



Stevens Creek Reservoir
Photo Credit: Sarah Gidre

Water Utility Enterprise Overview

Aaron Baker P.E., Chief Operating Officer

Wednesday, March 23, 2022



Overall Water Supply for Santa Clara County



Shasta Lake
Federal Central Valley Project



Lake Oroville
State Water Project



Sacramento-San Joaquin River Delta



Hetch Hetchy
San Francisco

Santa Clara County

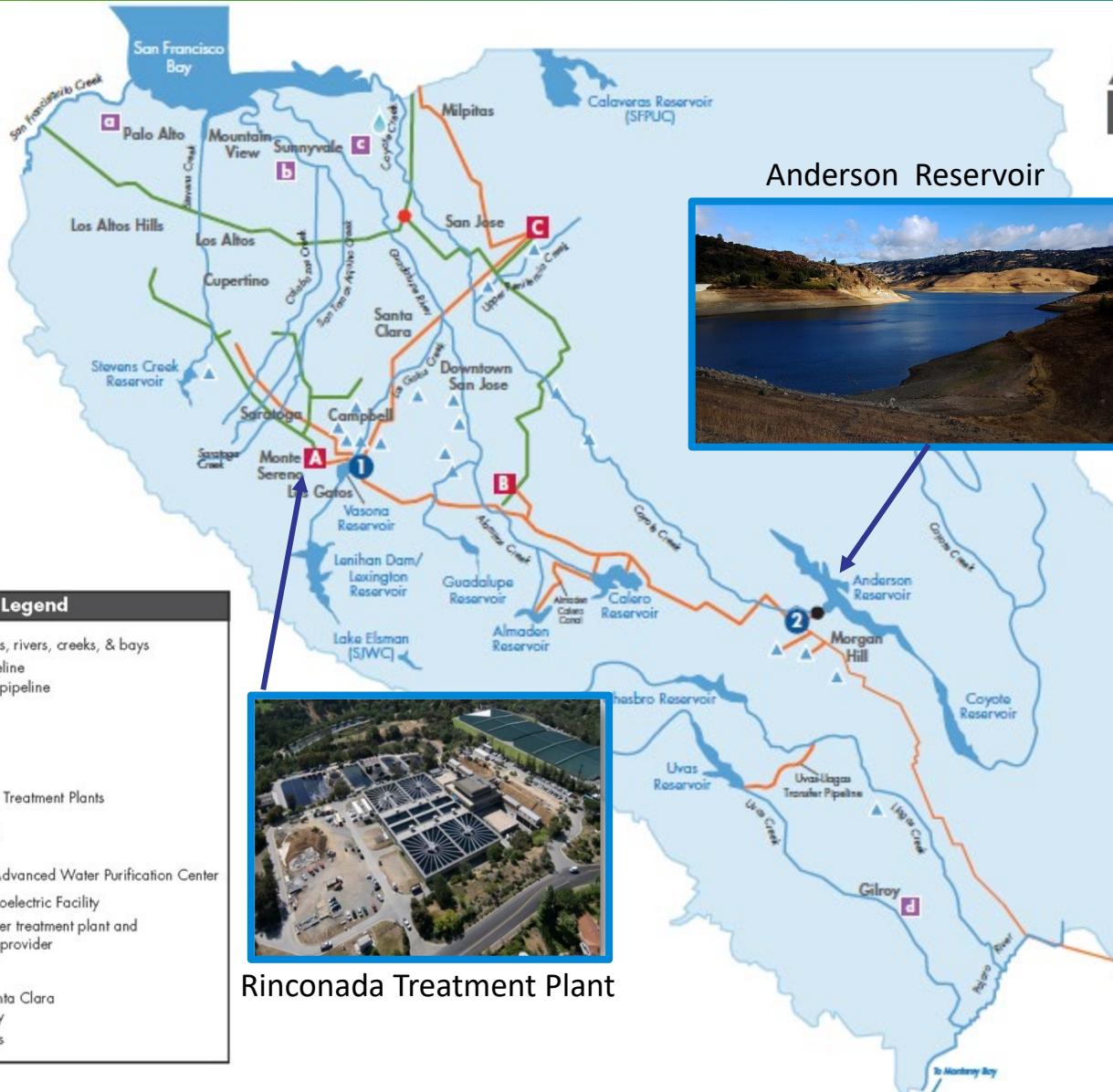
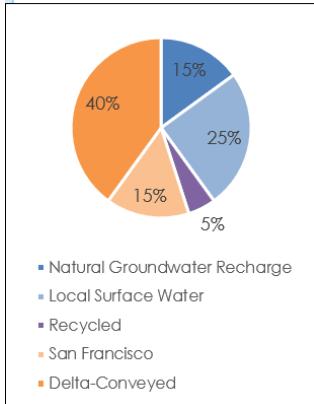
by the numbers

30% local water
15% natural groundwater
10% from reservoirs to groundwater
5% from reservoirs to drinking water treatment plants

55% imported water
15% thru Delta to replenish groundwater
25% thru Delta to drinking water treatment plants
15% from Hetch Hetchy system

5% recycled water
90%
10% continual water conservation
100%

Water Supply Distribution Map



N

10 reservoirs
3 pump stations
142 miles of pipelines
3 water treatment plants
1 water purification center
393 acres of recharge ponds
\$7.1B System Replacement Value



