



September 11, 2023 Meeting Minutes

Members in Attendance:

Carlos Diaz, Sonoma Water
Keenan Foster, Sonoma Water
Hank Ackerman, Alameda County
Mark Boucher, Contra Costa
Claudia Gemberling, Contra Costa
Tim Jensen, Contra Costa
Doug Titus, Valley Water
Jon Jankovitz, Valley Wter
Colin Martorana, One Shoreline
Natalie Muradian, Vallejo
Elke Rank, Zone 7
James Carney, Zone 7
Judd Goodman, Marin
Tess Byler, San Francisquito
Holly Costa, USACE
Chelsea Thompson, City of Petaluma
Jennifer Krebs, BAFPAA Staff

1. Administrative Updates - Carlos
 - a) Alameda County request for Letters of Support for grant applications. BAFPAA has not historically endorsed grants.
 - b) Water Board Meeting rescheduled - Jennifer waiting to hear back from the Water Board about other dates.
 - c) MOU revisions - still waiting for Alameda County and Marin County. Marin & Alameda Boards to consider the item in September/October 3 Alameda
2. Presentation - Carlos on Sonoma Water Metanzas Dam Rehab Program
Presentation attached, there will be sediment for projects in need of sediment
NRCS provides design criteria
Fill criteria will be defined during design process
Consideration of mid-century increases in rainfall (climate change impacts)
State Department of Dams will work on criteria and possibly funding, State agencies part of scoping project
3. Committee Updates

Claudia - Environmental Permitting Committee to meet 9/19, trash reduction requirements & DFW Trash removal requirements for creeks / concern with overlap of regulations.

SFEP IC - Tess attended last meeting - ask for update in October.

Restoration Authority - Meeting this Friday Paul Detjens in October?

AQPI - new link from Mark

<https://www.contracosta.ca.gov/9915/AQPI-and-Rocky-Ridge-Radar>

Next Meeting Presentations

- New ideas sought

Treasurer's Report

- Two Issues:
 - Can't extend JK contract
 - need new treasurer (Mark on overload)
https://docs.google.com/spreadsheets/d/1KW4orawxu0T5qLCP_h9QUfbM1q8617dM-irSLemFLqM/edit?usp=sharing

Next meeting - 10/16 at 1:30



Sonoma Water

Clean. Reliable. Essential. Every Day.

Matanzas Dam Rehabilitation Project

BAY AREA FLOOD PROTECTION
AGENCY ASSOCIATION

SEPTEMBER 11, 2023

    sonomawater.org



Prince Memorial Greenway October 24, 2021

Summary

- Background
- Matanzas Creek Dam
- Design criteria
- Alternatives generation
- Local Agency preference & next steps

