LOS VAQUEROS RESERVOIR JOINT POWERS AUTHORITY
OPERATIONS AND ENGINEERING COMMITTEE
AGENDA

Regular Meeting
June 15, 2023 – 10:00 a.m.

Directors participating telephonically:

Jose Gutierrez - 3130 North Fresno Street, Fresno, California 93703
Steve Ritchie - 525 Golden Gate Avenue, San Francisco, CA 94102
Jonathan Wunderlich - 43885 S. Grimmer Blvd., Fremont, California 94538

This meeting will be conducted remotely 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/83227564437?pwd=SnBST0lHQXdkbm8rNEp0ODB0NjN0dz09
Webinar ID: 832 2756 4437
Passcode: 567930
Or One tap mobile:
US: +16699006833,,83227564437#,,,,*567930#
or Telephone: +1-669-900-6833

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 Clerk by 4:00 p.m. on the day prior to the meeting for the 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 by 4:00 p.m. on June 14, 2023 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.

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
Antonio Martinez – Contra Costa 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 March 16, 2023 Operations and Engineering Committee Meeting Summary

1.2 Update on Pumping Plant No. 1 Replacement Design

1.3 Update on Transfer-Bethany Pipeline

FUTURE AGENDA ITEMS

ADJOURNMENT

ITEM 1.1: MARCH 16, 2023 OPERATIONS AND ENGINEERING COMMITTEE MEETING SUMMARY

RESPONSIBLE/LEAD STAFF MEMBER:

James Ciampa, General Counsel

DISCUSSION:

Attached for the Committee's information is the summary prepared for the March 16, 2023 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 March 16, 2023 Operations and Engineering Committee meeting

SUMMARY OF REGULAR MEETING OF OPERATIONS AND ENGINEERING COMMITTEE

March 16, 2023 – 10:00 a.m.

Chair Jose Gutierrez and Committee Members Jonathan Wunderlich, Antonio Martinez and Steve Ritchie participated telephonically. Staff and nine others also participated. The meeting was called to order at 10:00 a.m.

1.1 February 16, 2023 Operations and Engineering Committee Meeting Summary.

The summary from the February 16, 2023 Operations and Engineering Committee meeting was presented. The draft summary was accepted with no revisions and will be included in the next Board meeting packet.

1.2 Review of Transfer Pipeline Inspection Results.

Taryn Ravazzini, Executive Director, introduced Bryan Perkins, CCWD Senior Engineer, who reviewed the results from the recent inspection of the Transfer Pipeline (TPL). The existing TPL is used to fill and draw water from the Los Vaqueros Reservoir (Reservoir). The TPL will continue to be relied upon following construction of the expanded Reservoir, and it will be operated under higher pressure with the increased Reservoir water level. CCWD conducted an inspection of the TPL to determine whether the TPL has sufficient pressure capacity to reliably operate under the future higher-pressure condition and to verify its current condition. Mr. Perkins reported the inspection report concluded the TPL is in good condition, with no major deficiencies or signs of corrosion and no major repairs needed.

Committee Member Steve Ritchie asked whether the high pressure expected from the Reservoir expansion was considered when the pipeline was first designed and constructed. Chris Hentz, CCWD Engineering Manager for the Los Vaqueros Reservoir Expansion Project, advised the TPL was not specifically designed for that increased pressure, but was designed very conservatively with excess strength to meet and exceed all American Water Works Association (AWWA) standards. He further stated the TPL's steel has been confirmed through testing to meet those AWWA requirements for safety and surge protection.

Committee member Antonio Martinez asked how future construction of the Project would affect the life of the TPL. Mr. Hentz advised that increased cathodic protection has been recommended to extend the TPL's useful life. Chair Jose Gutierrez inquired as to any costs that were assumed for rehabilitation of the TPL that were included in the budget that could now be removed. Mr. Hentz stated that such rehabilitation costs were not included in the budget for the

inspection report project, but that any additional costs for minor improvements are well within the contingency budget for the inspection project.

Executive Director Ravazzini thanked CCWD staff for the presentation and their continuing work on the Project. She also thanked members of the committee for their questions. She asked CCWD staff to elaborate on the coordination with East Bay MUD regarding supplying water to CCWD while the TPL was out of service. Mr. Hentz advised that coordination occurred under the existing CCWD-EBMUD intertie agreement and all went very well. Marguerite Patil added the inspection report project came in on schedule and under budget.

FUTURE AGENDA ITEMS:

None.

Executive Director Ravazzini advised she will work with the Committee to determine whether there are any matters that are time sensitive which would require an April meeting.

The meeting was adjourned at 10:34 a.m.

James D. Ciampa

James D. Ciampa
General Counsel

ITEM 1.2: UPDATE ON PUMPING PLANT NO. 1 REPLACEMENT DESIGN

RESPONSIBLE/LEAD STAFF MEMBER:

Taryn Ravazzini, Executive Director

DISCUSSION:

Pumping Plant No. 1 has a current capacity of 100 cubic feet per second (cfs). The capacity of that pumping plant must be increased to 350 cfs in order to deliver contemplated supplies to the Authority members through the Neroly High Lift Pump Station, as well as to meet reliability needs when the Los Vaqueros Reservoir is taken out of service.

Stan Ali of Contra Costa Water District staff and Bryan Perkins, Senior Engineer on CCWD's Los Vaqueros Project team, will review the current status of the design of the replacement facility for Pumping Plant No. 1, including reviewing the results of the geotechnical investigation completed in July 2022 and the results from the physical model of the Pumping Plant No. 1 replacement. They will also review the anticipated construction schedule and the related design coordination agreements that are needed.