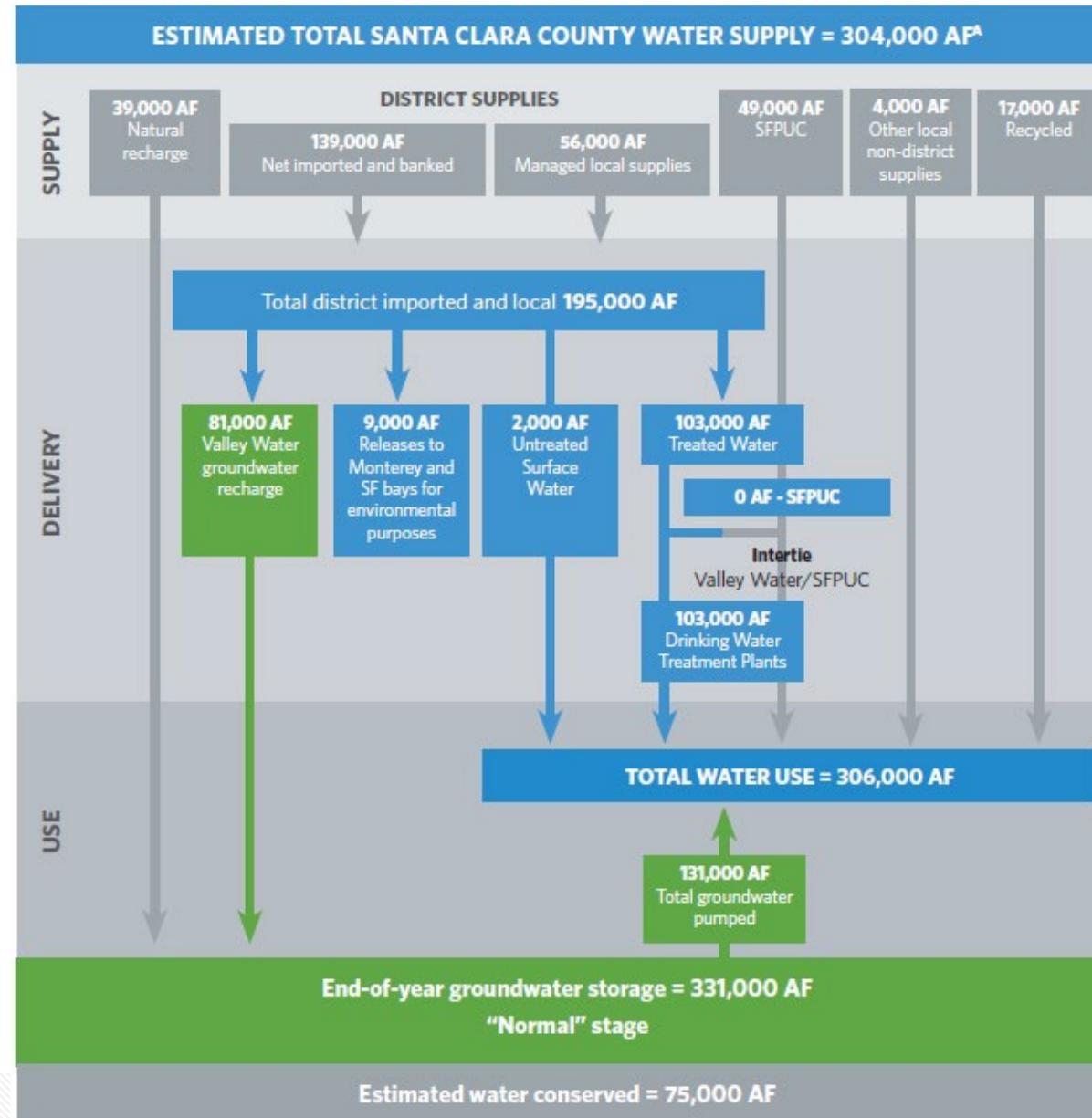
Coyote Pumping Plant



Rinconada Treatment Plant



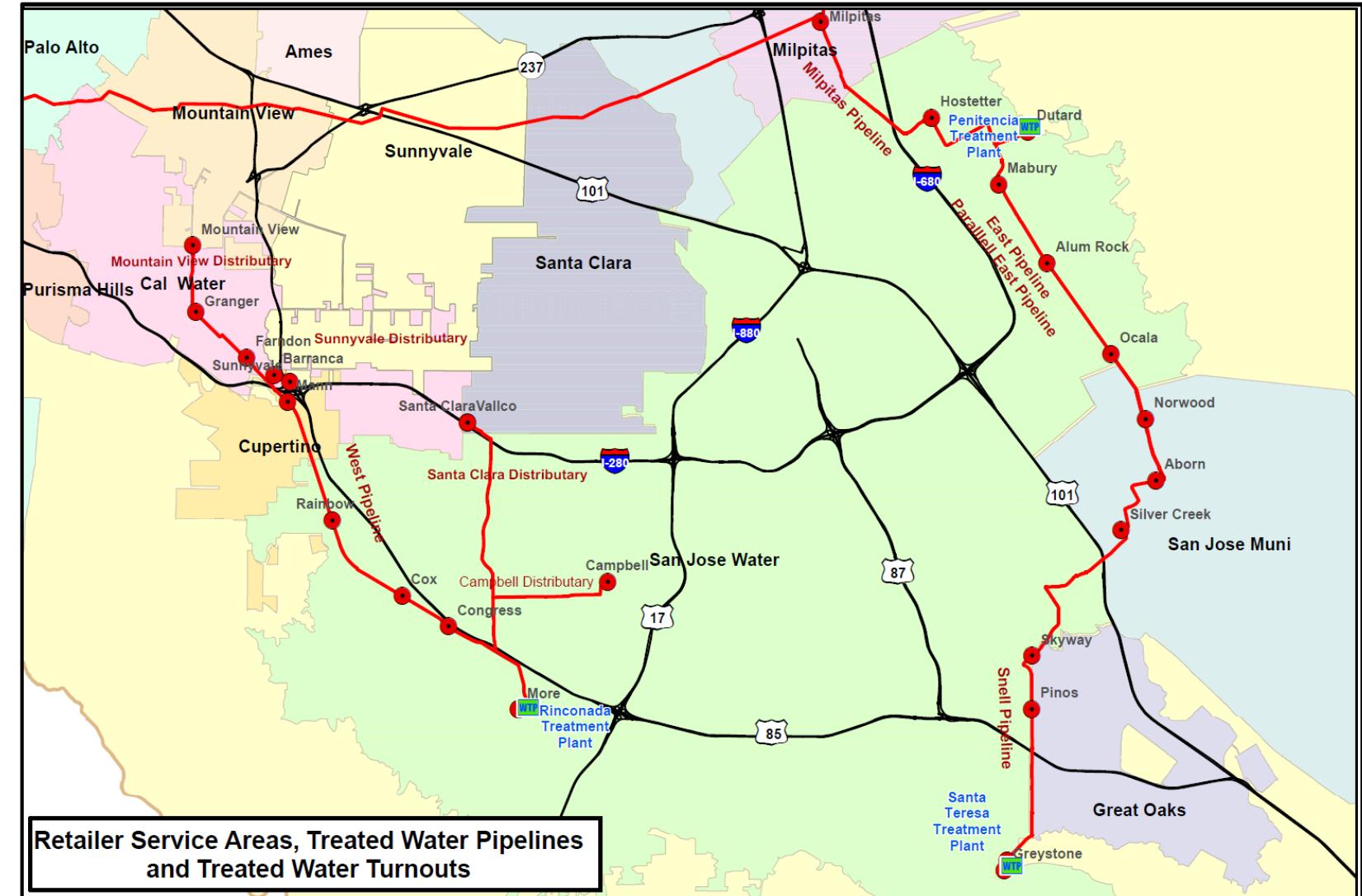
Estimated Total Santa Clara County Water Supply



Water Retailer Service Map

Valley Water works with 13 Retailers

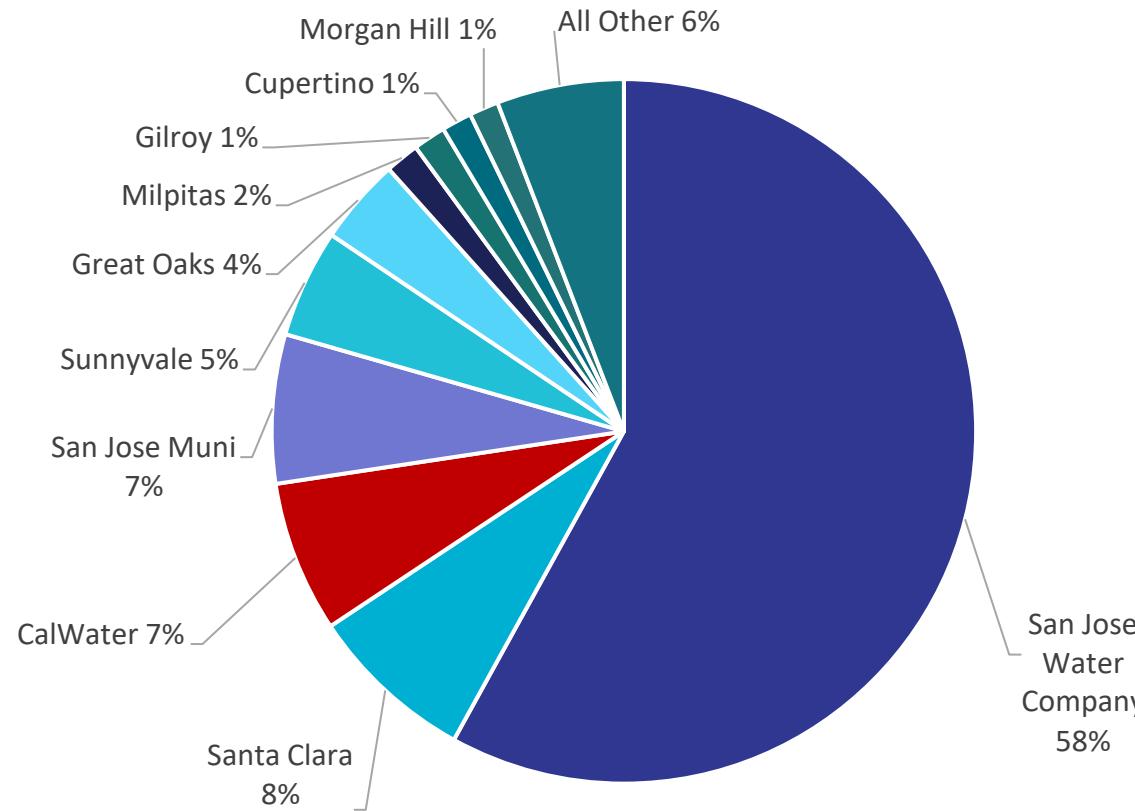
- Cal Water
- City of Gilroy
- City of Milpitas
- City of Morgan Hill
- City of Mountain View
- City of Palo Alto
- City of San Jose
- City of Santa Clara
- City of Sunnyvale
- Great Oaks Water Company
- Purissima Hills Water District
- San Jose Water Company
- Stanford University



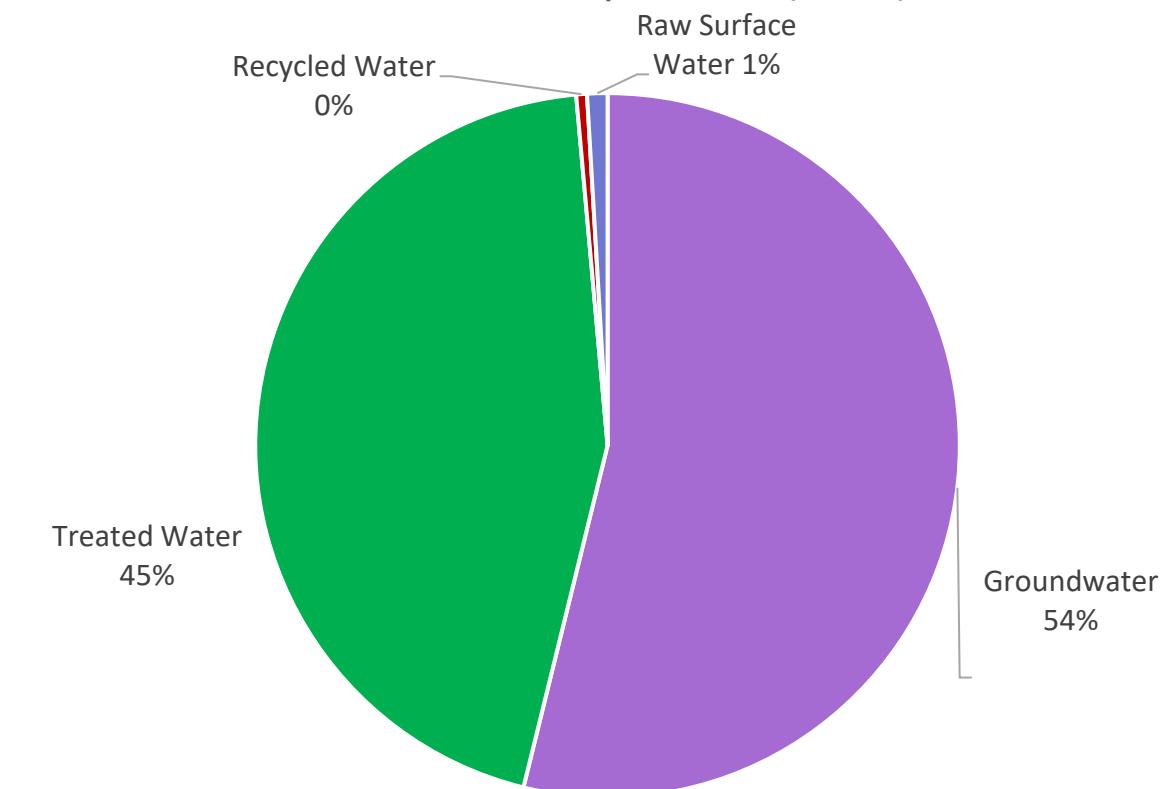


Water Consumption by Customer and Type

Water Consumption by Customer (FY20)



