Townhall Meeting

July 6, 2023

Brief History

1876 Serrano Ditch Company formed by farmers to divert water from Santiago Creek to supply water to what is now known as Villa Park and Mabury Ranch

- 1910-20’s farmers surveyed the Santiago Creek Watershed for placement of a dam to secure native water supplies to carryover into dry years for farming.

Santiago Reservoir
Water Rights and Native Water Supply

- 1927 - The Serrano Irrigation District (SWD), The Irvine Company (TIC) and Carpenter Irrigation District (CID) built the dam together in the 1931.

- Today the parties share ownership of the Santiago Reservoir, lands surrounding it. Water right permits, some of the oldest in OC, **allows SWD to meet all its needs locally in many years**.

- Ability to store and sell water to other agencies.

- SWD is entitled to 25% of yields and **liabilities**, while IRWD is entitled to 75% of the yields and liabilities.

No other water agency in OC has a Lake that has the flexibility to supply 100% local native water after a “Wet Year” to its customers.

Only your Serrano Water District!

Santiago Reservoir is a **unique resource in OC**—local supply that does not rely on NorCal or Colorado River, and which allows SWD (and its ratepayers) to control their own destiny, no matter what may happen on the Colorado River and north of the Delta.

Santiago Reservoir

- SWD owns 25% of Santiago Reservoir (Irvine Lake)
- Reliable, uninterrupted water supply
- Local Native Water Supply
- Low-Cost Native Water offsets high-cost purchased water costs
- Local control
- Much less dependency on import water than other agencies

Colorado River Supply Cuts

- April 2023 - The Biden administration proposed alternatives for cutting Colorado River water allocations for Southwest states, including one that would substantially reduce the amount of water delivered to Southern California.

- May 2023 - California, Arizona and Nevada will voluntarily conserve 3 million acre-feet of water until 2026, amounting to about 13% of those states' total allocation from the river.

OC Grand Jury Impact

NEWS RELEASE
June 9, 2023

ORANGE COUNTY GRAND JURY

700 CIVIC CENTER DRIVE WEST • SANTA ANA, CALIFORNIA 92701 • 714/834-3320
www.ocgrandjury.org • FAX 714/834-5555

HISTORIC RAIN, YET DROUGHT REMAINS

Santa Ana, California— The "atmospheric river" of winter 2022-23 in California, causing floods in the lowlands and record snowpack in the mountains, has many people assuming that the "drought is over." *This assumption is far from the truth*. Drought conditions are here to stay. While Orange County dams and reservoirs are currently at full capacity and the Sierra snowpack is at its deepest level in many years, there has been limited impact on the Western Rockies, the Colorado River, Lake Powell, and Lake Mead from which Southern California draws a significant amount of its potable water supply.

For the purposes of this report, the Orange County Grand Jury differentiated between source and supply. The source of water is the ocean and the resultant precipitation. The supply of water is how precipitation is captured and delivered to consumers of water, including recycling and reuse of this water. Climatologists, water experts, and water managers agree we must adapt to climate change because longer droughts and extreme weather patterns are inevitable, adding urgency towards finding new methods for obtaining additional water sources.

6/9/2023

GRAND JURY REPORT TO ALL OC WATER SUPPLIERS

"HISTORIC RAIN, YET DROUGHT REMAINS"

- Pg 14 – "Water management in California is very complex. There are numerous constituents placing a huge demand on water resources. This pressure coupled with an antiquated water infrastructure, with hundreds of water wholesalers and retailers, makes a challenging dynamic. The State lacks long-term solutions to California's water need is not new. No new reservoirs have been built since the 1970's."
- Pg 16 – "Water management in California can be best summed up as always studied but never solved."

FULL REPORT CAN BE FOUND ON SWD WEBSITE

www.serranowater.org

EXCERPTS FROM GRAND JURY REPORT

- "Water is our most precious resource".
- "Longer droughts and extreme weather."
- Having to conserve much more leading to **mandated rationing".**
- Drastic restrictions on **landscaping** water use.
  - Simply cannot reply upon the Colorado River as a dependable supply, now or in the **future.**
  - Local ground water basin is not large enough to **meet demand.**

NOTE: Both undependable supplies are used by SWD.