ALTERNATIVES:

For information only

FISCAL ANALYSIS:

Not applicable

ENVIRONMENTAL REQUIREMENTS:

Not applicable

EXHIBITS/ATTACHMENTS:

Slide deck regarding Pumping Plant No. 1 Replacement Design


LOS VAQUEROS RESERVOIR EXPANSION PROJECT
Operations & Engineering Committee Meeting
Update on Pumping Plant No. 1 Replacement Project
June 15, 2023
7

Objective and Messages

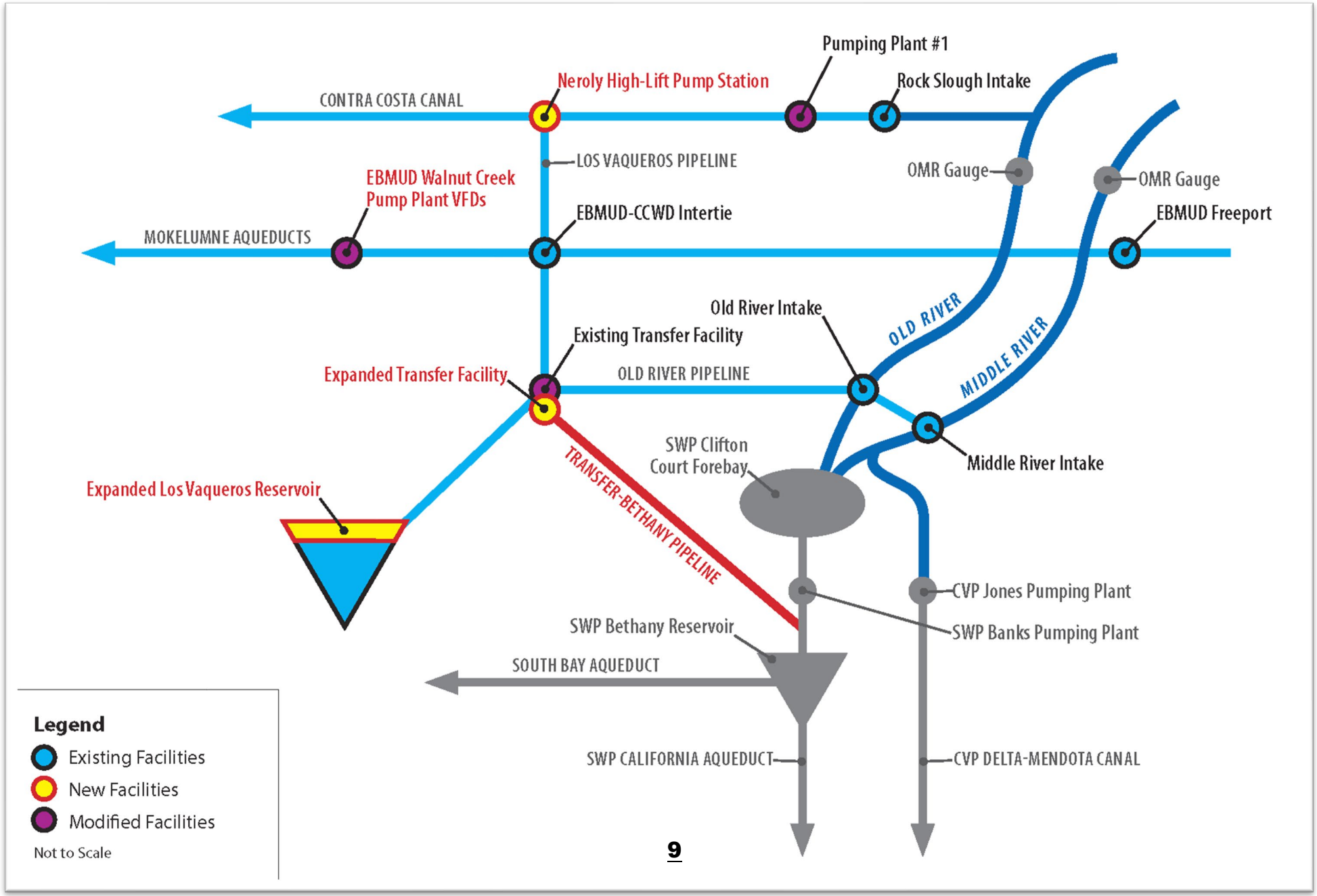
Objective

- Provide an update on the PP1 Replacement Project

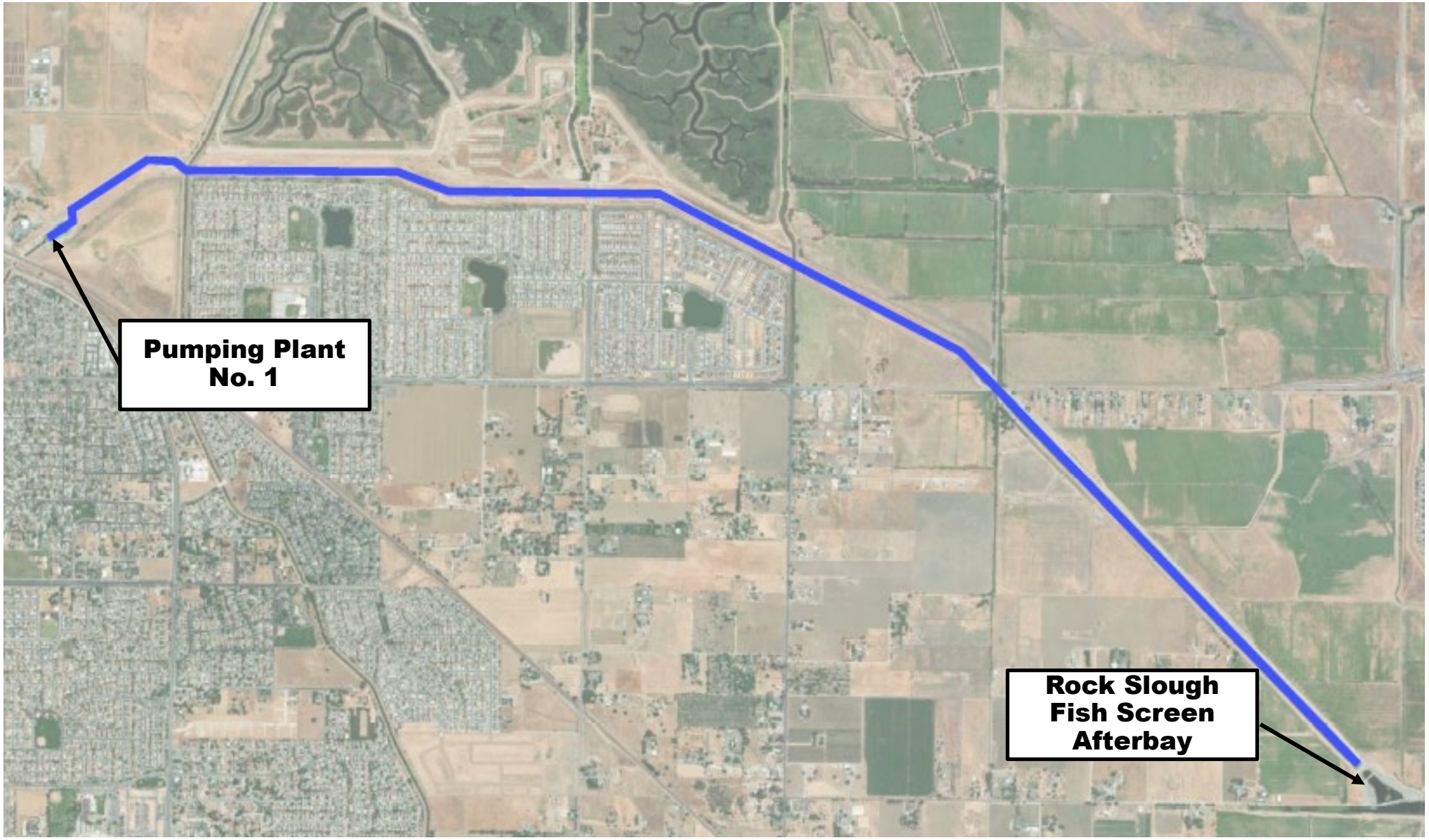
Messages:

- CCWD completed a geotechnical investigation and is addressing findings in the design
- Procurement of some equipment impacted by supply chain delays, will likely extend the construction schedule
- Timing of bidding reflects the latest plan for CWC Full Funding Award

LVE Facilities



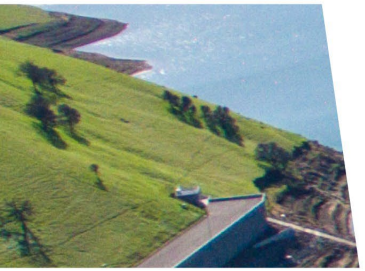
PP1 Location



Background

- The RS Intake, built in 1936, is one of four intakes used by the District to divert Delta supplies
- Originally designed and permitted for 350 cubic feet per second (cfs), PP1 capacity is currently 100 (cfs)
  - Reduced by Canal Replacement Project (CRP)
  - CRP identified modifications in 2009 to increase capacity when needed and financially justified
  - Explored feasibility to replace pumps to incrementally increase capacity if needed
  - If not for LVE, PP1 modifications would not be funded in CCWD's 10-year CIP

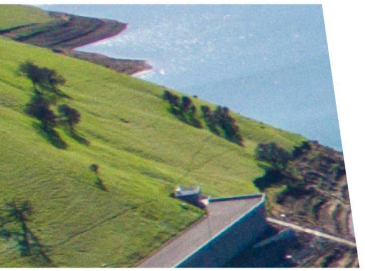
Background



- The scope and timing of PP1 Replacement is defined by LVE Project needs
- Replacing PP1 to achieve capacity of 350 cfs is needed to:
  - Deliver up to 300 cfs to partners through the Neroly High Lift Pump Station
  - Meet reliability needs during the Dam outage, avoiding a single point of failure for District operations

Geotechnical Investigation Findings





- Geotechnical investigation completed in July 2022
- Supports structural design, informs construction techniques, dewatering requirements, and cost estimates
- Significant potential for liquefaction from sandy soil layers and high groundwater
- District is evaluating options to avoid damage from settlement during a major earthquake