Water Consumption AF (FY20)



Total Acre Feet = 231,216

Water Utility Enterprise

Water Utility Capital Division



Heath McMahon
*Deputy
Operating Officer*

Raw Water Division



Greg Williams
*Deputy
Operating Officer*



Aaron Baker
Chief Operating Officer

Water Supply Division



Vincent Gin
*Deputy
Operating Officer*

Treated Water Division



Sam Bogale
*Interim Deputy
Operating Officer*

Providing a clean, reliable water supply for current and future generations of Santa Clara County.



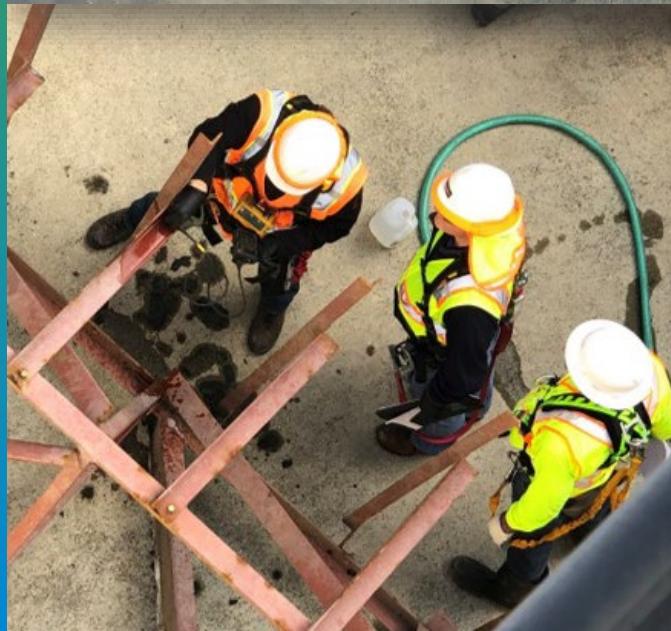
Kirsten Struve
*Assistant
Operating Officer*



Water Utility Capital Division

Construction Services Unit

- Provides construction management and inspection for Capital construction projects



Pipelines Project Delivery Unit

- Plans, designs, and delivers pipeline projects



Raw Water Division

Raw Water Operations Unit

- Operates Valley Water's reservoirs, pump stations, and transmission pipelines to effectively manage water supplies

Treatment Plant Maintenance Unit

- Conducts the maintenance at all the treatment plants and treated water turnout facilities

Raw Water Field Ops and Pipeline Maintenance Unit

- Completes all mechanical, electrical, and control system maintenance of the distribution system infrastructure





Raw Water Division *(continued)*

Raw Water & Pipeline Maintenance Engineering Unit

- Provides engineering and support services for Raw Water & Pipeline Maintenance projects and programs

Groundwater Management Unit

- Ensures local groundwater is managed effectively per California Water Code Sustainable Groundwater Management Act (SGMA) requirements
- Provides accurate and timely information on current and forecasted groundwater conditions

Wells and Water Measurement Unit

- Ensures wells/deep excavations don't harm the Valley Water's groundwater resources and provides accurate measurement of water production.





Water Supply Division

Water Supply Planning & Conservation Unit

- Run conservations programs
- Develops long-term water supply strategy
- Evaluates water supply, demand and future water supply investments

Recycled and Purified Water Program Unit

- Develop and expand recycled and purified water program
- Leads planning and research studies

Imported Water Unit

- Protects, manages and develops Valley Water's imported water assets
- Meets operational needs for imported supplies by securing water transfers, exchanges and banking agreements





Treated Water Division

Water Quality Unit

- Provides water quality support
- Provides recommendations and tracks drinking water-related regulatory development

Laboratory Services Unit

- Provides analytical and sampling services
- Manages the laboratory, that tests water from the treatment plants, Silicon Valley Advance Water Purification Center, surface water reservoirs, and groundwater basins

Utility Electrical & Control Systems Engineering Unit

- Provides electrical and control systems engineering services in support of Valley Water's critical Water Utility facilities

Plant Maintenance Engineering & Commissioning Unit

- Leads the commissioning and start-up activities at treatment facilities and treated water pipelines
- Implements treatment process changes





Treated Water Division *(continued)*

North Water Treatment Operations Unit

- Provides drinking water to three treated water retailers
- Responsible for the operations and management at:
 - Penitencia Water Treatment Plant
 - Silicon Valley Advanced Water Purification Center
 - San Francisco Public Utilities Commission-Valley Water Intertie facility
 - East/Milpitas Pipeline turnouts



South Water Treatment Operations Unit

- Provides drinking water to seven treated water retailers
- Responsible for operations and management at:
 - Santa Teresa Water Treatment Plant
 - Rinconada Water Treatment Plant
 - Campbell Well Field
 - West and Snell/East Pipeline turnouts



QUESTIONS





Valley Water

Clean Water • Healthy Environment • Flood Protection

Valley Water Finances and Rate Setting Process

March 23, 2022

SCVWD Finances organized by “fund”

Water Utility

Accounts for activities to ensure a reliable water supply (as the principal water wholesaler for the County)

Safe Clean Water (SCW)

Accounts for a program approved by voters in November 2020

Watershed & Stream Stewardship

Accounts for flood protection and watershed management activities

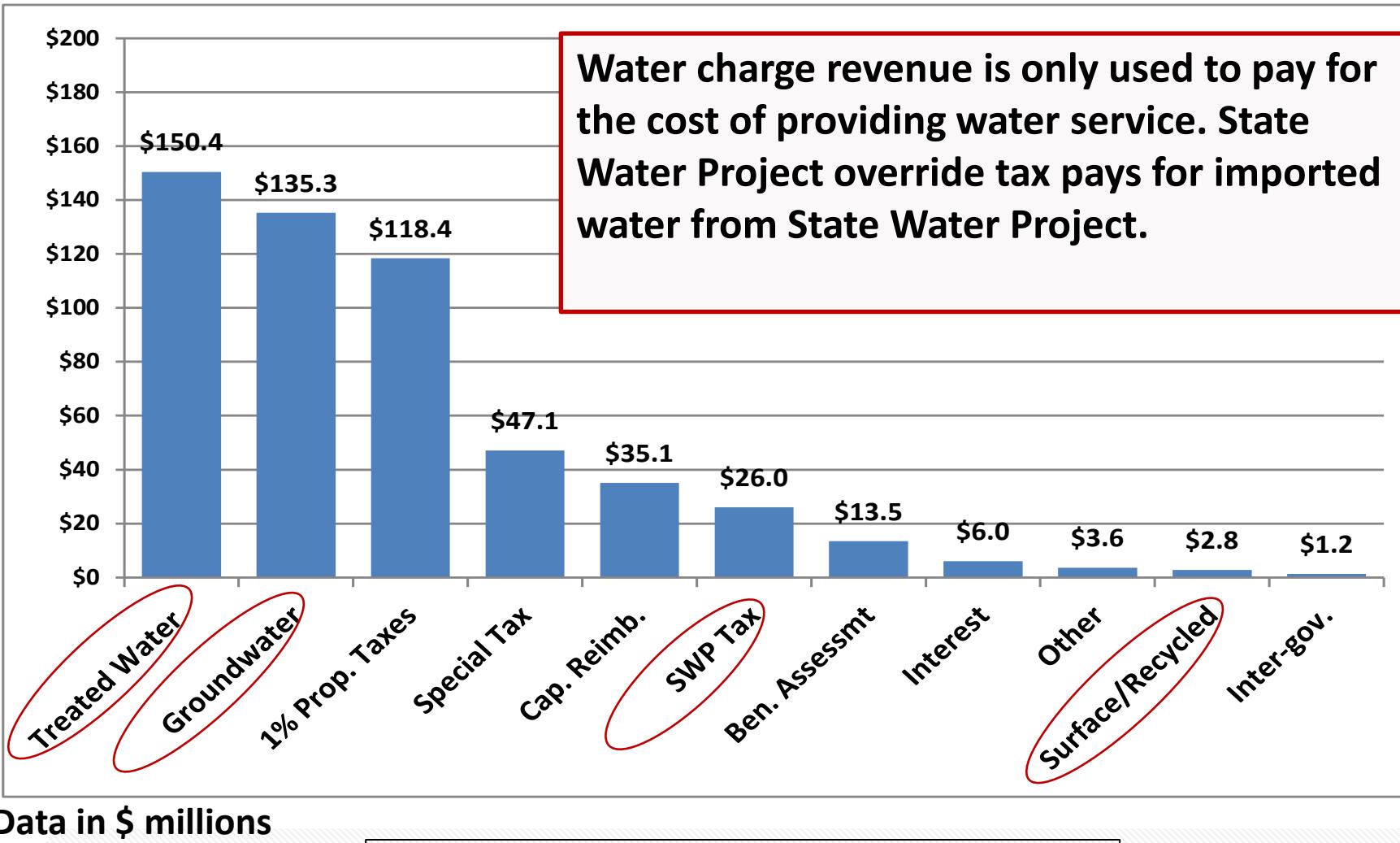
Administration

Accounts for administrative and strategic support services that are provided to the other funds (Legal, HR, Finance, IT, etc...)

