



WSMP – Ross Valley/PMT

Operations Committee

May 21, 2021



Agenda

- Background
- Storage Quantification for Ross + PMT
- CEQA Integration
- Preview of Storage Sites
- Public Engagement
- Next Steps



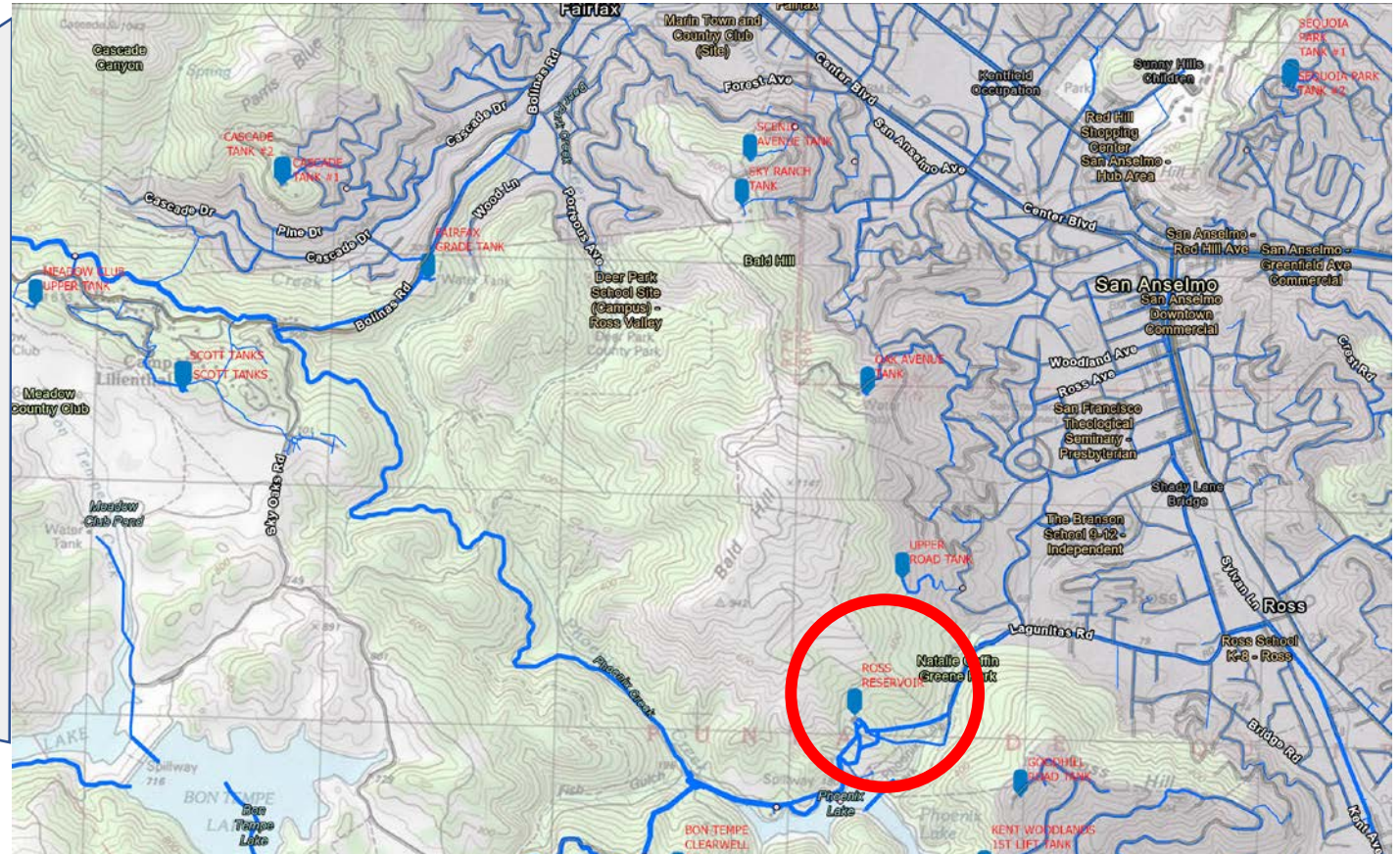
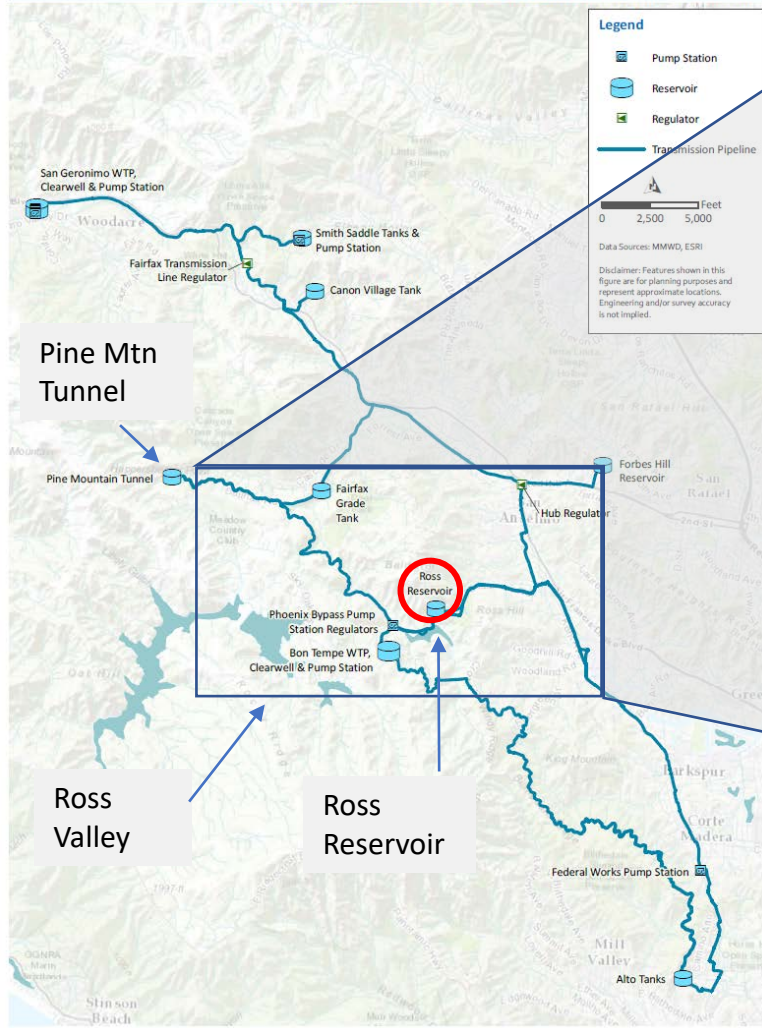
WSMP Overview