PP1 Physical Model

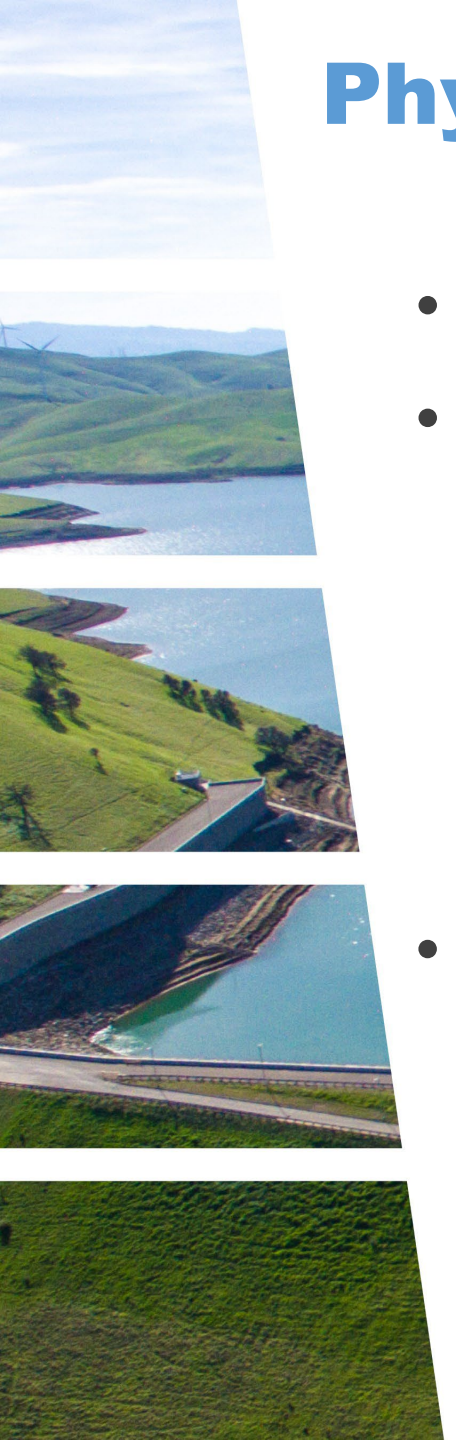
- Physical models are recommended by the Hydraulic Institute for high-flow pump stations
  - Reliable method to identify flow instabilities
  - Identify modifications and confirm adjustments at model scale
  - Reduce the risk of high-cost issues if found late in design or after construction
- A physical model of the PP1 Replacement was constructed in August 2022 and completed in November 2022
- Results peer reviewed by Stantec

Physical Model

LOS VAQUEROS RESERVOIR EXPANSION PROJECT

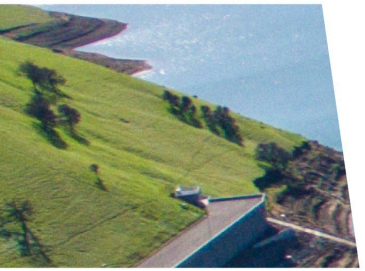
- Verified intake hydraulics
- Tested under a wide variety of scenarios to validate performance

Physical Modeling Results



- Confirmed suction side hydraulics of the project
- Minor recommended design enhancements
  - Install floor-sidewall fillet and floor cone
  - Install vanes within the pump suction can that are equally spaced
  - Relocate overflow return pipe downstream
- Pipe sizing and revised pump layout meets ANSI/HI-9.8 pump intake design standard for the full range of expected operations

PP1 Vegetation Screening

- Existing PP1 vegetation screen and rakes protect the pump from aquatic vegetation
- Vegetation will continue to present risks to pumps from the remaining 2-acre open water near RSFS
- Existing screens will be replaced with an upstream screen facility to protect the pumps
- District is conducting a design review to confirm the screen is the most cost-effective approach

60% Design Value Engineering (VE)

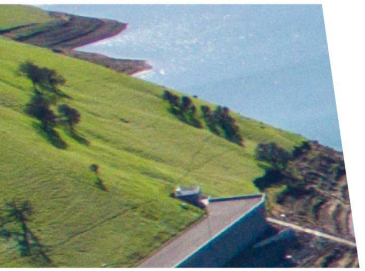
- District conducts design reviews and VE to identify potential cost-saving concepts for further evaluation
- Alternative concepts are identified for further evaluation to:
  - Confirm design intent is maintained
  - Cost savings are realized after additional analysis and estimating
- Reclamation required a formal VE Study of the 30% design
  - VE Study identified 5 concepts for consideration
- District requested GEI to review the 60% Design
  - GEI identified 9 concepts for consideration

VE Concept Evaluation

- District analyzed but did not adopt 4 of Reclamation's VE; they didn't meet the design objectives and offer savings:
  - Use of Archimedes' screw pumps; re-use 1930's era building for new motor control center; relocate PP1 upstream; modify manifold configuration
- District adopted Reclamation's recommendation for security ~$10,000
- GEI's review resulted in the following changes and savings:
  - Modify pump foundation concrete mix design ~$250k
  - Reduce pump foundation concrete volume ~$200k
  - Modify electrical building walls ~$35k
- CCWD will continue to conduct design reviews and present designs to the JPA Design Review Team at each design milestone

PP1 Construction Schedule





- District updated the construction schedule to reflect the 60% design
- Long lead electrical equipment has been identified as a critical path activity
  - Supply chain challenges continue to delay deliveries
  - Transformers have a lead time of 120 weeks
  - Value of equipment is estimated at $2.5 million
- PP1 has extended to a 3-year construction schedule
- Options to accelerate schedule constrained until construction funds are available

Design Coordination Agreements

- CCWD is progressing utility coordination and service agreements needed for construction

Agreement	Purpose	Status
Western Area Power Authority (WAPA	• Substation design approval • Pole relocation	• Ongoing design review under design agreement • Construction agreement needed by September 2024
Diablo Water District	• Utility Water	• Construction agreement needed by September 2024
Iron House Sanitation District (ISD)	• Disposal of construction groundwater on ISD-owned lands	• Agreement needed by September 2024 • Permits needed by September 2024

- Agreements are on track to be in place prior to bidding

Schedule

Item	Date
90% PP1 Design	Aug 2023
30% Veg Screen Design	November 2023
100% PP1 and Veg Screen Design	June 2024
Advertise PP1 for Bidding	Fall 2024
PP1 Construction Start	Jan 2025

LOS VAQUEROS RESERVOIR EXPANSION PROJECT

QUESTIONS?