Background



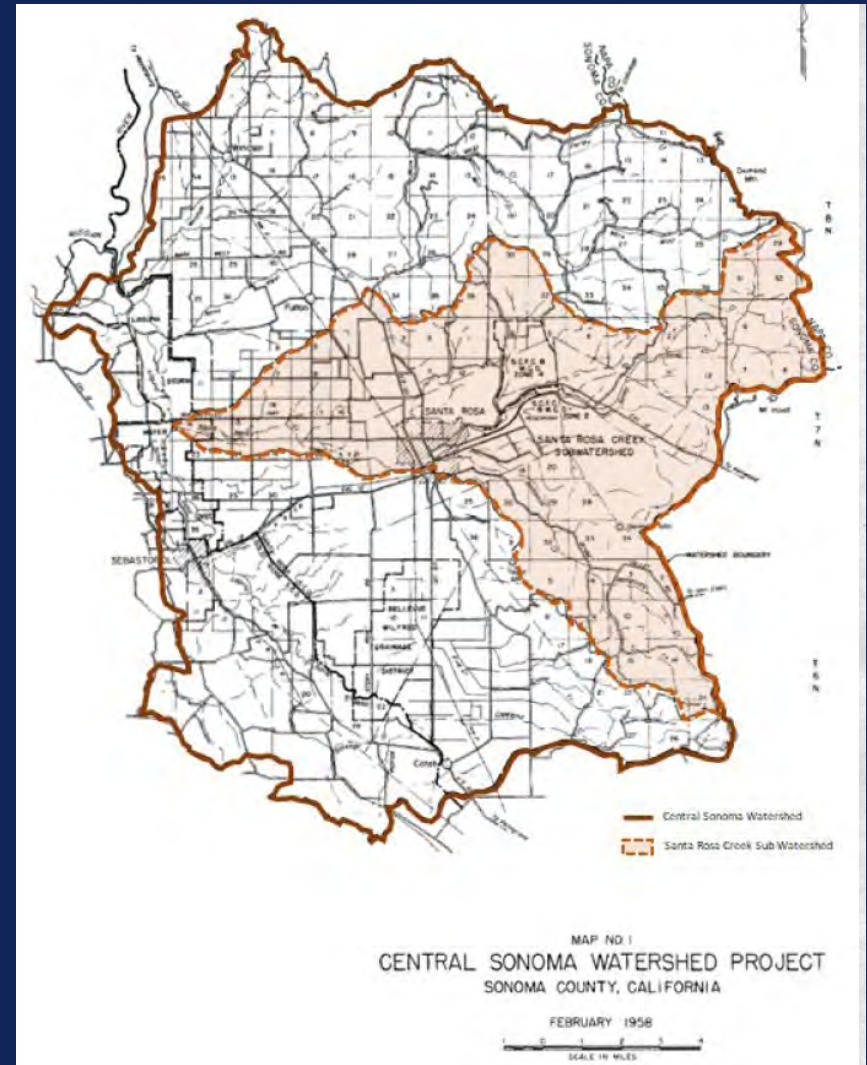
SANTA ROSA in 1957

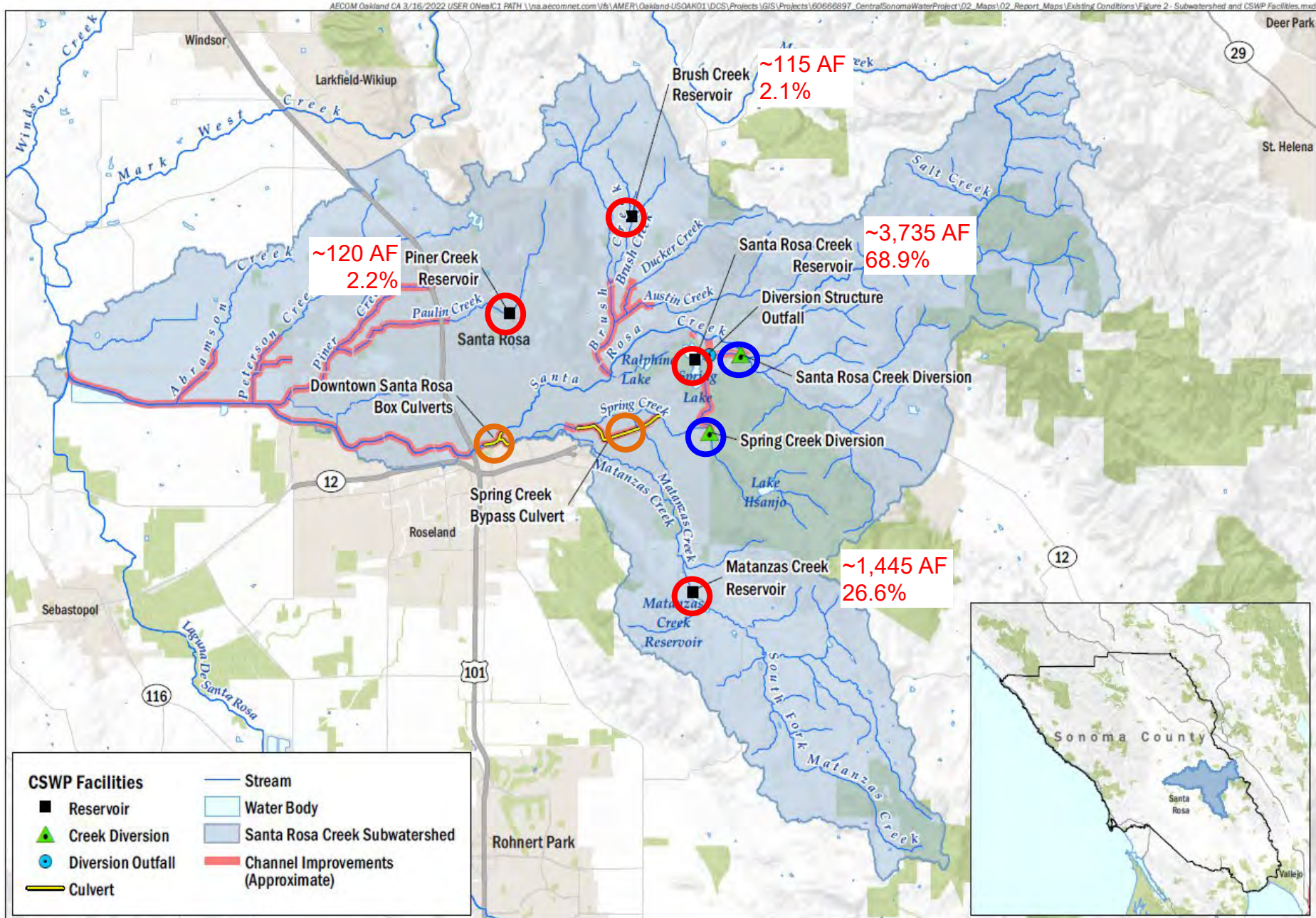
SAN FRANCISCO EXAMINER PHOTO

Aerial Oblique Image of Santa Rosa in 1957

Background: Central Sonoma Watershed Work Plan

- Congress approved the Central Sonoma Watershed Work Plan
- Work Plan elements completed between 1962 and 1964¹
- Sonoma Water, as Local Sponsor, continues to operate and maintain the system





Matanzas Creek Dam

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
CALIFORNIA STATE OFFICE



- 2016 NRCS assessment
- Determined Matanzas does not meet current NRCS design criteria for earthen spillways (Principal Spillway Hydrograph)
- Given this deficiency, NRCS secured funding to conduct the Matanzas Creek Dam Rehabilitation Project presented today
- Project is a collaborative effort between NRCS and Sonoma Water as the Local Sponsor

Considerations

- **Infrastructure.** Average age of CSWP facilities is ~57 years. Original design life estimated at ~50 years
- **Land Use.** Development and altered watershed response
- **Seismic Risk.** Increased understanding of seismic vulnerability (Rodgers Creek Fault)
- **Climate Change.** Greater variation in extreme rainfall, drought and wildfire

Matanzas Creek Dam

- ✓ Public scoping (NEPA)
- ✓ Condition assessments
- ✓ Hydrologic and hydraulic modeling updates
- ✓ Geophysical investigations
- ✓ Geology, biology, and cultural resource studies
- ✓ Seismic deformation and stability analysis (structures and berms)
- ✓ **Hydraulic performance of dams**
- ✓ **Alternatives analysis**
- ✓ Economic analysis
- ✓ Plan-EA (NEPA)



Downstream Stability Berm (Facing North)

