenda are available for public review at: [www.losvaquerosjpa.com/board-meetings](http://www.losvaquerosjpa.com/board-meetings).*

## **CALL TO ORDER**

## **PLEDGE OF ALLEGIANCE**

## **ROLL CALL OF COMMITTEE MEMBERS**

Jose Gutierrez – Chair, San Luis & Delta-Mendota Water Authority

Jonathan Wunderlich – Alameda County Water District

Steve Ritchie – San Francisco Public Utilities Commission

## **PUBLIC COMMENT ON NON-AGENDA ITEMS**

*Any member of the public wishing to address the Operations and Engineering Committee regarding items not on the Agenda should do so at this time. The Committee welcomes your comments and requests that speakers present their remarks within established time limits and on issues that directly affect the Authority or are within the jurisdiction of the Authority.*

## **DISCUSSION ITEMS**

**1.1 May 26, 2022 Operations and Engineering Committee Meeting Summary**

**1.2 Overview of Los Vaqueros Dam Design and Cost Estimate**

## **FUTURE AGENDA ITEMS**

## **ADJOURNMENT**

**ITEM 1.1: MAY 26, 2022 OPERATIONS AND ENGINEERING COMMITTEE MEETING SUMMARY**

**RESPONSIBLE/LEAD STAFF MEMBER:**

James Ciampa, Interim General Counsel

**DISCUSSION:**

Attached for the Committee's information is the summary prepared for the May 26, 2022 Operations and Engineering Committee meeting.

**ALTERNATIVES:**

Any suggested revisions to the attached summary will be considered.

**FISCAL ANALYSIS:**

Not applicable.

**ENVIRONMENTAL REQUIREMENTS:**

Not applicable.

**EXHIBITS/ATTACHMENTS:**

Summary from May 26, 2022 Operations and Engineering Committee meeting



## SUMMARY OF REGULAR MEETING OF OPERATIONS AND ENGINEERING COMMITTEE

May 26, 2022 – 10:00 a.m.

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All members of the Committee (Jose Gutierrez, Chair; Jonathan Wunderlich and Steve Ritchie) were present.

The draft minutes from the April 21, 2022 Operations and Engineering Committee meeting were presented and were unanimously approved without change.

**Overview Of Current and Future Operations Of The Los Vaqueros Reservoir:** Deputy Interim Administrator Maureen Martin provided the Committee with an overview of the current and planned future operations of the Los Vaqueros Reservoir. The presentation included a review of Project facilities, and a summary of the modes of operation, operational constraints and operations of the Project, including information concerning the Authority's possible use of Project facilities. Ms. Martin reviewed three hypothetical operational scenarios. Ms. Martin answered questions posed by Committee members and provided supplemental information, including regarding the ability of CCWD staff to quickly pivot in operating the Project if conditions change.

**Draft Operations and Engineering Charter:** James Ciampa, Interim General Counsel, reviewed the draft Operations and Engineering Committee Charter. After discussion, a motion was made by committee member Steve Ritchie, seconded by committee member Jonathan Wunderlich, to approve the Operations and Engineering Committee Charter as presented and recommend that the Operations and Engineering Charter be presented to the Board of Directors for approval. The motion was unanimously approved as follows:

AYES: Jose Gutierrez, Chair, San Luis & Delta-Mendota Water Authority  
Jonathan Wunderlich, Alameda County Water District  
Steve Ritchie, San Francisco Public Utilities Commission

NOES: None

ABSENT: None

ABSTAIN: None

The motion passed with an 3-0 vote.

**Future Agenda Items:** Deputy Interim Administrator Martin advised that a future item to be discussed is an update on the Los Vaqueros Dam design and related cost estimates

The meeting was adjourned at 10:59 a.m.

*James D. Ciampa*

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James D. Ciampa  
Interim General Counsel

**ITEM 1.2: OVERVIEW OF LOS VAQUEROS DESIGN AND COST ESTIMATE**

**RESPONSIBLE/LEAD STAFF MEMBER:**

Marguerite Patil, Interim Administrator

**DISCUSSION:**

CCWD staff will provide the Committee with an overview of the design of the proposed changes to the Los Vaqueros Dam and present the current draft cost estimate for such project-related work.