SCVWD Revenue Breakdown

Adopted FY22 Revenue by Category

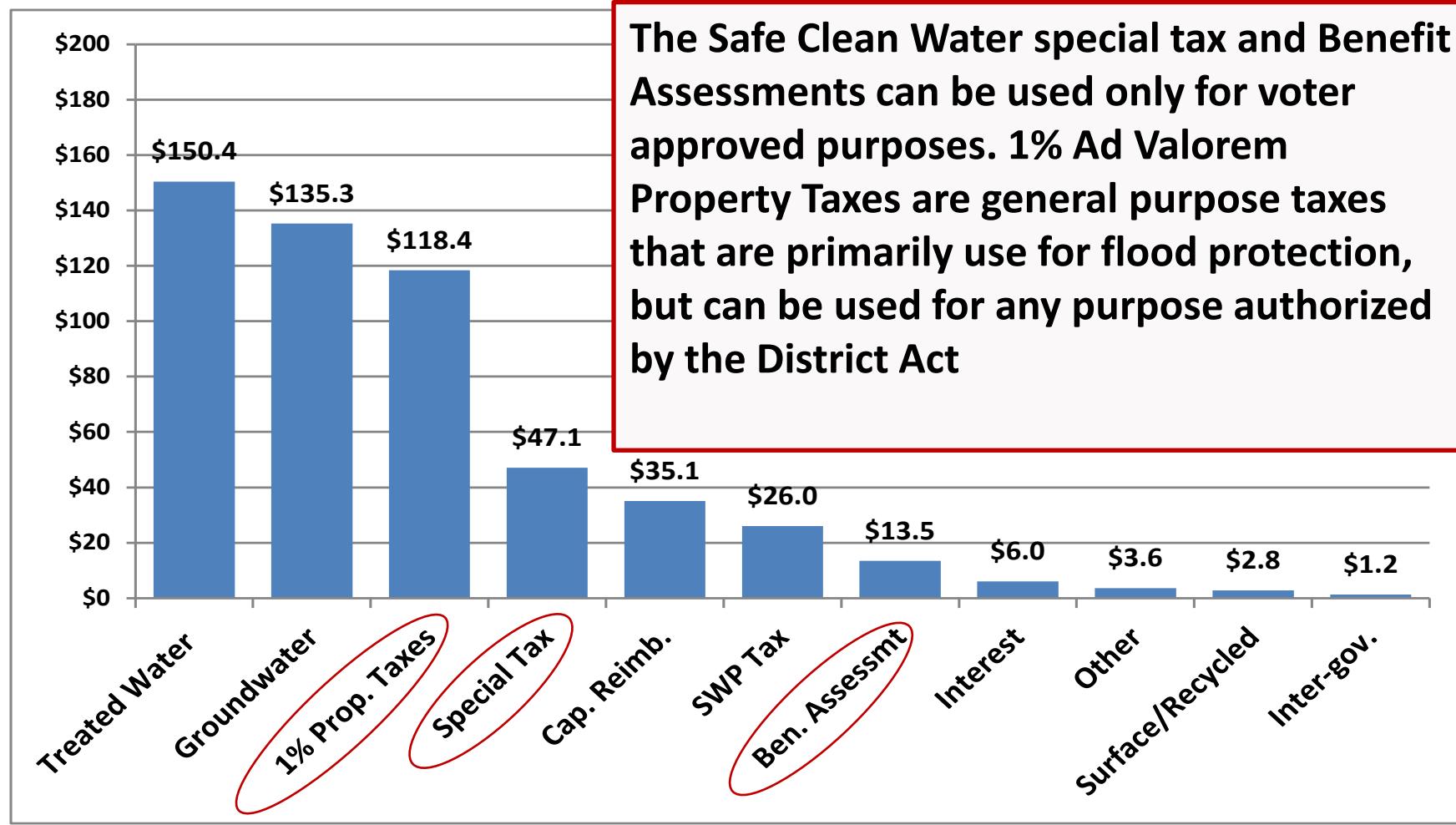
TOTAL: \$539.4 Million



SCVWD Revenue Breakdown

Adopted FY22 Revenue by Category

TOTAL: \$539.4 Million

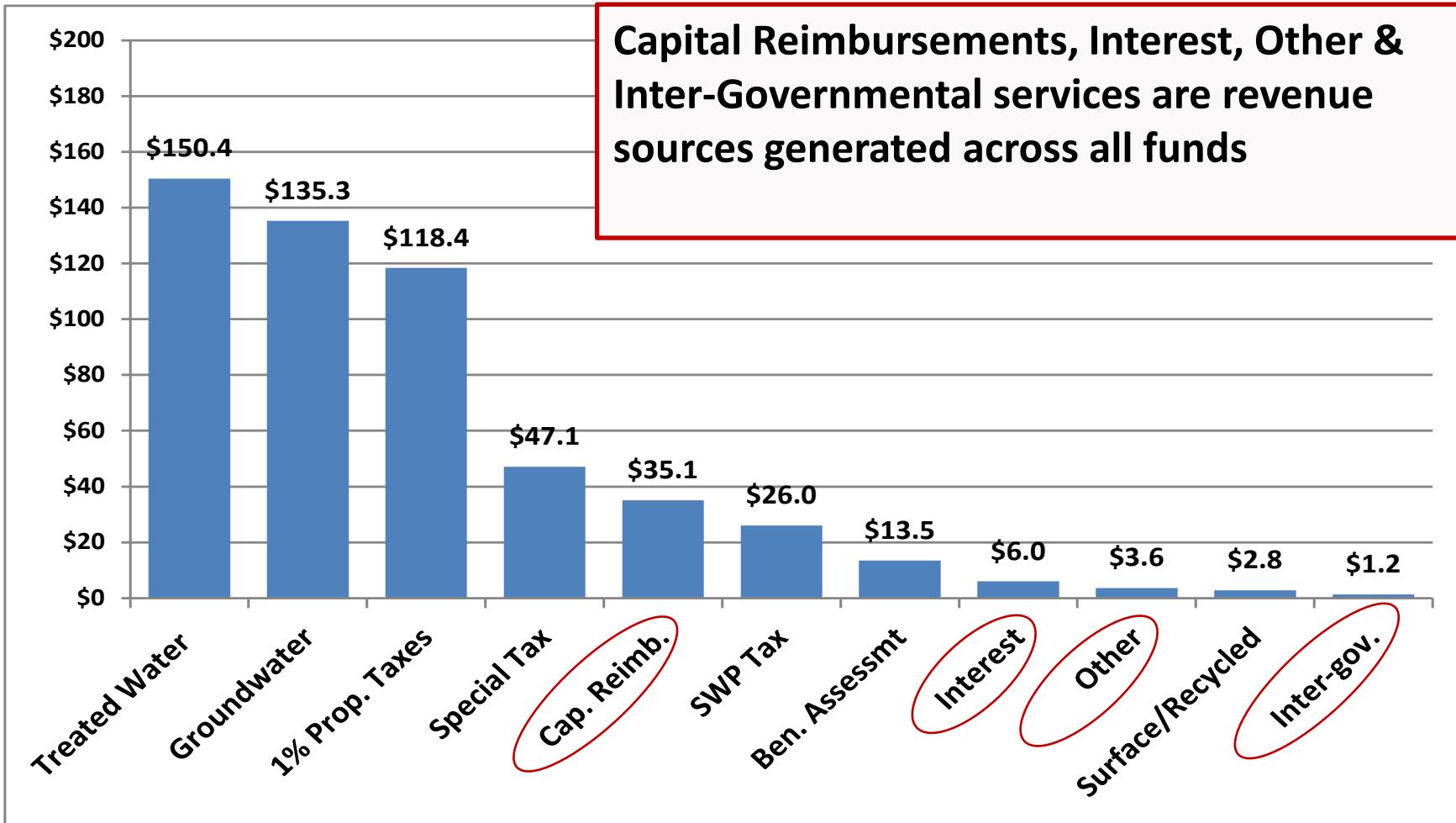


Data in \$ millions

SCVWD Revenue Breakdown

Adopted FY22 Revenue by Category

TOTAL: \$539.4 Million



Data in \$ millions

All Fund Financial Resources Depending on Where Generated

Why do well owners pay SCVWD to pump water from the ground?