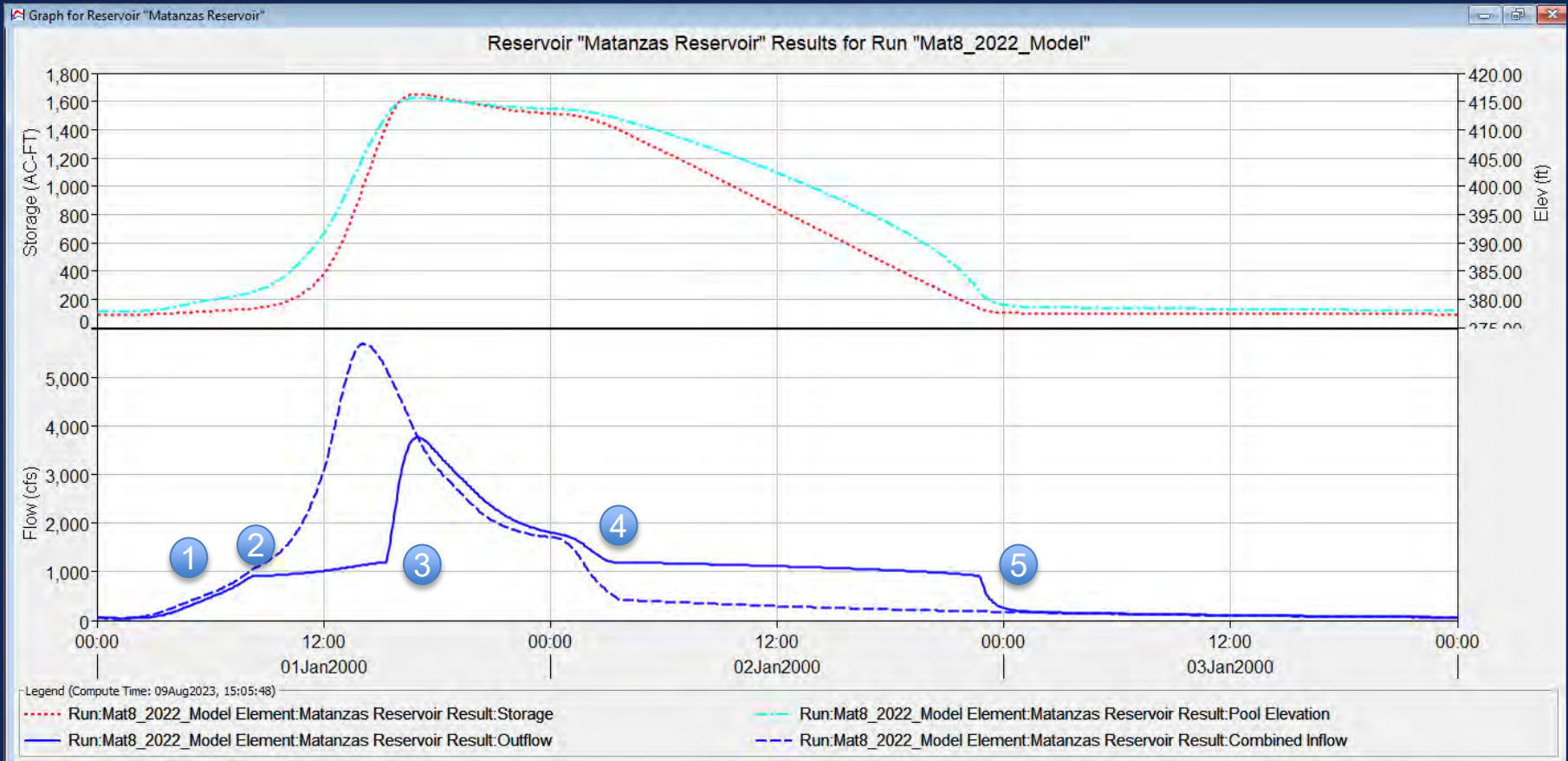
Matanzas Creek Dam

- Low Flow Outlet – Permanently open 18” diameter pipe
- Principal spillway – Fixed elevation rectangular weir
- Emergency spillway – Concrete crest, earthen channel