**ALTERNATIVES:**

For information only; no alternatives applicable.

**FISCAL ANALYSIS:**

Fiscal impact will depend on final design and construction costs at the time of implementation.

**ENVIRONMENTAL REQUIREMENTS:**

Not applicable

**EXHIBITS/ATTACHMENTS:**

Slide deck for Los Vaqueros Dam design



**LOS  
VAQUEROS**  
RESERVOIR  
EXPANSION  
PROJECT

**Joint Power Authority  
Operations and Engineering Meeting  
LV Dam Expansion Design Overview**

**June 16, 2022**

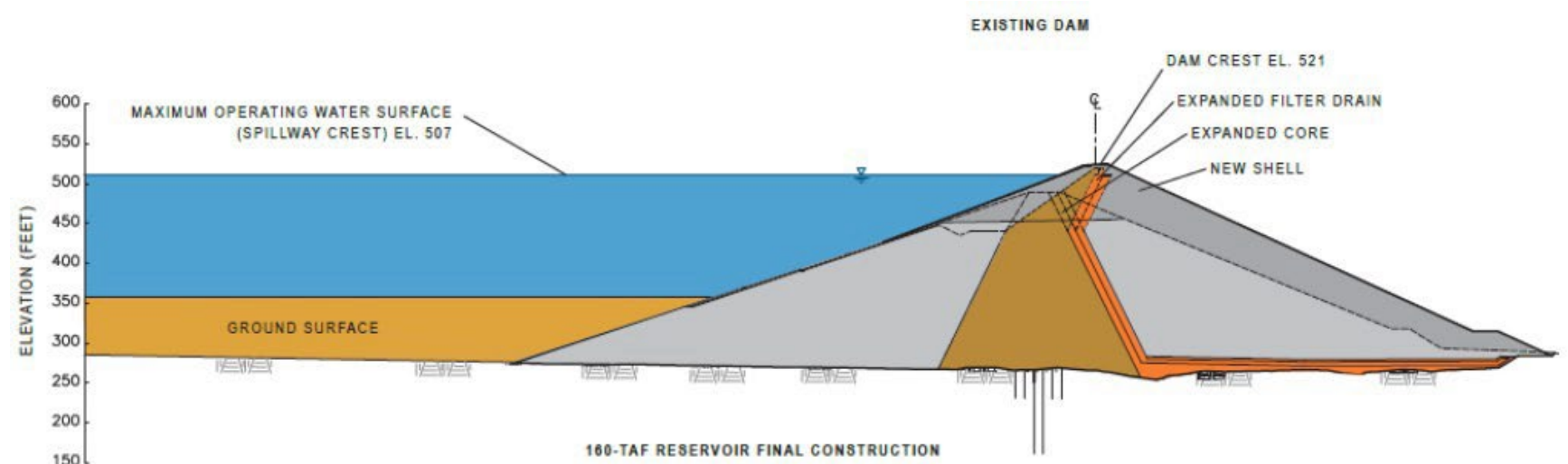
# Dam Design Review Topics

- LV Dam Background
- Dam Design Overview
- Construction Cost Estimate
- Design Oversight
- Risk Report
- Next Steps



