

DOMESTIC WATER STORAGE AND OTHER RELATED MATTERS

March 2021 Update

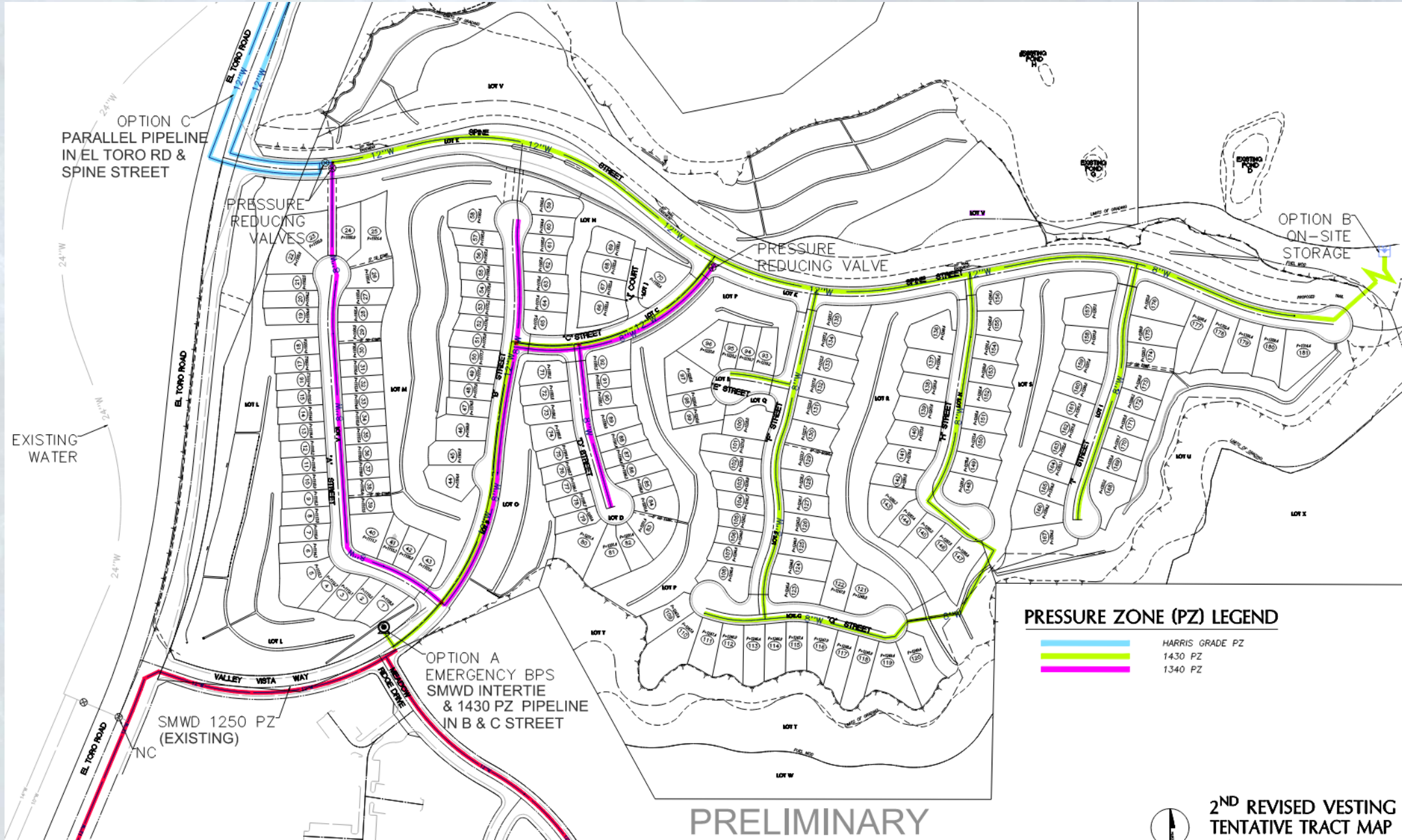
AGENDA

- ▶ Saddleback Meadows Sub Area Master Plan (SAMP)
- ▶ Domestic Storage Study Update
- ▶ TCWD Emergency Storage Options

SADDLEBACK MEADOWS SUB-AREA MASTER PLAN

- ▶ 181 Residential Dwelling Units with a total storage requirement of 823,000 Gal (Operational, Emergency and Fire Flow)
- ▶ Reservoir Elevation at 1420; this would be an isolated zone
- ▶ At the end of TCWD's service area; Options for reliability:
 - Parallel Pipelines to provide a separate loop
 - On-Site Storage for the development
 - Emergency Inter-tie with adjacent agency to include a pump station due to lower HGL