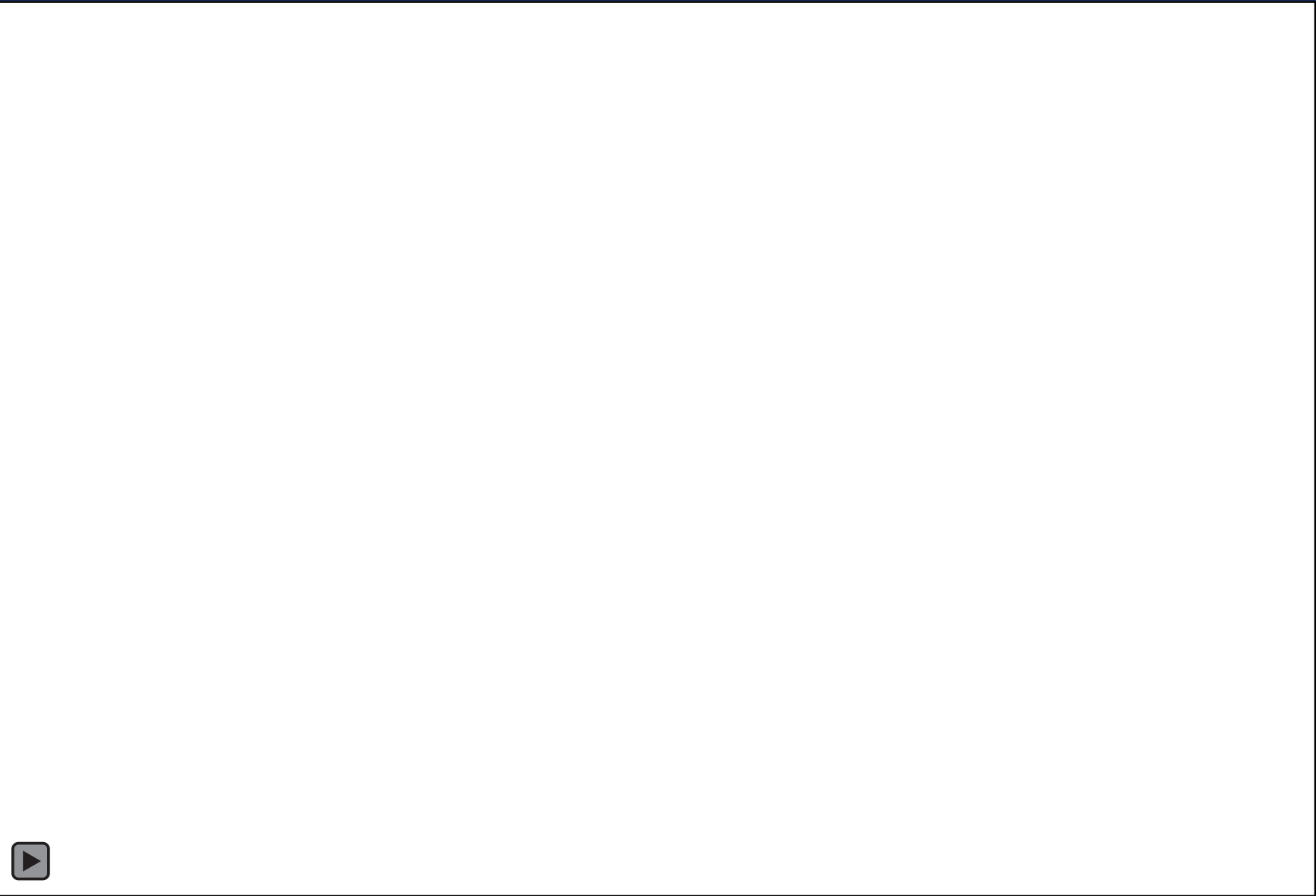


Auxiliary Spillway Structure

Matanzas Creek Dam



Matanzas Creek Dam Function



Sonoma
Water

Simulation of Matanzas Creek Dam December 2005

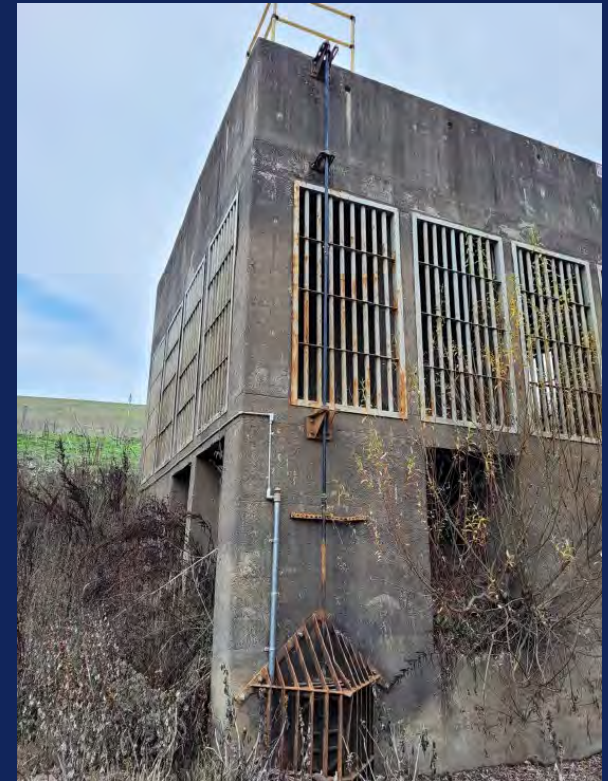
Design Criteria

Table 2-1 Summary of NRCS and DSOD Criteria

Agency Criteria
NRCS
1. PSH routed without operating earthen auxiliary spillway
2. Meets 10-day PSH drawdown requirements? (85% in 10 days or less)
3. 6-hour ASH routed through principal and auxiliary spillways without encroaching on required residual freeboard
4. 6-hour FBH contained without overtopping
5. 24-hour FBH contained without overtopping
6. Sufficient sediment storage capacity for 50/100-year design life
DSOD
1. Minimum total freeboard of 4.0 feet
2. 6-hour PMF contained without encroaching on residual freeboard
3. 72-hour General PMF contained without encroaching on residual freeboard
4. Outlet works capable of draining half of the reservoir capacity in 7 or 10 days (for storage <5,000 ac-ft)
5. Outlet works capable of draining entire reservoir in 20 or 30 days (for storage <5,000 ac-ft)
6. Outlet works capable of draining 10 percent of maximum storage depth within 7 to 10 days (for storage >5,000 ac-ft)
7. Outlet works capable of draining entire reservoir capacity in 90 to 120 days (for storage >5,000 ac-ft)

Principal Spillway Hydrograph Deficiencies

- Design exceptions
 - Project utilized a 24-hr 100-yr rainfall depth of 6.4" for PSH instead of historic standard of a 72-hr 100-yr rainfall event.
- Design criteria updates
 - Contemporary criteria uses nested 10-day 100-yr rainfall depth for PSH
- Improved rainfall estimates
 - NOAA Atlas 14 estimate for 24-hr 100-yr event is 10.5" (vs 6.4" used) – 60% Increase!