OC Grand Jury Recommendations

- OC Supervisors form “Climate Resiliency District”.

OR

- OC Supervisors form Joint Powers Authority to explore drought resistant source.

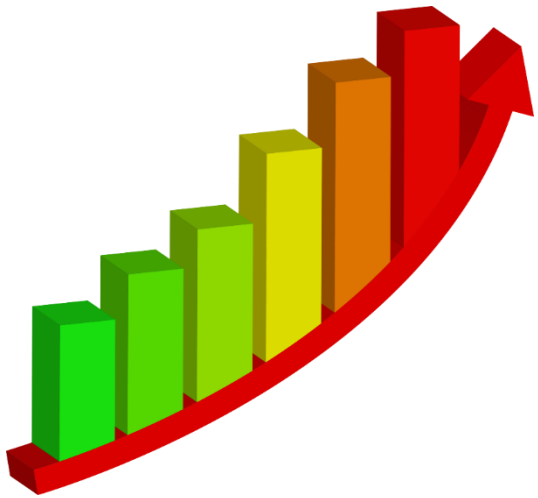
AND

- OC agencies expedite construction of a Desalination Plant. (Will increase your water cost significantly).

- All OC agencies and Cities develop emergency moratorium to plan for Colorado River constraints by end of 2023.

Rising Costs of Purchased Water

- Colorado River supply cutbacks due to extreme drought, low levels. Climate change.
- MET implementing IPR/DPR projects and investments in other expensive imported water projects.
- Groundwater PFAS Contamination Cleanup.
- Grand Jury Impacts



SWD Water Sources

- Native low-cost Santiago Reservoir Supply
- Groundwater, less expensive than Import Water but is increasing sharply due to PFAS cleanup
- High-Cost Import Water

System Overview

- 2285 Meters
- 42 Miles of Distribution Pipeline
- 358 Fire Hydrants
- 963 Valves
- 25 Pressure Reducing and Sustaining Valves
- 2 Groundwater Wells
- Annual 2600 AF Demand
- City of Orange Supply and Emergency Interconnections

PFAS in Orange County

What are they, how do they impact us and what's being done?

What Are They?

Per- and polyfluoroalkyl substances (PFAS) are a group of thousands of manmade chemicals that are used to make carpets, clothing, fabrics for furniture, food packaging, cookware, and other materials to make them non-stick and/or resistant to water, oil, and stains. They are also used in a number of industrial processes and firefighting activities.

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Estimated Costs of PFAS to Orange County over 30 Years

$1 BILLION

**As of July 2020 these costs are based on preliminary data and will likely increase.*

C.L. “Larry” Pharris Jr Filtration Plant
PFAS

- Well water filtration of up to 3000 gallons per minute.

Walt E. Howiler Jr. Treatment Plant

- 4 Million Gallon Per Day treatment of native water from Santiago Reservoir and imported water as well.
- Much of SWD system tied to this treatment plant and it would be difficult to just abandon the Santiago Reservoir.
- During the construction of the PFAS filtration plant, 100% of the supply came from Santiago Reservoir and was treated at this Walt E. Howiler Jr. Treatment Plant.

Water Storage

- Smith Reservoir and Booster Pump Station (6 MG)

Lockett Reservoir 3 Million Gallons

Where Are We Today?

STATE MANDATES INSPECTION OF ALL DAM SPILLWAYS

- 2018 Lake Oroville Spillway fails and CA Division of Safety of Dams mandated ALL dams in CA be inspected due to the failure of Lake Oroville's spillway.

Replacement of Santiago Reservoir Spillway and Outlet Tower

- 2018 State Mandated Replacement due to Poor Condition and Extremely High Hazard Down Stream Inundation.
- Operating Level Restricted until replaced which restricts the native low-cost water collected at the dam and therefore must purchase more expensive groundwater and or import water.
- 2019 design begins on the full replacement of the Santiago Reservoir spillway and outlet tower.

What is Wrong with the Spillway?