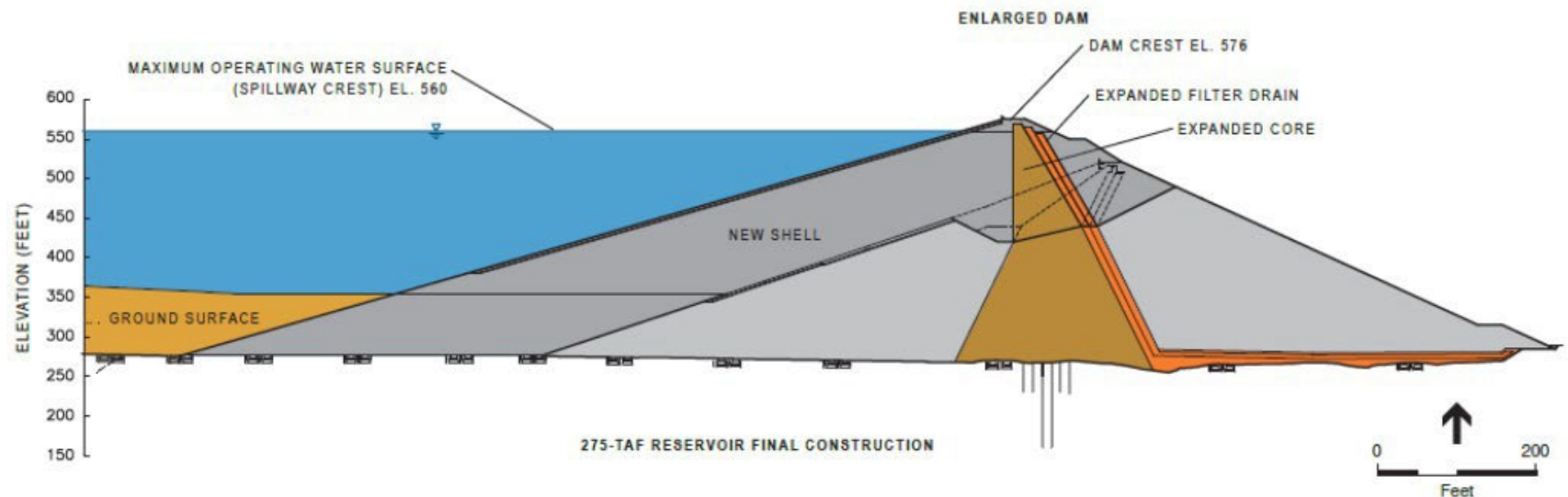
# Phase 1 Dam Expansion

- Original 100 TAF LV Project constructed in 1998
- Phase 1 Expansion to 160 TAF in 2012
  - Downstream dam raise
  - Reservoir remained operational during construction



# Phase 2 LV Dam Expansion

- Proposed expansion to 275 TAF with 55-foot raise
- Complete evacuation for 2 to 5 years
  - 2.5 years of construction
  - 2 – 3 years for refill to restore operation
- Backstop agreement needed to maintain District supplies

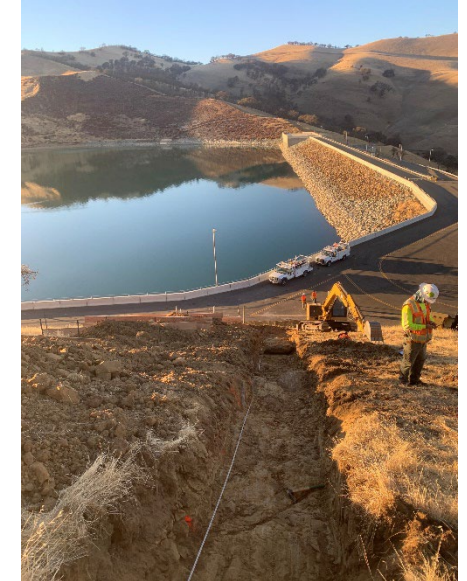


# Geotechnical Investigation Program

- Built upon extensive investigation and construction of 100 TAF and 160 TAF projects
- Completed 2-year geotechnical investigation
  - Input from DSOD and the Technical Review Board
  - Completed additional 42 borings and 4 trenches
  - Implemented field and laboratory testing to confirm strength parameters

# Geotechnical Investigation Findings

- Investigated two shell borrow sites and selected one with consistent material for efficient mining
- Core material source consistent with previous construction and good source of material
- Extensive exploration of right abutment was conducted



# Seismicity

- LV located between the West Tracy and Midland faults to the east and the Greenville fault to the west.
- Performed a site-specific probabilistic and deterministic seismic hazard analyses
- Maximum Credible earthquake of 7.3 on the Midland fault produces the highest peak acceleration of 0.89g.
- 275 TAF dam performs within acceptable tolerances under all evaluated scenarios including the MCE