ITEM 1.3: UPDATE ON TRANSFER-BETHANY PIPELINE

RESPONSIBLE/LEAD STAFF MEMBER:

Taryn Ravazzini, Executive Director

DISCUSSION:

Bryan Perkins, Senior Engineer on CCWD's Los Vaqueros Project team, will provide an update on the status of the Transfer-Bethany Pipeline (TBPL), which will deliver water from the expanded Transfer Pump Station to the California Aqueduct. Mr. Perkins will review the selected TBPL alignment and hydraulic profile of the TBPL.

Mr. Perkins will also give the Committee an overview of the Turn-In Agreement that is under negotiation with the Department of Water Resources and provide an update on the Turn-In design. Mr. Perkins will provide the results of the geotechnical and environmental site investigations conducted to date, discuss right-of-way acquisition and review the TBPL schedule.

ALTERNATIVES:

For information only

FISCAL ANALYSIS:

Not applicable

ENVIRONMENTAL REQUIREMENTS:

Not applicable

EXHIBITS/ATTACHMENTS:

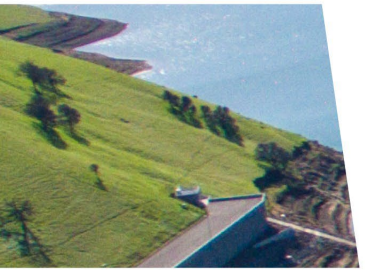
Slide deck regarding Transfer-Bethany Pipeline Update