What is Wrong with the Outlet Tower?

What is the Cost?

- 2023 estimate $75 Million (SWD's 25% Share).
  - Cost of construction since COVID has gone up dramatically from $35 Million in 2020 (Last Town Hall Meeting).
  - The Spillway hydraulic model revealed the need for a new alignment.
  - Other changes in design and significant increase in scope.

Owner Contingencies	*Not included*	0%	-
Project Contingency			-
OPINION OF PROBABLE PROJECT COST			**226,200,643**
LOW RANGE (-20%)			**180,960,514**
HIGH RANGE (+30%)			**294,060,835**

Ranges are based on AACE

Replacement of Santiago Reservoir Replacement Draft Timeline

- 60% Design – March 2023
- 90% Design - November 2023
- Completion of EIR – December 2023
- Completion of permitting – January 2024
- 100% Design - June 2024
- Start draining Irvine Lake – July 2024
- Final design - November 2024
- Award Construction Contract – January 2025
- Start Construction – July 2025
- Final Completion – September 2028
- DSOD (Division of Safety of Dams) Deadline - 2029

Replacement of Smith Reservoir and Booster Pump Station (Taft and Sycamore) $22 Million

- Spauling concrete and 1960's design standards = Seismic Issues.
- Electrical and pumpstation past its useful life.
- Today 25% design and estimated cost $22 Million will be mandated at sometime.
- Exploring funding options for all projects.

Exploring Cost Reductions

- Pursuing Grants and Long-Term Debt Financing.
- May 2023 – Submitted WIFIA Loan Application for $75 Million, **lower interest rate** and longer-term Federal Loan.
- Congresswoman Young Kim – Earmarked $5 Million for Smith Reservoir, still waiting to be approved.
- State Appropriations for High Hazard Dams for $400 Million.
- We are not the only agency with these challenges. Highly competitive industry.

SWD's Board of Directors Directed Staff to Research Other Agencies that May Participate to Offset Project Costs

- Irvine Ranch Water District
- City of Orange
- Orange County Water District
- Municipal Water District of Orange County
- Other Water Agencies

Option 1- Transfer Santiago Reservoir

Advantage:

- Avoid $75M in capital and debt service cost via transfer of all liability.

Disadvantages:

- Lose all water and recreation rights!
- Lose unique local water supply asset and flexibility.
- Lose significant revenue for SWD from water sales and storage on behalf of other agencies.

Option 1- Transfer Santiago Reservoir

Disadvantages (Continued):

- Inefficient use of treatment plant.
- Full cost Metropolitan un-treated water.
- More vulnerable to emergencies.

Option 2 - Repair Santiago Reservoir and Retain Asset

Advantages:

- Retain all water and recreation rights!
- Retain unique local water supply asset and flexibility.
- Retain significant revenue for SWD from water sales
- Retain ability to store on behalf of other agencies.

Option 2 - Repair Santiago Reservoir and Retain Asset

Advantages (Continued)

- Efficient use of treatment plant.
- Native water supply rather than high cost imported water.

Disadvantage:

- $75M in capital and debt service cost.

Best Option is #2

- SWD currently anticipates moving forward with investing in the Santiago Reservoir Project as the best option for SWD ratepayers.
- Secures SWD's position as having an extremely reliable local supply of water. Retains long term ownership of water rights which limits exposure to Federal and State regulations.
- The mid to long term cost of the project will be less than the cost of water over time under any other alternative.
- SWD will continue to work on securing State and Federal Grants, local partnerships for sales of excess supply and storage with other local agencies that may offset the cost of required Capital Improvement Projects.

How Do We Pay For It All?

- Reserves
- Grants
- Loans
- Rate Increases

What Makes Up Your Rate

- Regulatory Compliance
- Capital Improvements
- Operations & Maintenance Costs
- Debt Financing
- Conservation and Consumption Reduction Mandates from State.