- A system-wide look at service level criteria, overall investment needs over the long-term
- A focused look at the persistent issues in Ross Valley related to PMT and the siting and sizing of storage
- Project kicked off in September 2020 and will run through August 2022 with the finalization of Water System Master Plan

Work Completed Since February 12 Meeting

- Finalized documentation of storage, pumping criteria
- Advanced geotechnical studies with site visit
- Updated Ross Valley hydraulic model with latest consumption data to account for more recent demand patterns
- Initiated Ross Valley & PMT storage analysis

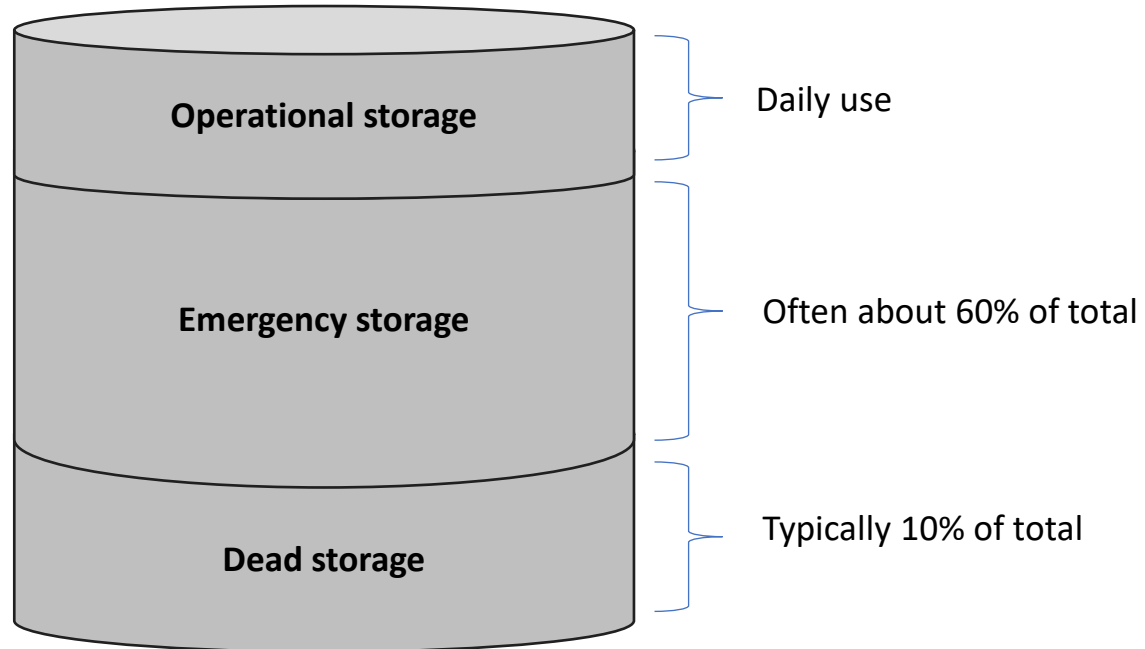
Area of Study



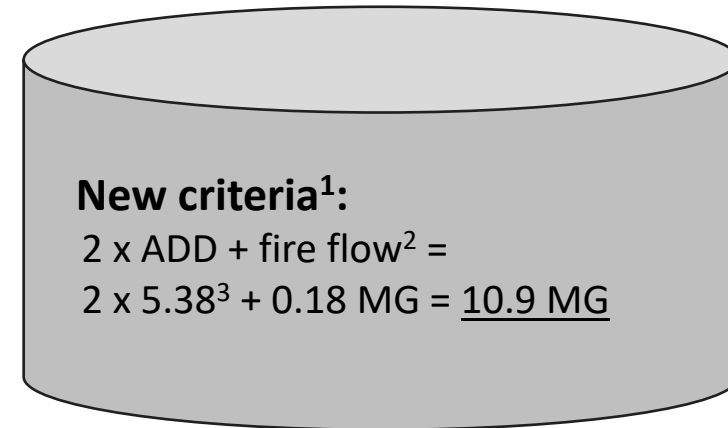
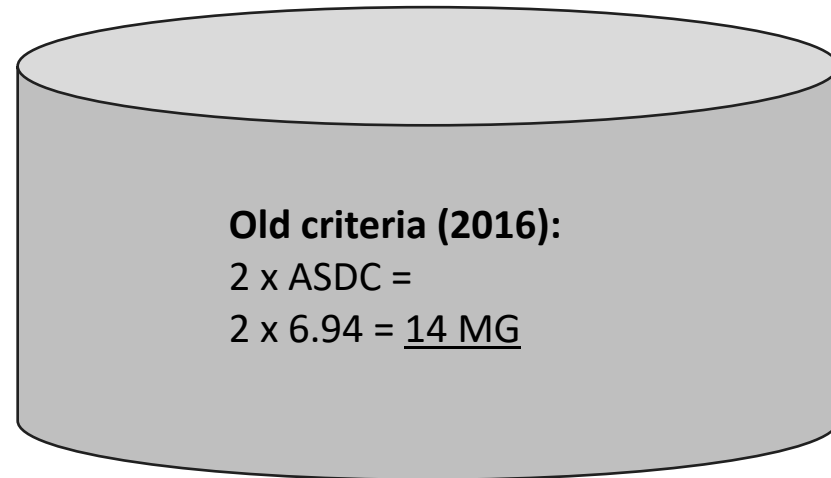
Storage Quantification

Components of Total Storage

Adequacy Rating (AR) is a rule of thumb to estimate total storage, which is comprised of these three elements:



How Much Total Ross Valley Storage is Needed?



Storage requirements based on “Adequacy Rating” were reduced to 10.9 MG when updated criteria and consumption data were applied that capture reduction of demand through conservation.