Operations and Engineering Committee Meeting

Transfer-Bethany Pipeline Update

June 15, 2023

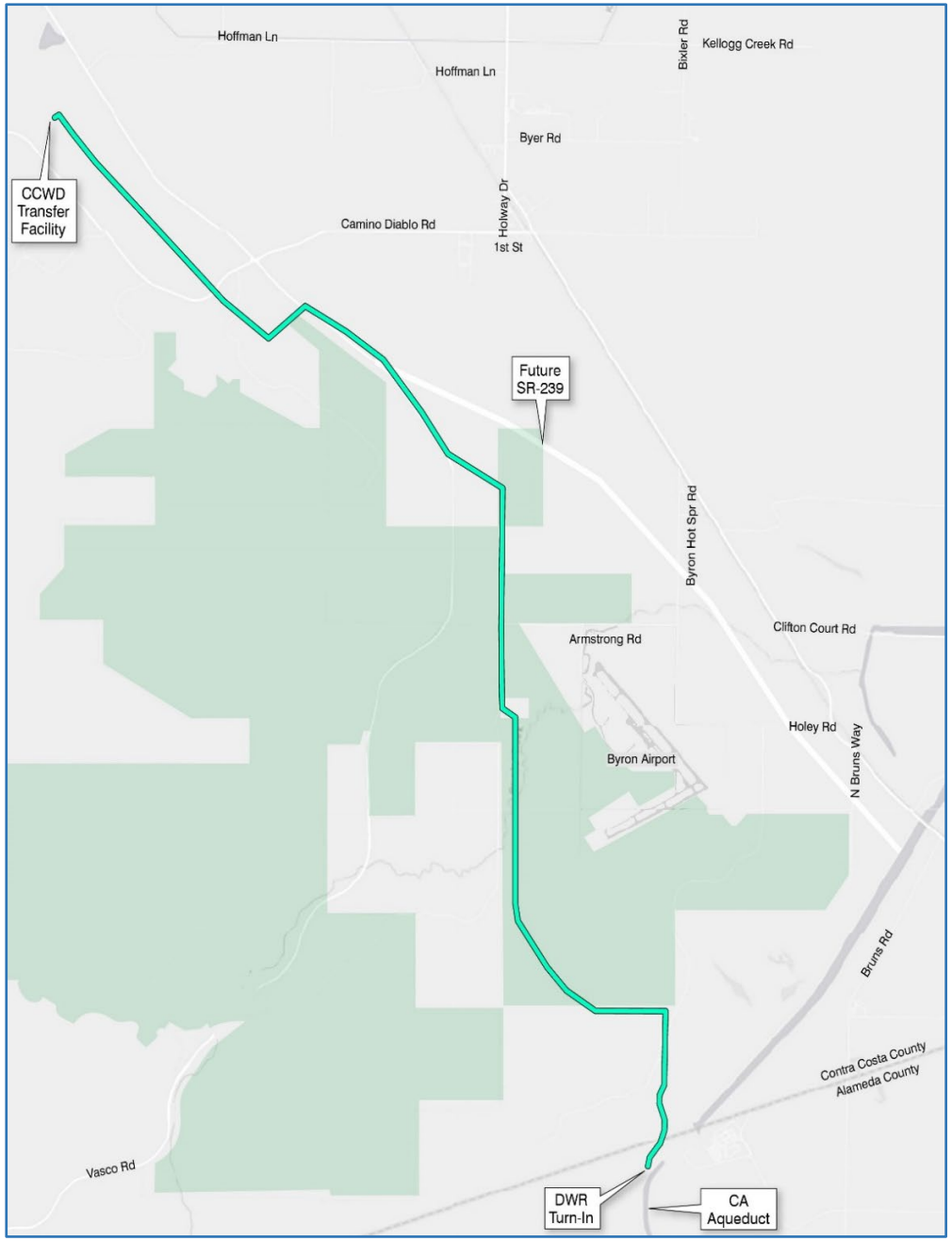




Background

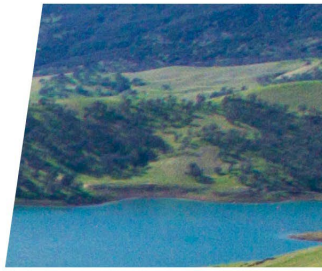
LOS VAQUEROS RESERVOIR EXPANSION PROJECT

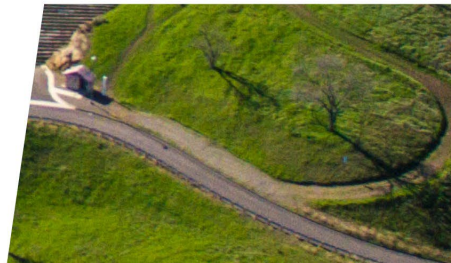
- Transfer-Bethany Pipeline (TBPL) will deliver water from expanded Transfer Pump Station (TPS) to the California Aqueduct
- TBPL will be a 90-inch, 7.5-mile pipeline with a max capacity of 300 cubic feet per second (cfs)
- The expected average annual delivery of TBPL is 80,000 Acre-feet per year
- Progressing design to support a Turn-In agreement with DWR, required ahead of CWC hearing



Pipeline Alignment

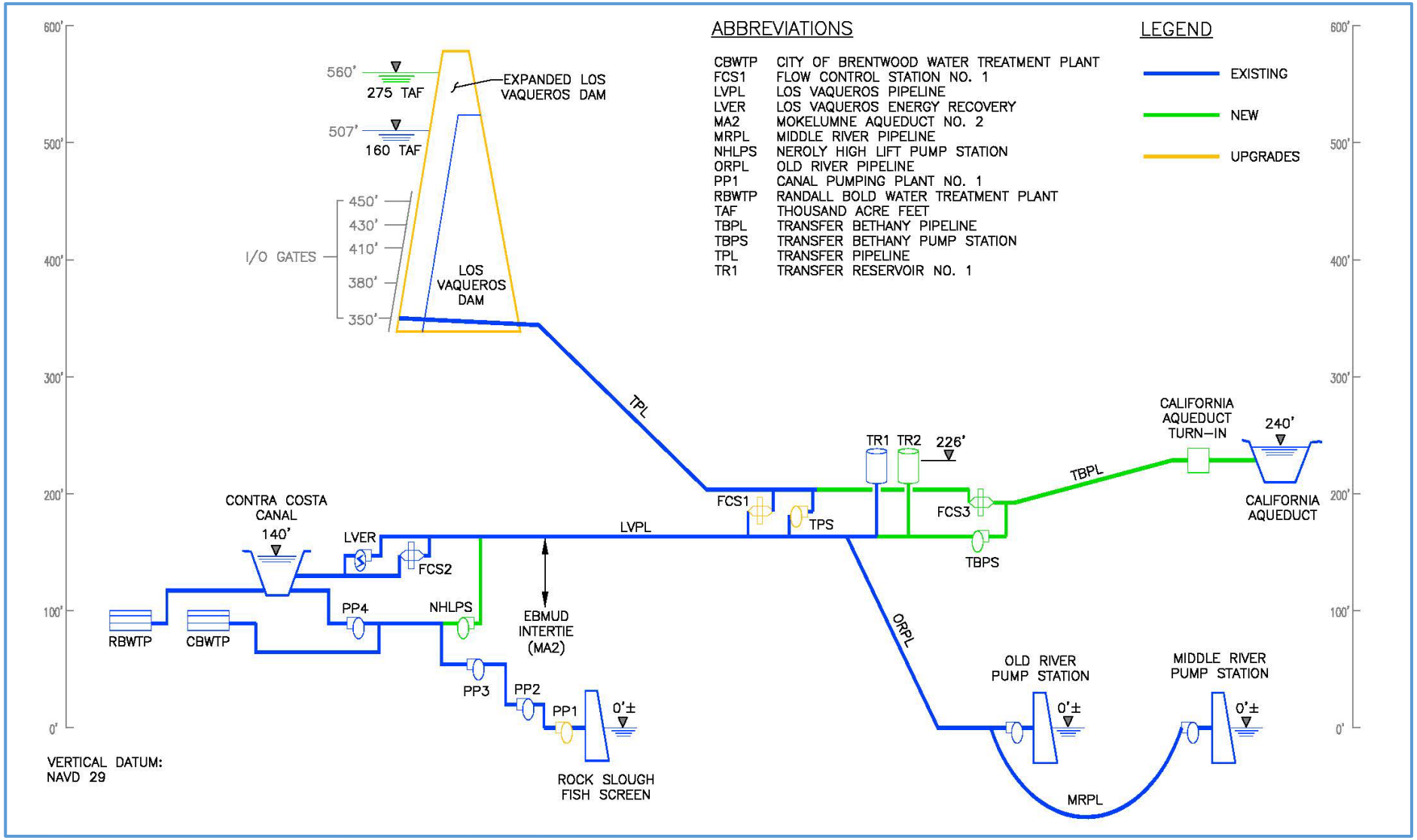
- Evaluated multiple alternatives
- Coordinated selection with CDFW and planned transportation improvements
- Selected Alignment:
  - Reduces impacts to lands encumbered with conservation protections
  - Overall lowest cost and lowest impact option