Construction at Anderson Reservoir, 1951



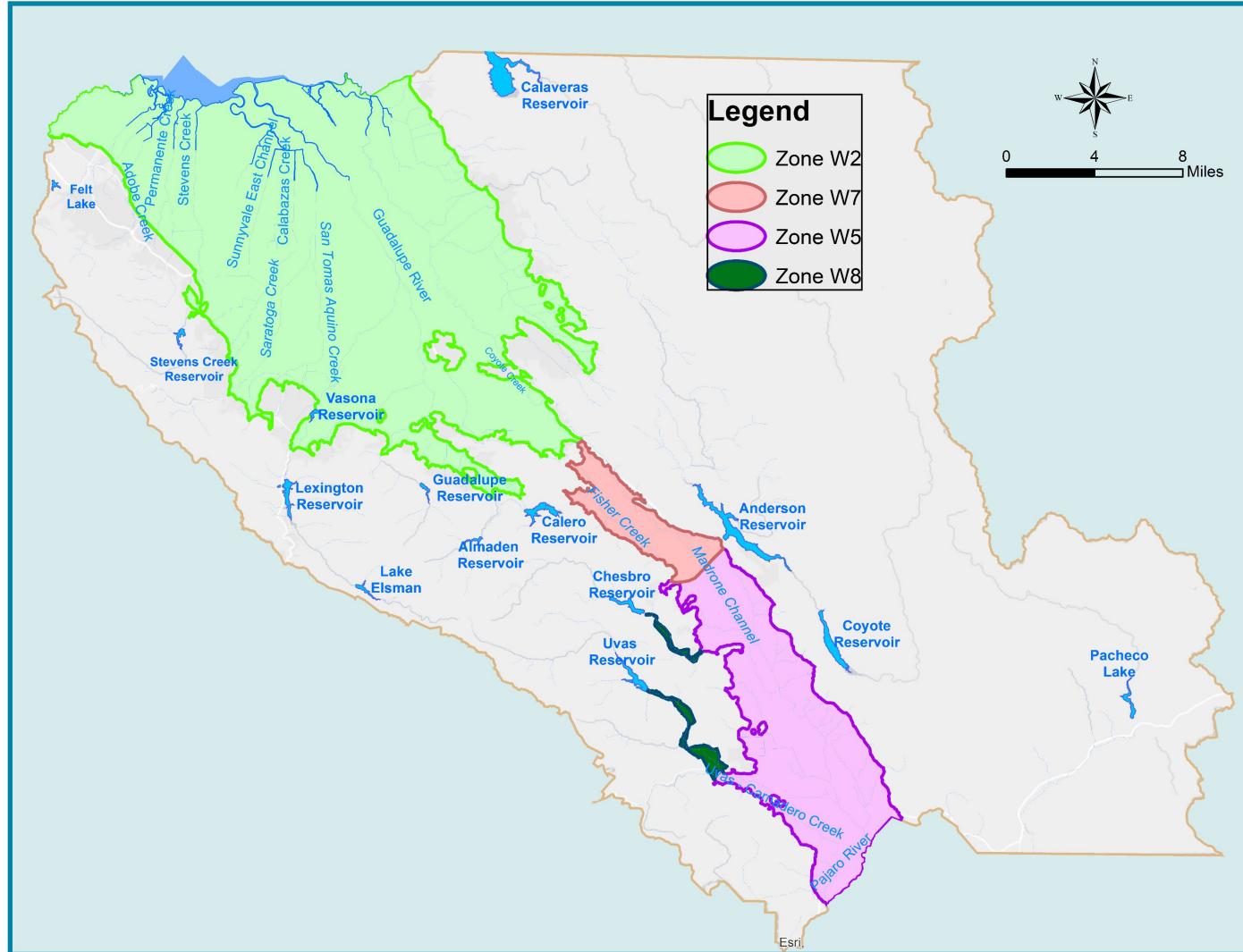
- Local rainfall cannot sustain Santa Clara County water needs
- Planning in early 1900's called for construction of reservoirs to capture rainwater to percolate into the ground
- Groundwater Production Charge is a reimbursement mechanism
 - pays for efforts to protect and augment water supply

Many activities ensure safe, reliable groundwater supplies



- ▶ Plan & construct improvements to infrastructure
- ▶ Operate & maintain local reservoirs
- ▶ Purchase imported water
- ▶ Operate & maintain raw, treated & recycled water pipelines
- ▶ Monitor & protect groundwater from pollutants

Pricing policy maximizes effective water use



- ▶ **Groundwater charges are levied within a zone for benefits received**
- ▶ **All water sources and water facilities contribute to common benefit within a zone regardless of cost, known as “pooling” concept**
 - ▶ Helps maximize effective use of available resources
- ▶ **Agricultural water charge shall not exceed 10% of M&I water charge**

Infrastructure differences drive different groundwater production charges in each zone

9

North County

- 3 water treatment plants
- Reservoirs –
 - Almaden
 - Calero
 - Guadalupe
 - Lexington
 - Stevens Creek
 - Vasona
- Silicon Valley Advanced Water Purification Center
- Imported Water – State Water Project

Shared

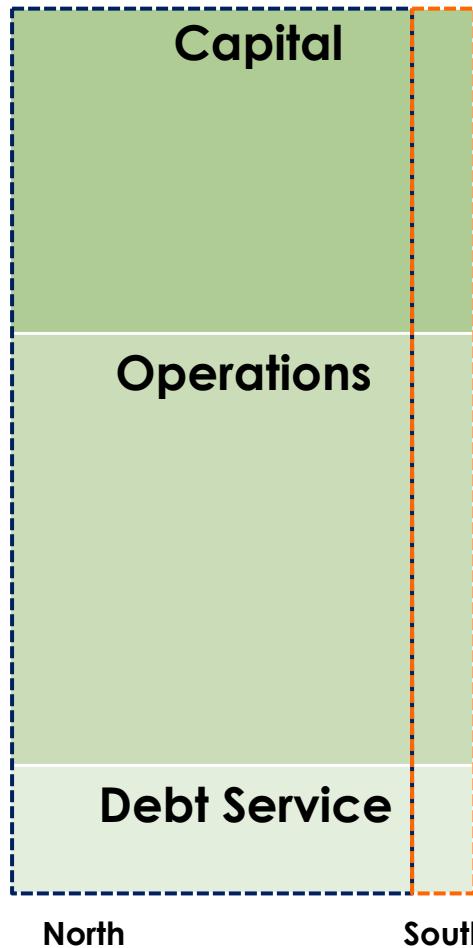
- Reservoirs –
 - Anderson
 - Coyote
 - Pacheco
- Imported Water –
 - Central Valley Project
- Shared facilities do not benefit Zone W-8

South County

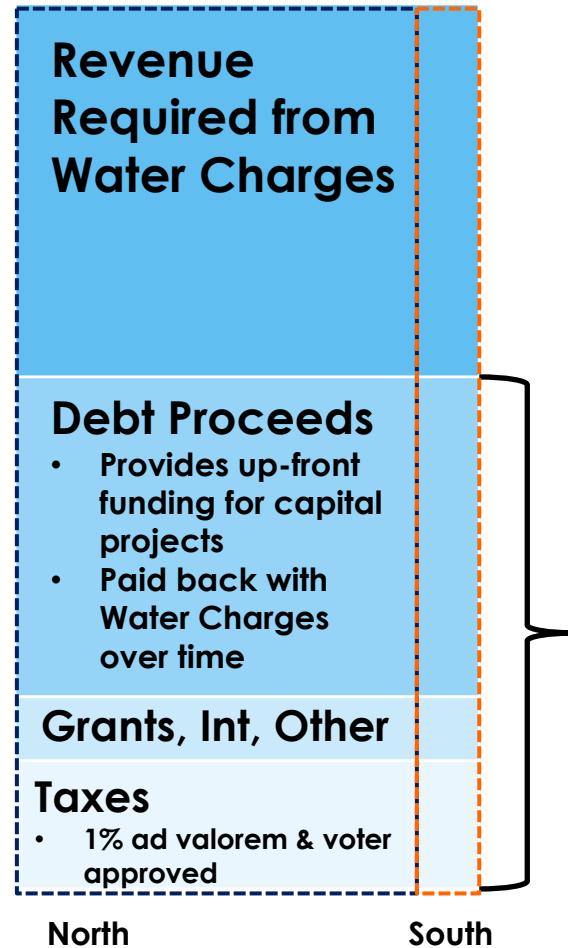
- Reservoirs – Chesbro & Uvas
 - Do not benefit Zone W-7
- SCRWA Recycled Water System
 - Benefits Zone W-5 only

“Revenue Requirements” approach used to determine revenue required from water charges

Revenue Requirements (Cost of Service)



Funding Sources

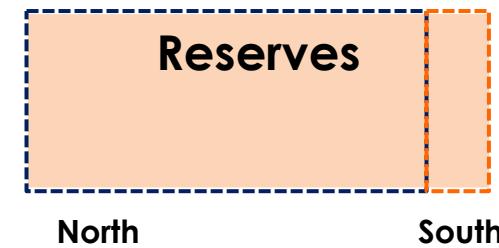


Sound financial targets over multi-year time frame keep bond ratings high

- Debt service coverage targeted at 2.0 or better
- Reserves targeted at policy minimums or better
- Aa1 from Moody's and AA+ from Fitch