1. New criteria described in TM, which also showed that $ADD = ASDC/1.3$
2. MMWD Fire Flow Master Plan 1994
3. Demand quantified using recent consumption data

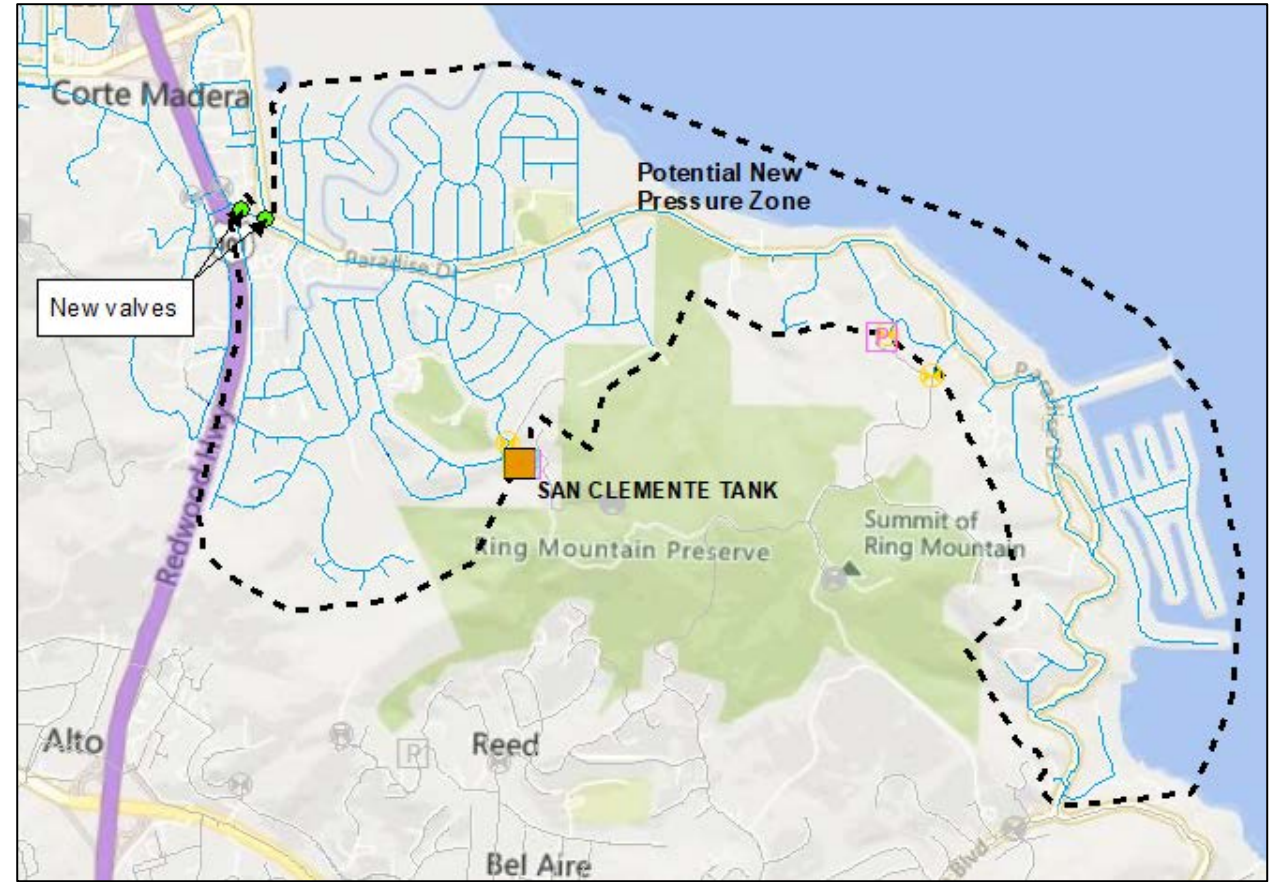
Analysis of Ways to Meet Required Storage

- Analyzed all existing storage in the PMT/Ross Valley zone
- Found that only PMT and Ross contributed significantly
 - Escalle, Greenbrae, San Clemente all sit too low in the zone to help
 - That leaves Ross Reservoir and Pine Mountain Tunnel
- Examined options for non-structural alternatives to improve participation of other storage
- Identified system changes to get more value from San Clemente