SAMP-WATER SYSTEM LAYOUT



PRESSURE ZONE (PZ) LEGEND

- HARRIS GRADE PZ
- 1430 PZ
- 1340 PZ



DOMESTIC STORAGE STUDY UPDATE

▶ GOAL OF STUDY:

- Update 2016 Study with current demands/storage volume and forecast future demands to determine emergency storage situation and compare to the WRES requirements (2 MG Reservoir and Distribution Requirements)

March 2020	2.0 cfs
December 2019	1.8 cfs
March 2019	1.4 cfs
February 2019	1.3 cfs
January 2019	2.0 cfs

▶ CURRENT STORAGE SITUATION:

- Over the past 7 years, demand has decreased with the average water demand of 2.14 MGD. Effective Storage is 10.73 MG, which yields 5 days of storage
- Demand reduction to 2.0 cfs (1.29 MGD), which has been accomplished over 5 full one-month periods in winter during past 7 years yields over 8 days
- Metropolitan – “25 to 35% reduction is reasonable”
 - Need to reduce 2.14 MG by 28.2% to equal 7 days of demand - within Metropolitan’s “reasonable” range

2021 STORAGE SITUATION

Reservoir ¹	Diameter (feet)	Height (Top Shell) (feet)	Operating Height ² (feet)	Effective Volume (MG)	Year Built	Hydraulic Grade Line Max. ³
Cooks	21.5	24	20	0.05	1963	1,165
Harris Grade No. 1	104	32	30	1.91	1980	1,504
Harris Grade No. 2	55	24	20	0.36	1965	1,496
Rose Canyon	53	24	20	0.36	1979	1,357
Trabuco No. 1	99	24	23.5	1.35	1984	1,686
Trabuco No. 2	141	24	23.5	2.74	1986	1,686
Dove	116	32	30	2.37	1988	1,418
Saddle Crest	95	32	30	1.59	2020	1,508
Total Effective Storage (2021)				10.73		