North: Zone W-2
South: Zones W-5, W-7, W-8

Non-water
charge
funding
sources



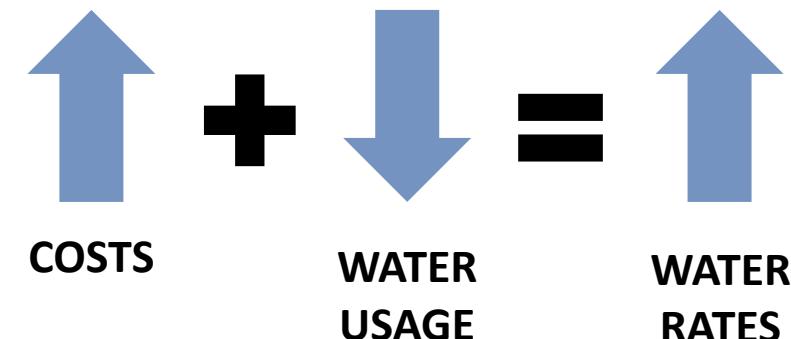
Drought impact puts pressure on water rates

Drought Emergency Cost increases

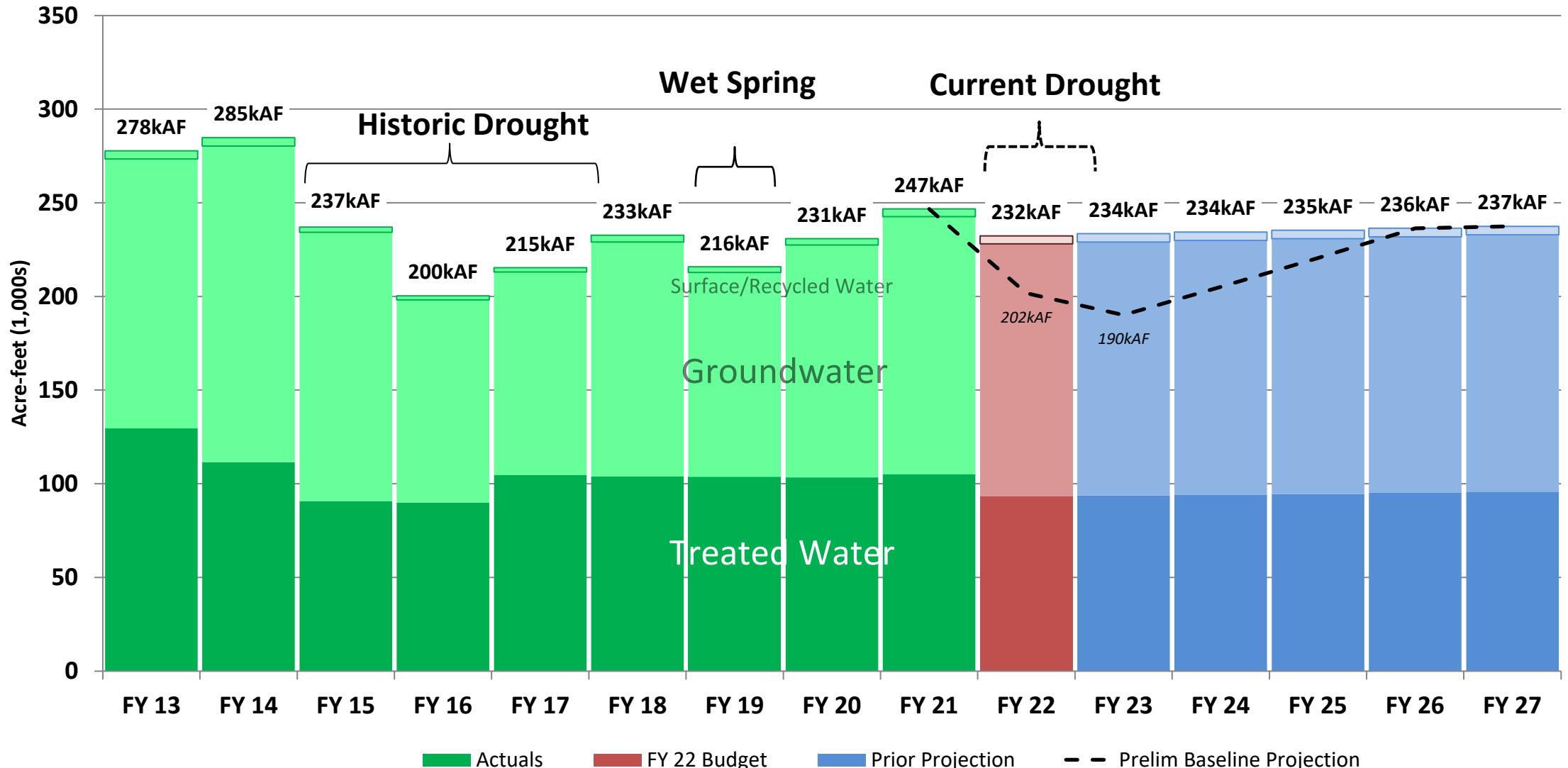
- Emergency Water Purchases projected to be \$67.7M from FY23 to FY25
- Emergency Conservation activities projected to be \$19.8M from FY23 to FY25

Water Usage down

- Mandatory 15% call for conservation compared to 2019 (achieved by FY23)
- Results in lower revenue to pay for highly fixed cost structure



Water Usage (District Managed)



Key Water Supply Projects Driving Water Rates



**Dam Seismic Retrofits/Improvements
(\$1,586 Million)**



**RWTP Reliability Improvements
(\$462 Million)**



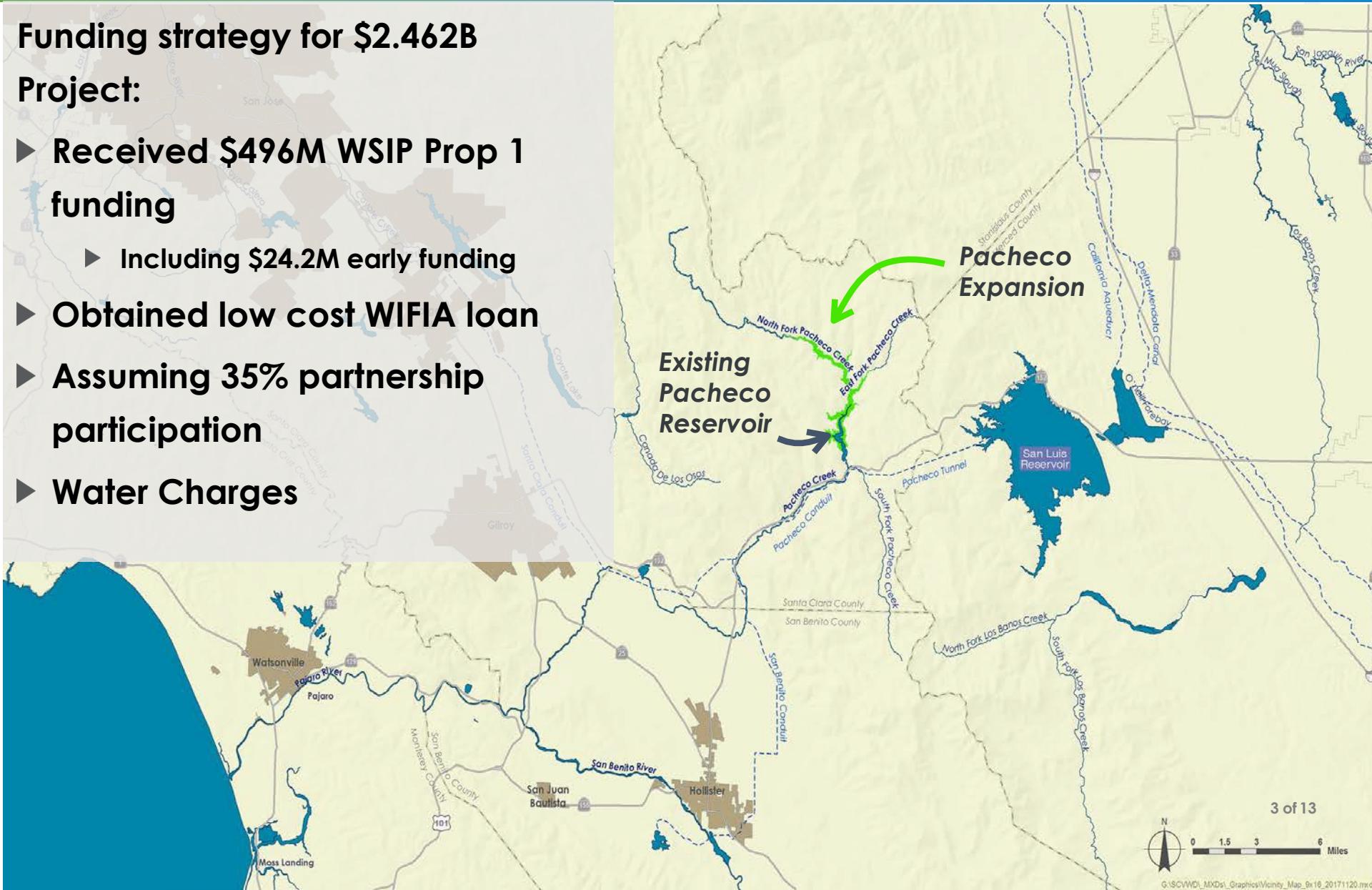
**Purified
Water Program
(\$730 million)**