Principal Spillway Structure

Structural Alternative 1

Alternative 1 - \$47 million No Dam Raise

SCALE: 1" = 30'

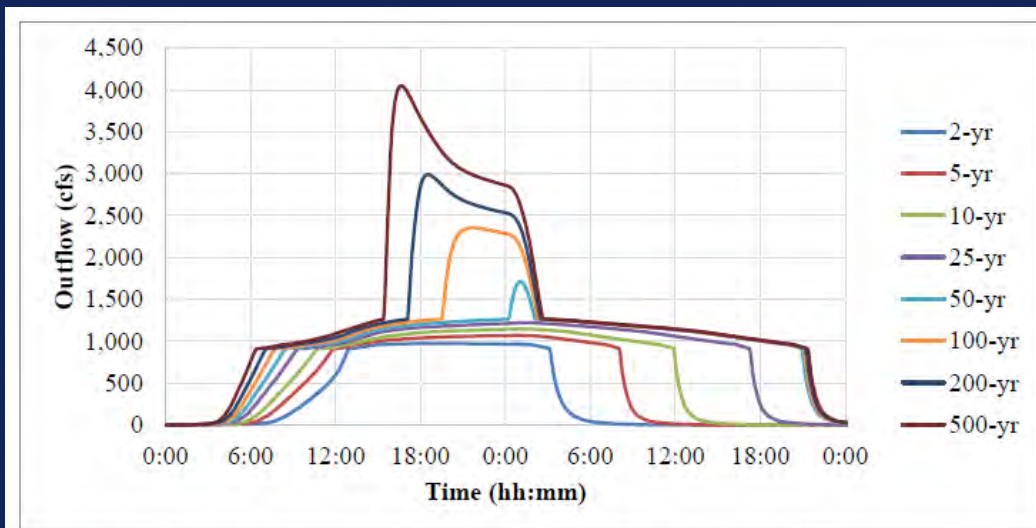
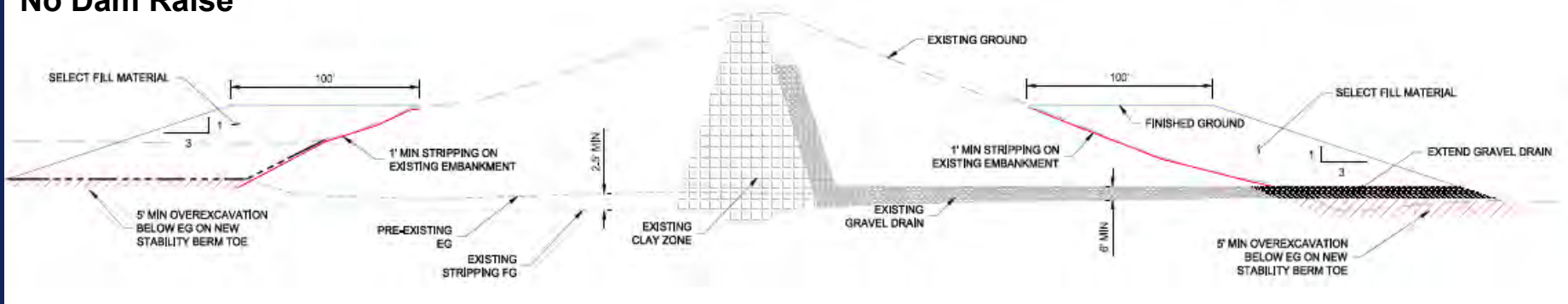