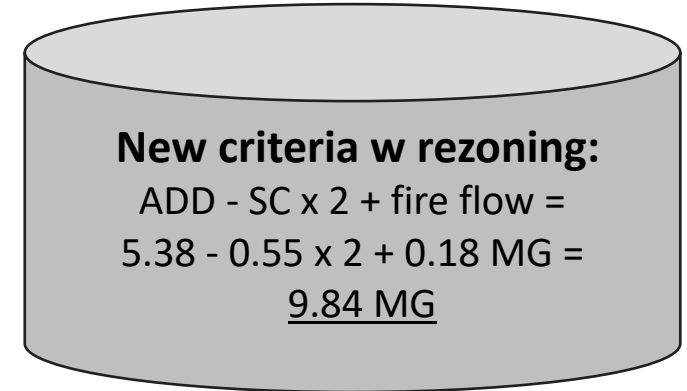
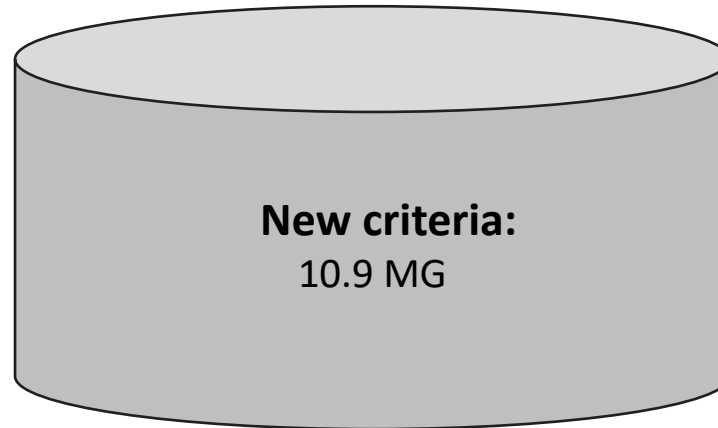
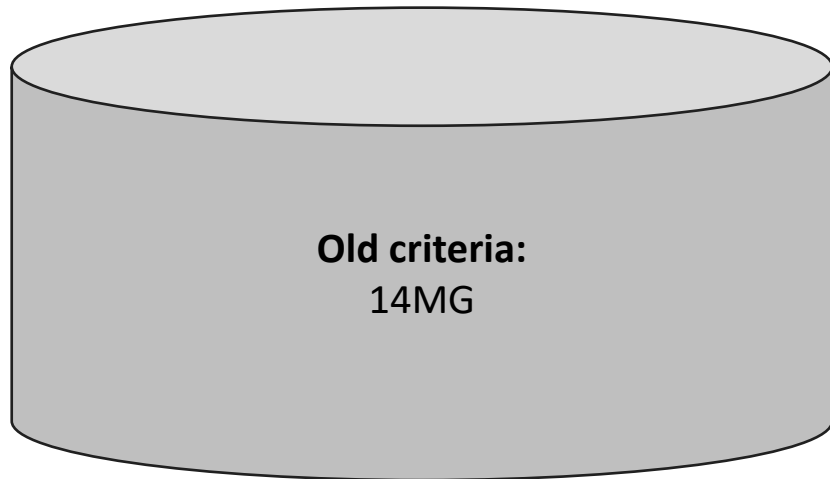
Rezoning San Clemente Tank Has Storage Benefits

Ave Daily Demand (ADD)	5.38 MGD
less ADD Reduction through new San Clemente zone	<u>0.55 MGD</u>
Reduced ADD	4.83 MGD
2xADD	9.66 MG
Fire flow	0.18 MG
Total storage needed for PMT & Ross zones	9.84 MG

Rezoning San Clemente reduces Ross Valley storage need by 1.1 MGD from 10.9 MG to 9.84 MG.