Key Water Supply Projects - Pacheco Reservoir

Funding strategy for \$2.462B

Project:

- Received \$496M WSIP Prop 1 funding
 - Including \$24.2M early funding
- Obtained low cost WIFIA loan
- Assuming 35% partnership participation
- Water Charges



- 1. Transfer \$39M unspent funds from Pacheco Reservoir Expansion Project to Rate Stabilization Reserve in FY 22; future project cost projection adjusted such that Total Project Cost (TPC) is unchanged**
- 2. Leverage available reserves: draw down \$64M total in FY 23 & FY 24 (including \$39M from PREP unspent funds)**
- 3. One-time transfer of \$25M from WSS Fund to Water Utility in FY 23**

Groundwater Charge Increase Projection

M&I Groundwater Charge Year to Year Growth %

Groundwater Benefit Zone	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
North County Zone W-2	15%	15%	15%	9.1%	9.1%	9.1%	9.1%	5%	5%	5%
South County Zone W-5	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%	5.2%
South County Zone W-7	10.3%	10.3%	10.3%	10.3%	10.3%	10.3%	10.3%	10.3%	10.3%	10.3%
South County Zone W-8	8%	8%	8%	8%	8%	8%	8%	8%	8%	8%

Monthly Impact to Average Household

M&I Groundwater Charge – Monthly impact to Average Household

Groundwater Benefit Zone	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
North County Zone W-2	\$7.75	\$8.91	\$10.24	\$7.15	\$7.80	\$8.51	\$9.28	\$5.56	\$5.84	\$6.13
South County Zone W-5	\$0.86	\$0.92	\$0.97	\$1.02	\$1.07	\$1.13	\$1.18	\$1.25	\$1.31	\$1.38
South County Zone W-7	\$1.86	\$2.07	\$2.28	\$2.51	\$2.77	\$3.06	\$3.37	\$3.72	\$4.10	\$4.53
South County Zone W-8	\$0.93	\$1.02	\$1.10	\$1.18	\$1.28	\$1.38	\$1.49	\$1.61	\$1.74	\$1.88

2022 Schedule

18

- ✓ Jan 3 Ag Water Advisory Committee
- ✓ Jan 11 Board Meeting: Preliminary Groundwater Charge Analysis
- ✓ Jan 19 Water Retailers Meeting: Preliminary Groundwater Charge Analysis
- ✓ Jan 26 Water Commission Meeting: Preliminary Groundwater Charge Analysis

- ✓ Feb 8 Board Meeting: Set time & place of Public Hearing
- ✓ Feb 25 Mail notice of public hearing and file PAWS report

- Mar 8 Board Meeting: Budget development update
- Mar 16 Water Retailers Meeting: FY 23 Groundwater Charge Recommendation
- Mar TBD Landscape Committee Meeting

- Apr 4 Ag Water Advisory Committee
- Apr TBD Water Commission Meeting
- Apr 12 Open Public Hearing
- Apr 14 Continue Public Hearing in South County
- Apr 26 Conclude Public Hearing
- Apr 27-28 Board Meeting: Budget work study session

- May 10 Adopt budget & groundwater production and other water charges

Q: Why don't water rates ever go down?

A: Water is a rising cost industry as a result of:

- ▶ Need to invest in infrastructure;
- ▶ Inflation impact on operations and maintenance costs

Q: Shouldn't water be free?

A: The Water Utility is a service provider, not a commodity provider

- ▶ Groundwater Production Charge is reimbursement mechanism to pay for cost to serve

Q: My water rates went up during drought, I feel like I was punished for conserving water.

A: Water Utility revenue is highly variable, cost structure is highly fixed

- ▶ Decreasing water usage causes upward rate pressure - the classic utility dilemma
- ▶ Water rates may rise in short term due to drought, however conservation will help minimize need for investments in new water supplies over long term
- ▶ Conservation lowers your water bill, so make conservation a way of life!

Education Outreach

ACTIVITY SHEET



PRESENTATION FORMAT

Virtual, On-Site

MATERIALS NEEDED

Single sheet of paper and pen to take notes

GRADE LEVELS

9th to 12th

DURATION

45 to 60 minutes

NEXT GENERATION SCIENCE STANDARDS ALIGNMENT

Disciplinary Core Idea
▪ ESS3: Earth and Human Activity

Crosscutting Concept

- Stability and Change:

Science and Engineering Practice

- Asking Questions and Defining Problems:

COMMON CORE STATE STANDARDS ALIGNMENT

CCSS.ELA-Literacy.SL.9-10.1

ACTIVITY NAME:

Discover California Water



FOCUS QUESTION:

How do humans effect the planet?



Discover California Water

Presented by:
Education Outreach



BACKGROUND

What if I told you that the water you drank today came from hundreds of miles away? What if you learned that technically, Santa Clara county doesn't have enough of its own water to sustain its population? In this activity, students will learn about the challenges facing the heavily population areas of California and the ways that water is transported all over the state.



ACTIVITY

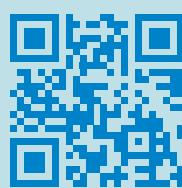
Students take a journey through the water cycle as they explore the interaction between the natural water cycle and the human-constructed water cycle. During an interactive game, students will experience one of the many pathways that water takes as it cycles through the environment. The program ends with a discussion about the ways that humans impact water and how we can act as stewards of our environment.



QUESTIONS?

Email education@valleywater.org

Website: www.valleywater.org/learning-center/teachers-students





Discover California Water

Presented by:
Education Outreach



Have you ever
wondered where
your water comes
from and how far it
has traveled to get
to your faucet?





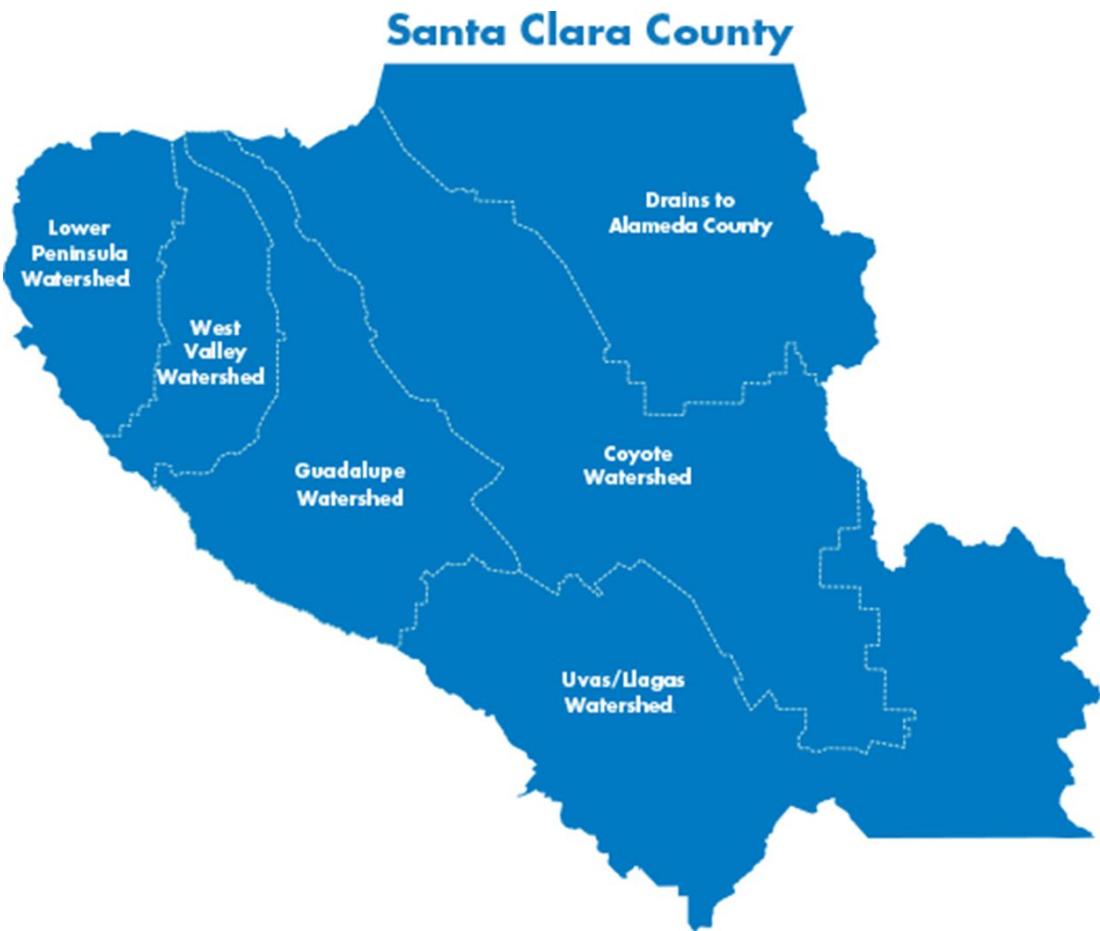
To understand our water, we need to know about where we live.
So, let's talk about water here in Santa Clara County...