1) Storage reservoirs are all steel, welded or bolted, and above grade

2) Maximum height at which reservoir is operated, allowing for freeboard

3) Hydraulic Grade Line Elevation in feet above mean sea level

RESERVOIR LOCATIONS, SUPPLY/DEMAND DISTRIBUTION

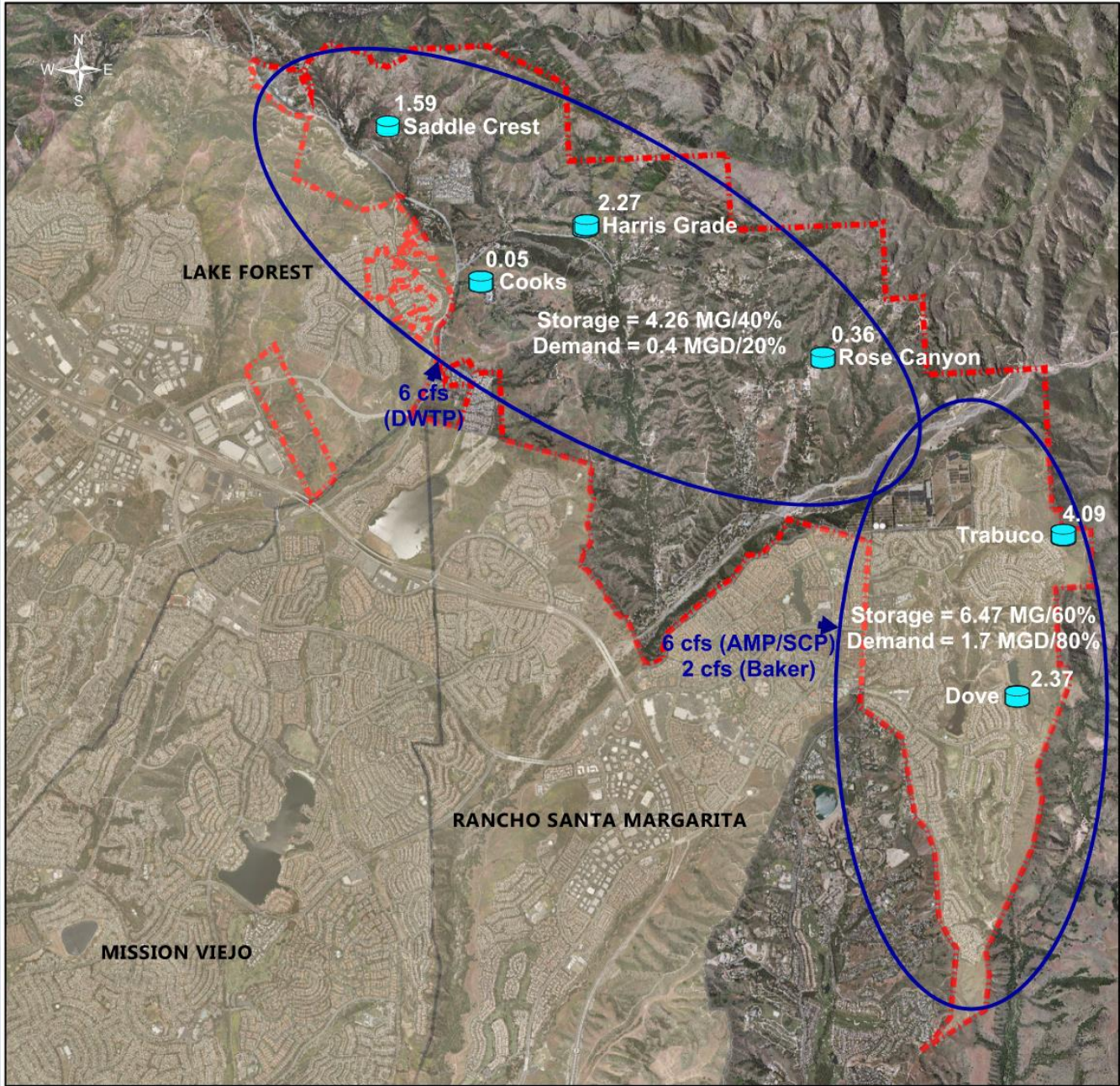


Figure 1

Existing Reservoir Locations & Storage, Demand and Supply Distribution

- Eff. Vol. (MG) Reservoirs
- Service Area Boundary

East vs. West Breakdown
 Storage = Vol./% of Total
 Demand = ADD/% of Total

Supply Sources
 Peak Capacity (Source)

Abbreviations/Notes
 DWTP: Dimension Water Treatment Plant
 AMP: Allen McCulloch Pipeline
 SCP: South County Pipeline
 Baker: Baker Water Treatment Plant

Note: Well supply not shown due to intermittent status

RESERVOIR SITING FEASIBILITY STUDIES SUMMARY

- ▶ Explored the feasibility of constructing a new tank at the Harris Grade and Porter Property sites.
- ▶ Harris Grade Study went more in depth with field Geological and Surveys completed; Four alternative tank options were presented
- ▶ Porter Property Study was a planning level construction cost estimate with one tank option and several access and pipeline alignments, dependent on future development

TANK SELECTION SUMMARY

	HARRIS GRADE-DISTRICT ONLY	HARRIS GRADE-DISTRICT AND DEVELOPER	HARRIS GRADE-DEVELOPER ONLY	PORTER RANCH	TRABUCO	DOVE
HGL (ft)	1504	1504	1504	1504	1686	1418
District Location	West	West	West	East	East	East
Current Capacity (MG)	2.27	2.27	2.27	None	4.09	2.37
Additional Capacity (MG)	1.7	2.7	1.25	2.25	3.6	2.25
Cost Estimate (\$M)	4.5	7.9	Unknown	11.6	Unknown	Unknown
Additional Infrastructure	None	None	None	Access Road, Drainage & Inlet/Outlet Pipeline, Electrical	Grading, pump & pipeline upgrades	Grading, PRV, pump & pipeline upgrades
Environmental	NEPA	NEPA	NEPA	EIR or MND	EIR or MND	EIR or MND
Permitting/Easements	Requires Forest Service Lease Extension, Grading Esmt.	Requires Forest Service Lease Extension, Grading Esmt.	Requires Forest Service Lease Extension, Grading Esmt.	District owns property	Right-of Way: County	Right-of Way: Dove HOA
Pros	Replaces small 1965 tank with unmatched HGLs	Replaces small 1965 tank with unmatched HGLs; Less expensive option for emergency storage	Eliminates isolated zone for SBM	Increases East side storage	Increases East side storage	Increases East side storage
Cons	Increases West side storage imbalance	Increases West side storage imbalance	Eliminates less expensive option for emergency storage	More expensive option for emergency storage	Would have to eliminate smaller tank to make room. Most energy intensive	Dove HOA currently utilizes part of site