Figure A-4. Outflow Hydrographs – Matanzas Creek Dam Alternative 1

Structural Alternative 2

Alternative 2 - \$33 million 3.5 ft Dam Raise

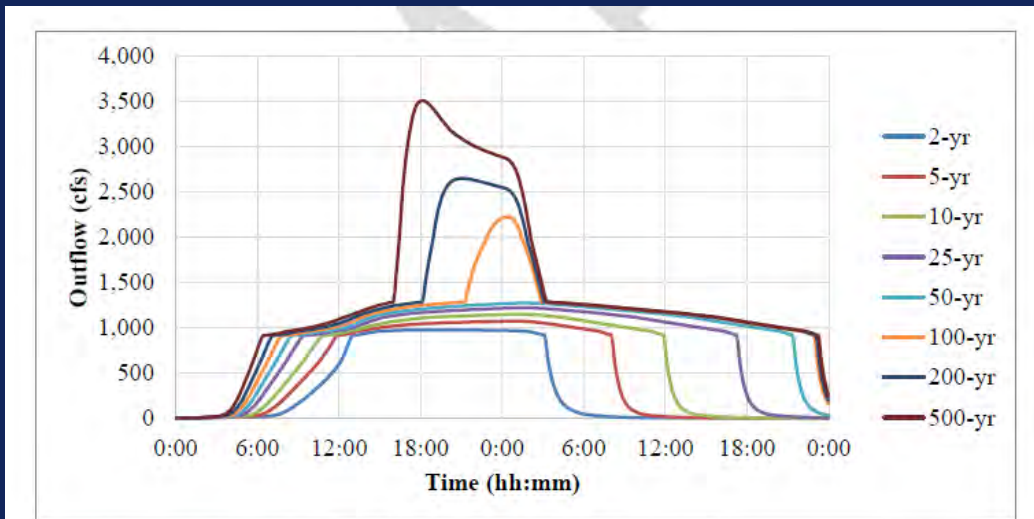
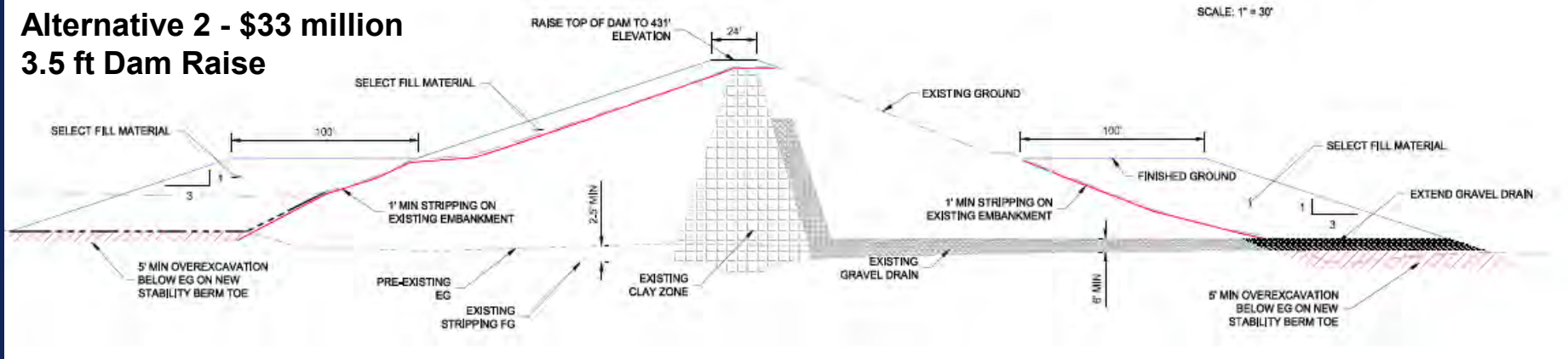


Figure 5. Outflow Hydrographs – Matanzas Creek Dam Alternative 2

Structural Alternative 3

Alternative 3 - \$35 million 7.4 ft Dam Raise

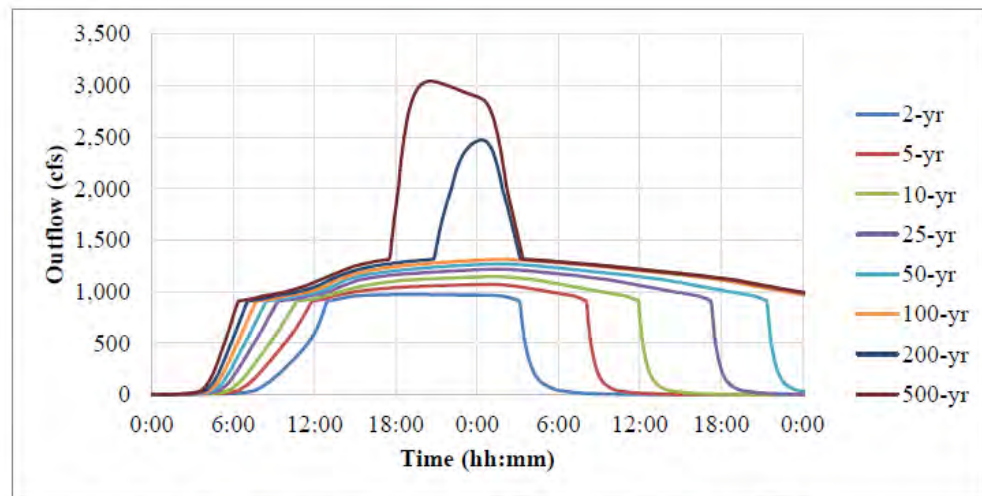
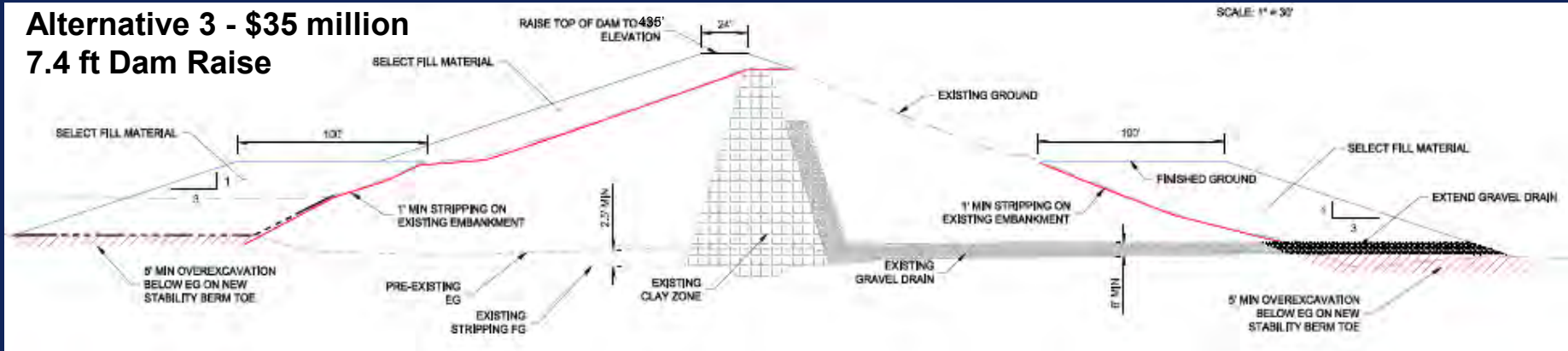