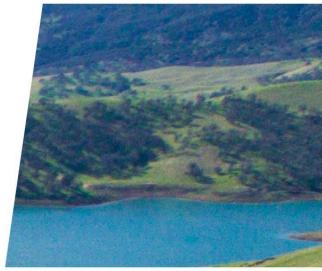



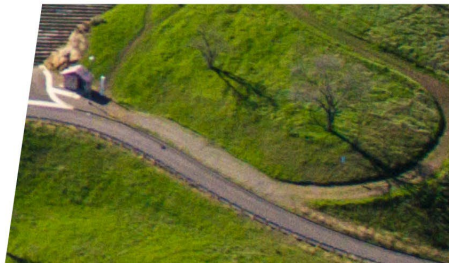



LOS VAQUEROS RESERVOIR EXPANSION PROJECT

Hydraulic Profile



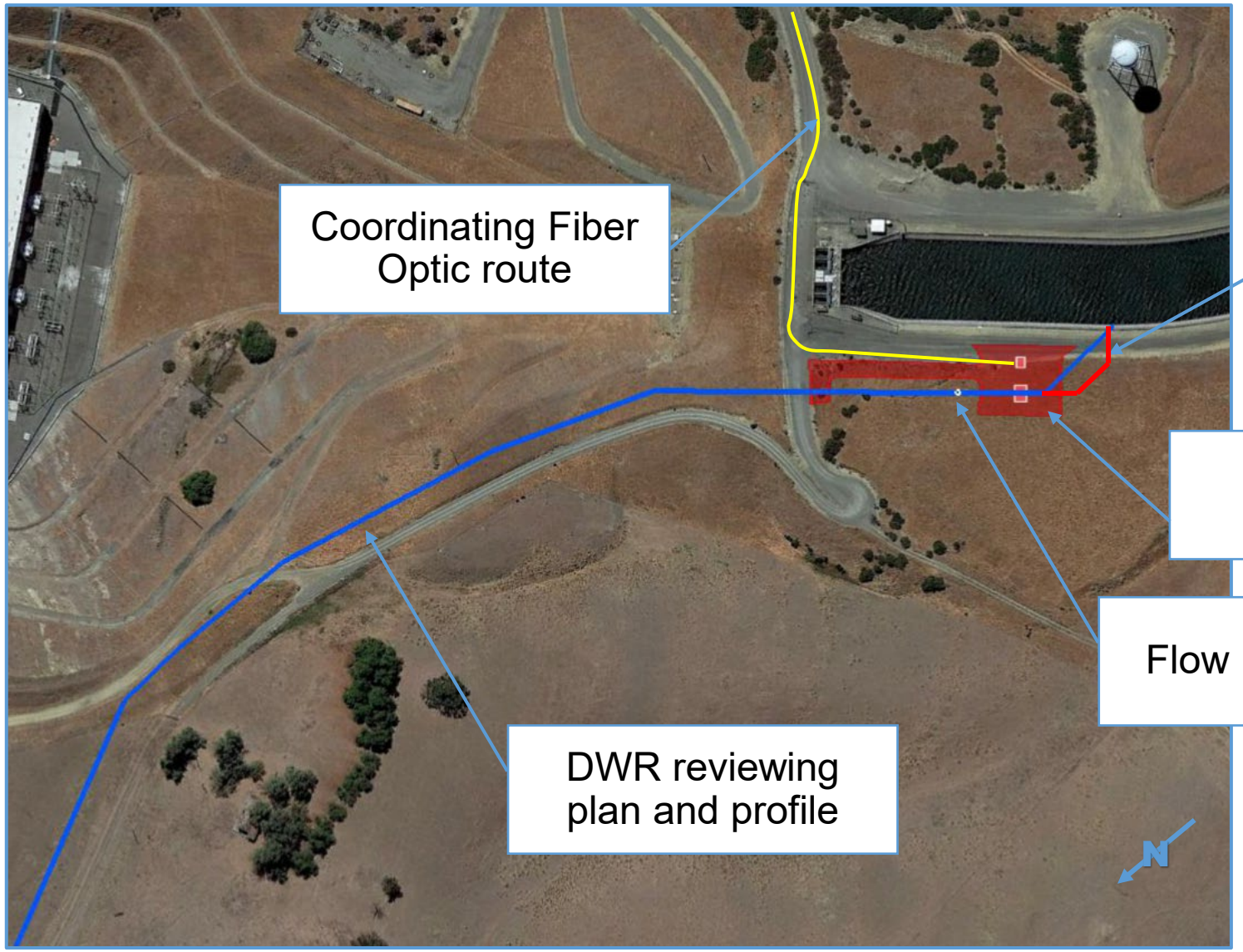



California Aqueduct Turn-In

- A Turn-In Agreement with the Department of Water Resources is needed prior to the CWC Final Award Hearing
- DWR will own and maintain facilities on DWR property
- Updating design based on DWR's comments on the 90-percent design