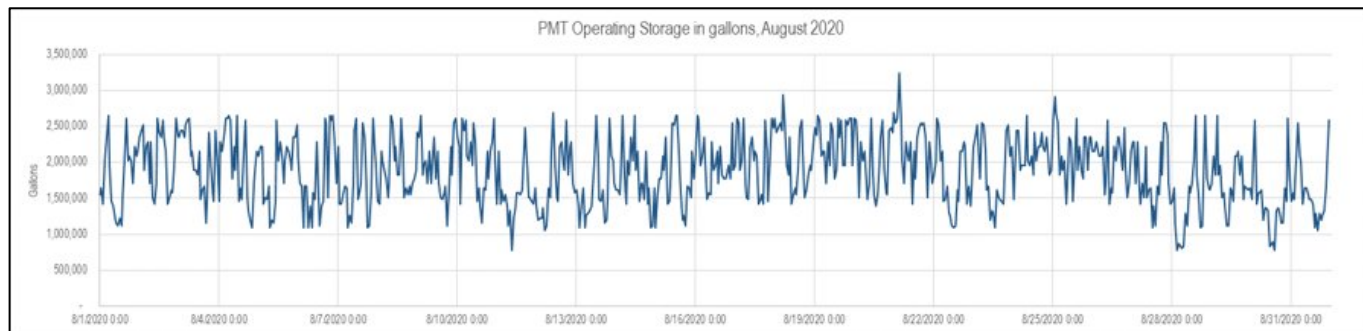
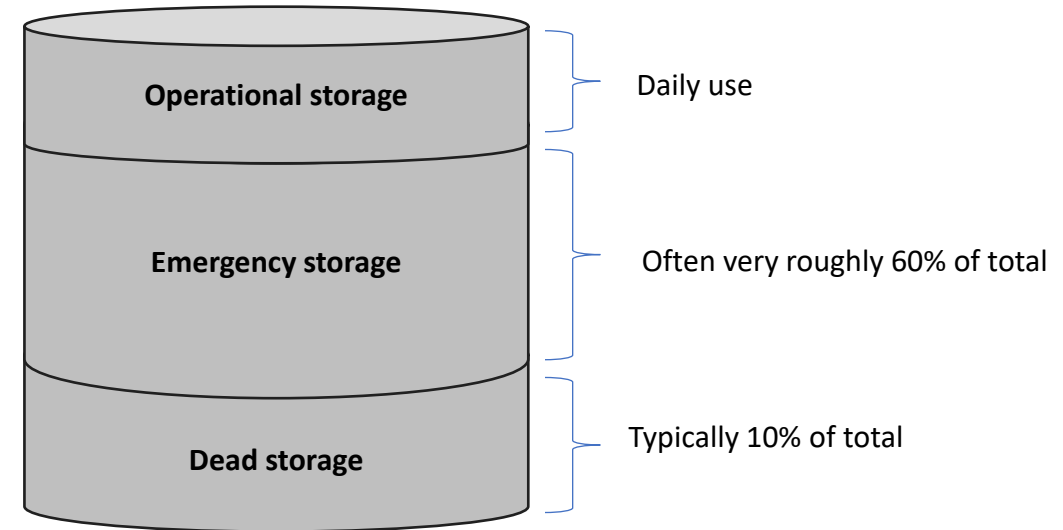
How Much Total Ross Valley Storage is Needed with the San Clemente Rezoning?



Storage requirements for Ross+PMT were reduced by a total of 4.16 MG via new criteria and rezoning of San Clemente. Right sizing storage saves money, reduces environmental impacts, and improves water quality.

How Does Status Quo Stack Up vs Required?

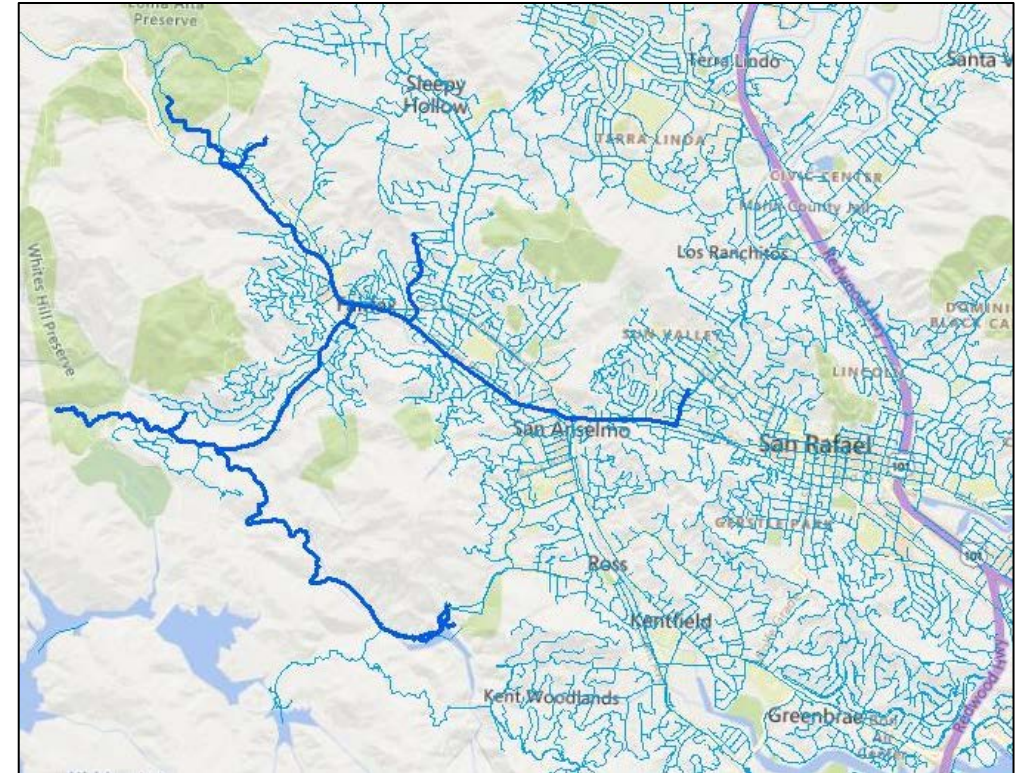
- Existing storage is 4.0 MG
 - Ross Reservoir 1.0
 - Pine Mountain Tunnel 3.0
- Required is 9.8 MG
- Review of operating data shows that existing storage is cycling heavily even under non-emergency conditions