Figure A-6. Outflow Hydrographs – Matanzas Creek Dam Alternative 3

Local Agency Preference

	Sediment Removal	Seismic Stability Berms	Lined Spillway	Dam/Aux Crest Raise (ft)	Flood Storage	Design and Construction Cost ¹
Alternative 1	✓	✓	✓	0/6.0	~25-Year	\$47 M
Alternative 2	✓	✓	-	3.4/7.4	~50-year	\$33 M
Alternative 3 (Locally Preferred)	✓	✓	-	7.4/11.4	~100-year	\$35 M

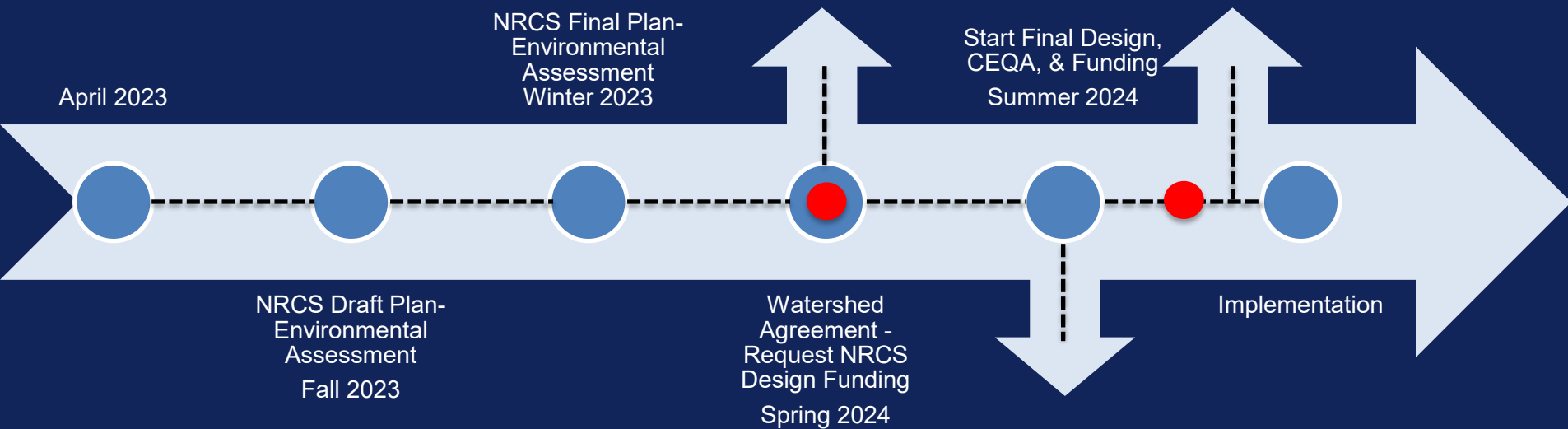
Benefits of the locally preferred alternative

- Consistent with flood protection provided by original Central Sonoma Watershed Project
- Consistent with Board-approved Flood Management Design Manual
- Consistent with National Flood Insurance Policy focus on 100-year flood as the accepted standard for flood risk.
- Provides the most flexibility for design changes
- Of alternatives evaluated, accommodates the greatest level of expected future climate rainfall conditions



Dam Embankment - Facing South

Roadmap to implementation



 Board Action

Questions?



**Sonoma
Water**

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