Turn-In Design Updates

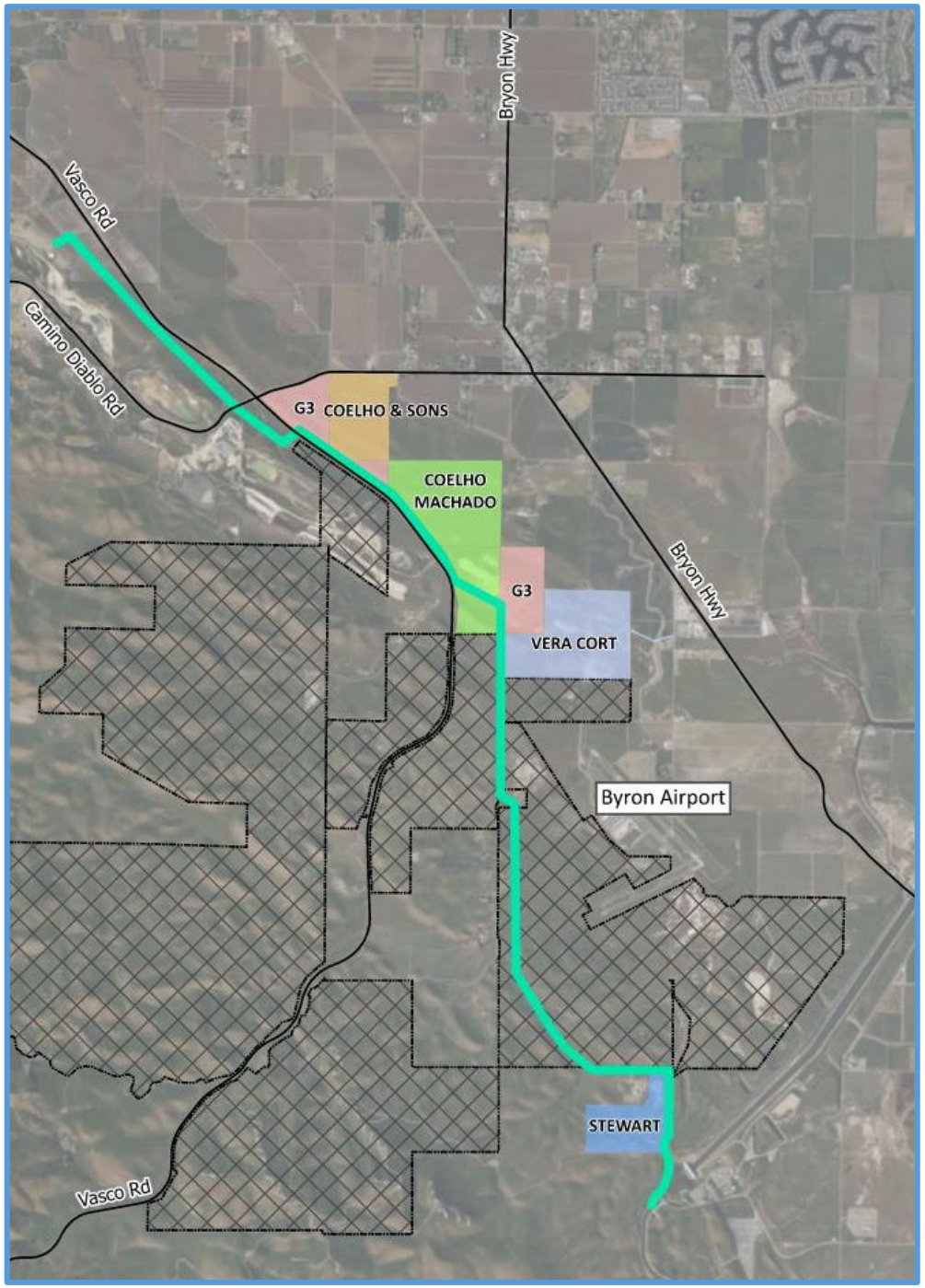
LOS VAQUEROS RESERVOIR EXPANSION PROJECT



FY 24 Pipeline Design Activities

- 30% design drawings of pipeline alignment (in progress)
- CEQA update to address alignment changes (in progress)
- Conduct site investigations on select parcels in Fall 2023 and remaining parcels in 2024
- Progress utility coordination and design of the Vasco Road trenchless crossing
- Prepare Preliminary Design Report

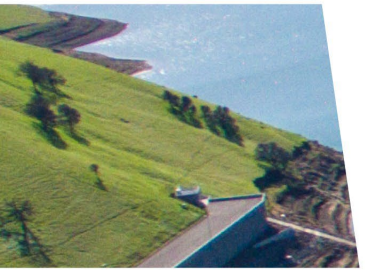
Site Investigation



- Geotechnical and environmental site investigations
- Limit initial investigations to EIS/EIR alignment
- 13 borings, 19 CPTs, and 5 test pits
- Remaining investigations will be completed following CEQA update

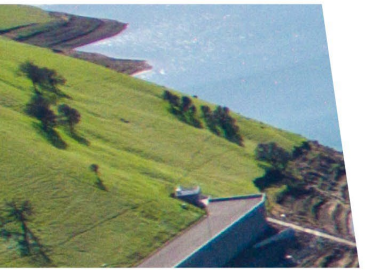
Right-of-Way (ROW) Acquisition





- Requesting access from property owners for initial phase of site investigations in Fall 2023
- Permanent ROW acquisition will be initiated after CWC full funding award
- Acquiring ROW within lands under conservation easements requires approvals from resource agencies, EBRPD and ECCCHC

Schedule



CEQA Update	Summer 2023
Initial Site investigations	Fall 2023
Additional Site Investigations	Summer 2024
Begin Land Acquisition	Late 2024
Final Design and Bidding	Late 2025
Construction Complete	2028