Under existing conditions, emergency storage is very limited; remedying that issue drives the sizing of storage.

Scenario Modeling: Further Testing the Storage Number with Detailed Modeling

- Scenario modeling, including a 24-hr outage scenario, confirmed that the 9.84 MG storage number is reasonable
- At least 1.0 MG of this storage must be in the PMT zone



Summary of Storage Analysis

- Needed storage is 9.84 MG minimum
- At least 1.0 of this needs to be at higher elevation (PMT)
- Current storage of 4.0 is inadequate
 - Actual data show deep cycling just to meet routine conditions
 - Very limited emergency storage exists
- As options are developed to decommission and replace existing facilities, storage should be increased to at least the minimum levels

Integrating Engineering Studies with CEQA

CEQA Framework

- CEQA is required for approval of a specific project
 - A decision “which commits the agency to a definite course of action in regard to a project” (CEQA Guidelines Section 15352)
- Planning documents that recommend a general course of action and evaluate an assortment of projects do not trigger CEQA

Site Evaluation Criteria



Operational Versatility

- Ability to operate and maintain the tank
- Value to feed multiple zones
- Value for abating wildfires in the watershed itself



Constructability

- Geotechnical
- Access (haul routes, staging)
- Permits
- Land ownership



Environmental Impacts

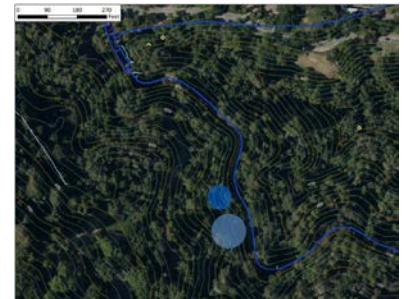
- Short term (during construction)
- Long term (over life of facility)

Current Status of Siting Studies

- Two “new” sites along Concrete Pipe Road, CP 5 and CP 18, appear to be competitive, and worth further inquiry
 - Technically suitable
 - Fewer and lesser impacts in many key areas
- However, more geotechnical studies are needed to verify absence of fatal flaws and bring overall level of knowledge up to par with other sites
- Those studies are being scoped for execution this summer to complement desktop analyses



CP18



CP5

Sites Being Evaluated



Ross Reservoir site,
with some variations



Five Corners



Near Bon Tempe TP



Shaver Grade



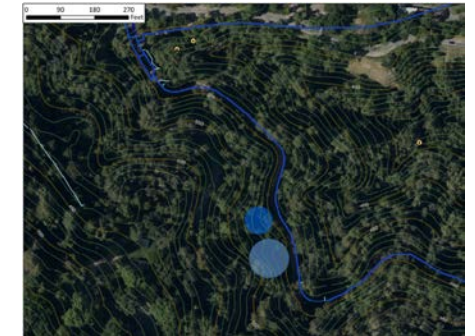
Upper Canon Village



White's Hill



Concrete Pipe Road
Station 18



Concrete Pipe Road
Station 5

Public Engagement

Public Engagement Considerations

- Begin outreach work prior to formal CEQA
 - Work with District staff to develop effective strategy
 - Develop pre-recorded video/ppt to build awareness of project need
 - Partner with local organizations
- Leverage CEQA process
 - Scoping meeting
 - Public comments

Next Steps

Summary of Next Steps

- Perform field geotechnical studies for “new” sites on Concrete Pipe Road
- Integrate results of those investigations into site evaluation
- Identify viable options to carry forward into CEQA process
- Begin public outreach
- Initiate preliminary design to support CEQA effort

Thank you