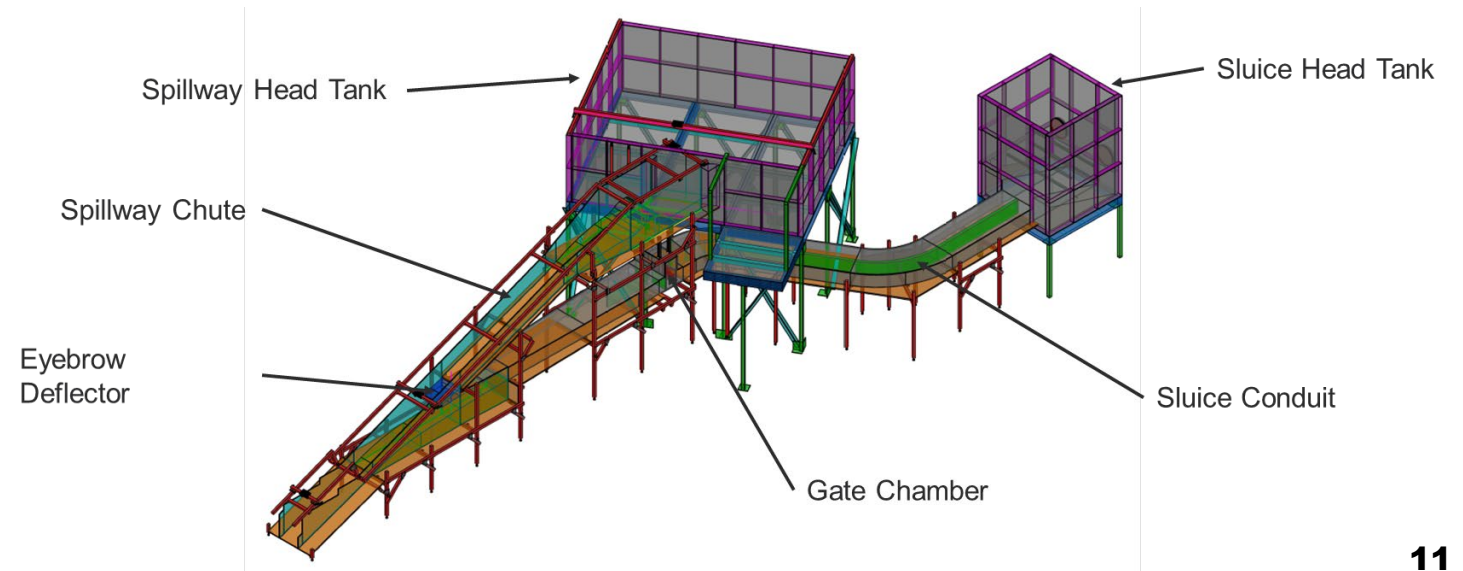
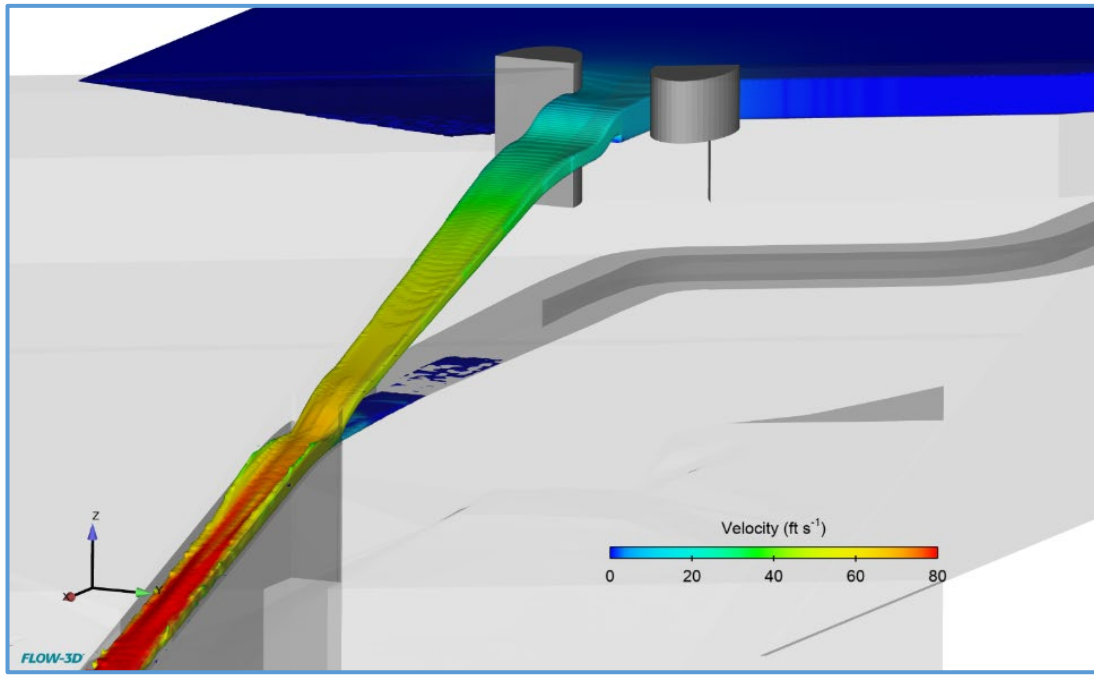
# Emergency Facilities