Groundwater Costs

Orange County Water District Replenishment Assessment History				
	Fiscal Year Endng	RA ($/af)	Comments/Budget Impacts	Basin Production Percentage
Actual	2013	$266	Santa Ana River Baseflows declined ~ 50% from 1998 to 2017	BPP increases from 65 to 68%
	2014	$276		BPP increases from 68 to 70%
	2015	$294	Funding GWRS Initial expansion from 70 mgd to 100 mgd	BPP increases from 70 to 72%
	2016	$321		BPP increases from 72 to 75%
	2017	$402	OCWD budgets to purchase 65,000 afy of MWD untreated water	
	2018	$445		
	2019	$462	MWD subsidies for the GWRS end	BPP increases from 75 to 77%
	2020	$487		
	2021	$487	No increase due to uncertainity of COVID on the local economy	
	2022	$507	Begin large increases to fund PFAS treatment systems for 58 wells	
	2023	$558	Large increases in GWRS chemical and electricity costs	BPP increases from 77 to 85%
	2024	$624	Funding GWRS Final expansion from 100 mgd to 130 mgd	
Projections	2025	$683	Begin to Accumulate funding for PFAS treatment systems for additional 45 wells	
Begin	2026	$748		
	2027	$819		
	2028	$897		
	2029	$942		
	2030	$989		
	2031	$1,039		
	2032	$1,090		
	2033	$1,145		
	2034	$1,202		

Future RA projections are a rough estimate of what could occur and can be used for planning purposes. Actual future RAs will depend upon several factors including weather patterns, goals for the BPP, water quality issues, the cost of untreated imported water, chemical and electricity pricing, total groundwater pumping and other factors.

2013-2034 Cost Increase of 450%

Imported Water Costs

Metropolitan 10 Year Rate History and 10 Year Estimated Published Rates			
	Year	Treated/$AF	Un-Treated/$AF
Actual	2013	$ 847.00	$ 593.00
	2014	$ 890.00	$ 593.00
	2015	$ 923.00	$ 582.00
	2016	$ 942.00	$ 594.00
	2017	$ 979.00	$ 666.00
	2018	$ 1,015.00	$ 695.00
	2019	$ 1,050.00	$ 731.00
	2020	$ 1,078.00	$ 755.00
	2021	$ 1,104.00	$ 777.00
	2022	$ 1,143.00	$ 799.00
	2023	$ 1,209.00	$ 855.00
Projection	2024	$ 1,256.00	$ 903.00
Begins	2025	$ 1,344.00	$ 966.00
	2026	$ 1,425.00	$ 1,024.00
	2027	$ 1,511.00	$ 1,085.00
	2028	$ 1,602.00	$ 1,150.00
	2029	$ 1,698.00	$ 1,219.00
	2030	$ 1,783.00	$ 1,280.00
	2031	$ 1,872.00	$ 1,344.00
	2032	$ 1,966.00	$ 1,411.00
	2033	$ 2,064.00	$ 1,482.00

2013-2033
Cost Increase
of 250%

SWD Rate Estimates

10 YEAR ESTIMATED RATE PROJECTIONS										
	2023-24	*2024-25*	*2025-26*	*2026-27*	*2027-28*	*2028-29*	*2029-30*	*2030-31*	*2031-32*	*2032-33*
Volumetric Rate*	5.03	5.59	6.18	6.81	7.44	8.03	8.67	9.36	10.00	10.57
Fixed Meter Rate (1" & 3/4")**	41.69	44.76	48.06	51.36	54.38	57.57	60.95	64.53	67.67	70.29

- The rate estimates include:
  - 2.87% CPI per year based on the previous 10-year average.
  - Passthrough costs based on OCWD & MET rate estimates
  - Capital Infrastructure loan payments.

*Volumetric rate = 1 unit (748 gallons).

**Fixed Meter Rate includes 1 unit of water.

Note: Other Local OC agencies rely on Imported and Groundwater which will significantly impact their rates.

Why Should SWD Retain Santiago Reservoir?

- Water Rights – History has demonstrated that water rights are one of the most important assets to retain in CA.
- Unique, flexible low-cost water supply over the long term into perpetuity.
- Having three sources of water that give us alternatives in some of the most extreme emergency situations.
- Reliable, uninterrupted water supply.

Thank You. Questions?