- DSOD requires the ability to draw down the reservoir in an emergency
  - Evacuate the top 10% in 7 to 10 days
  - Evacuate completely in 90 to 120 days
- LVE design meets 10% drawdown in 7 days, and full draining in 95 days
- A new High-Level Outlet is capable of emergency releases when the reservoir is nearly full
- The existing outlet tunnel will release emergency flows when the reservoir level is below the High-Level Outlet

# Modeling of the Outlet Structure

- Modeling was completed to confirm the spillway and HLO could meet the flow requirements
- Performed Computational Fluid Dynamics to develop the model design
- Constructed a 12:1 scale physical model at Colorado State University
- Adjusted the model geometry to meet all flow conditions
- Reviewed performance with DSOD and the Technical Review Board







- Completed model runs for a wide variety of emergency and non-emergency scenarios

# LV Dam Risk Assessment

- Identify potential risks that could adversely impact the project or cost and mitigation measures to reduce risks
- Track implementation of mitigation and estimated residual risks
- District conducted a risk assessment and prepared a risk register for the dam in October 2020
- A risk review to identify remaining risk-mitigation needs will be completed by August 2022

# Technical Review Board

- Convened a panel of independent experts in design, construction and permitting of earthen dams
- Reviewed designs at key milestones
  - Geotechnical Investigation Work Plan
  - Physical Model
  - 50% and 90% Design
- Presented designs and technical information and received comments
- Responding to and resolving all TRB comments as part of design and technical evaluations

# DSOD Reviews

- DSOD review and approval is required prior to construction and is a CWC Full Funding requirement
- Held regular coordination meetings
- Attended all TRB meetings
- Will submit final design and technical documents for review in July
  - 99% Drawings and Technical Specification
  - Basis of Design Report

# 90% CONSTRUCTION COST ESTIMATE

# Construction Cost Estimate

- Prepared based on the 90% Design
- Included a detailed construction schedule
- Detailed quantity takeoffs for all activities:
  - Major earthwork and RCC comprise approximately 80% of the cost of construction
- Estimated in October 2021 dollars
- Includes escalation through construction

# Construction Cost Estimate

- Estimate consistent with AACE Class 2 in 2021 dollars

- Construction Cost Estimate           \$231 million\*
- Change Order Allowance           \$22 million
- Total                                       \$253 million

- Federal Feasibility Report Estimate

- Construction Cost                   \$284 million (Oct 2015)
- Escalated                               \$367 million (Oct 2021)



# Next Steps

- Submit 100% design to DSOD
- DSOD Approval (anticipated)

July 2022

September 2022