Population:
~2,000,000

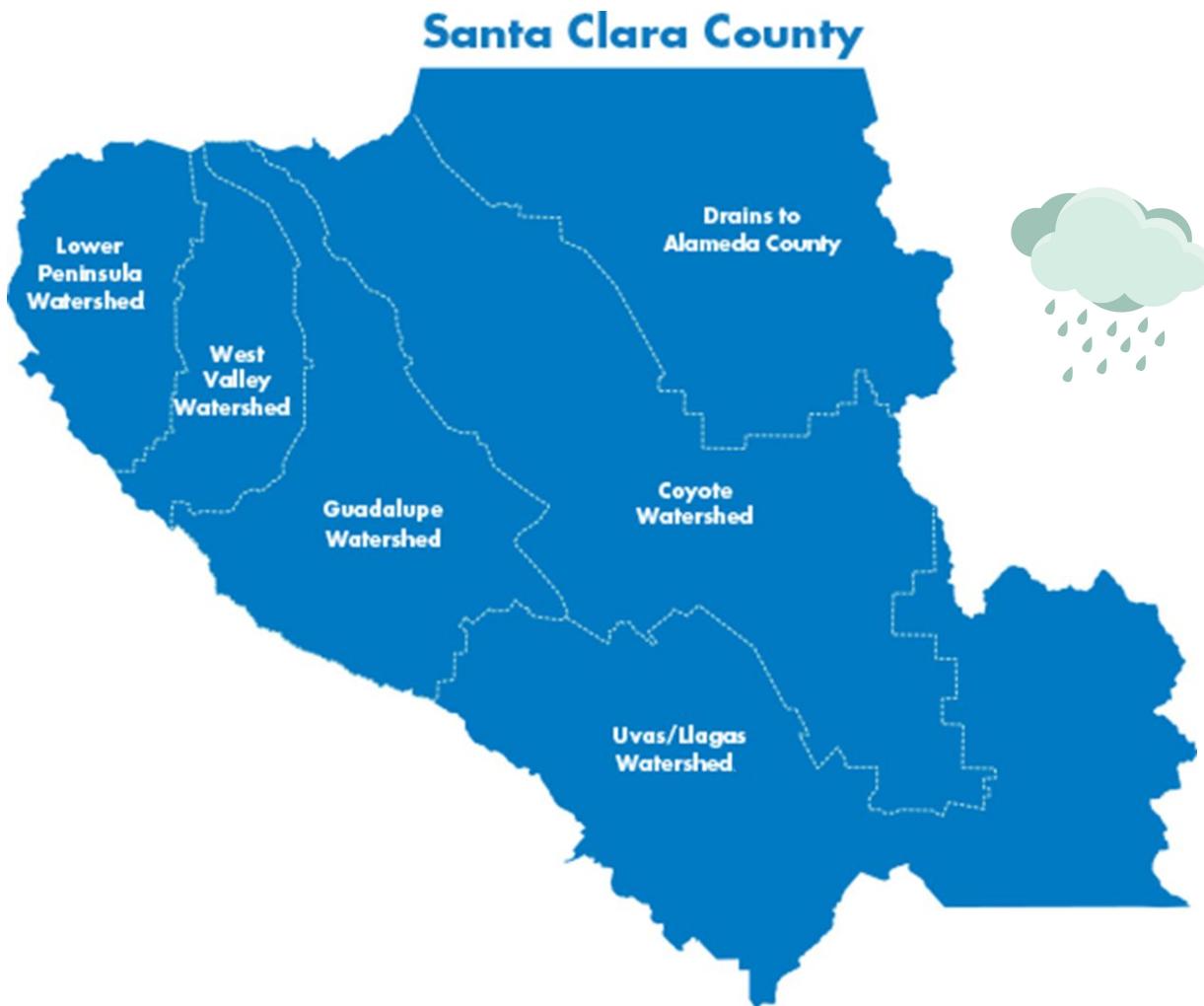
Including you!



Another Santa Clara County water fact!

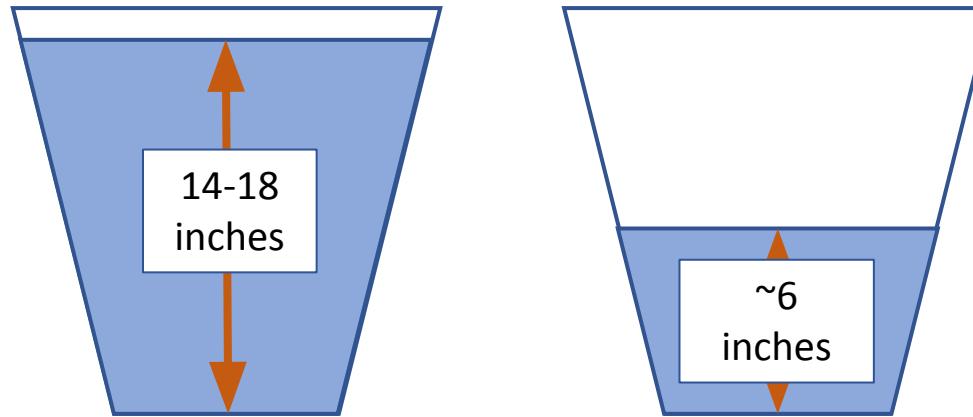


Average annual rainfall in San Jose:
14-18 inches



This year is different, we are experiencing severe drought and have not had much rain

Last year, instead of the average
14 – 18 inches of rain

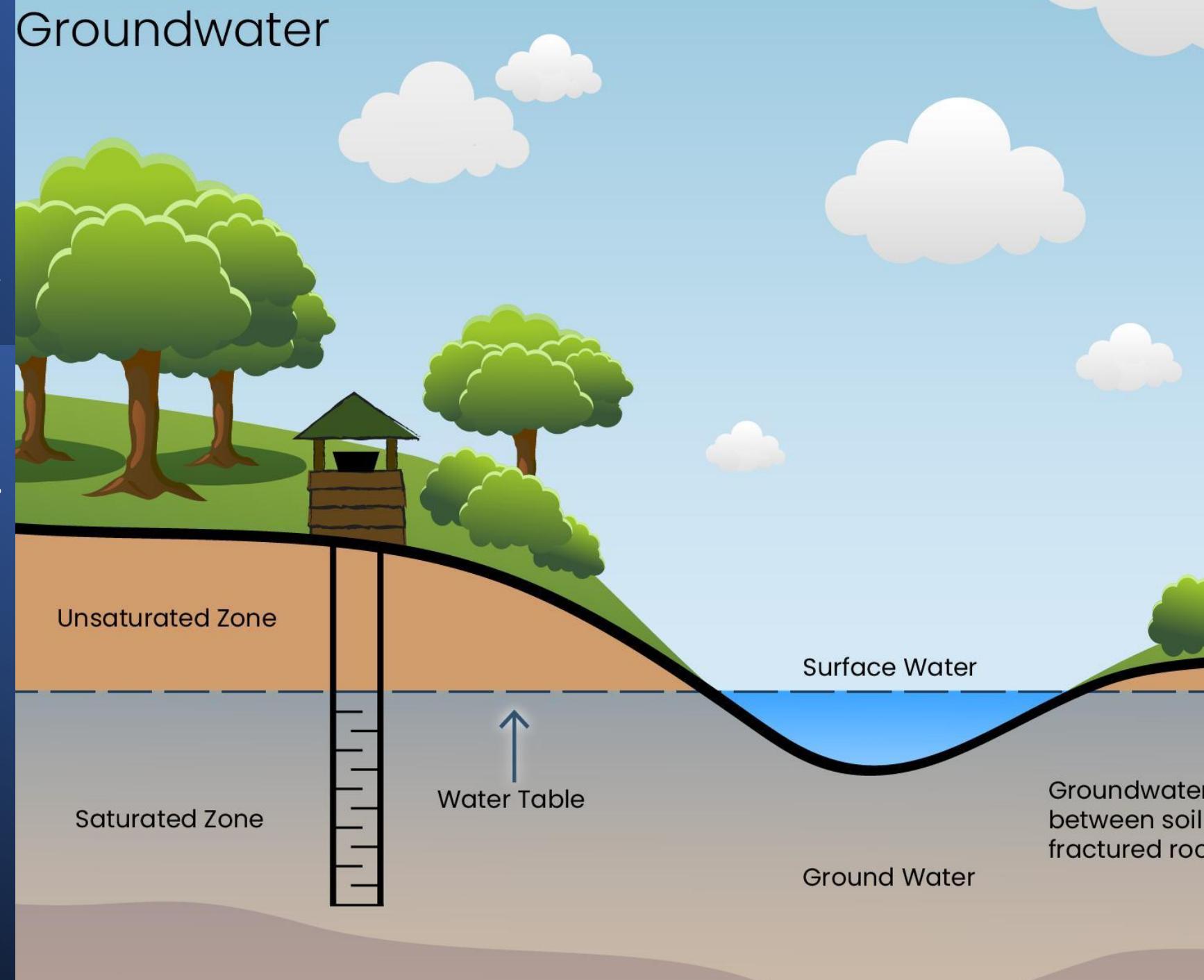


We only had 5.79 inches - that's only 41% of normal.

Drought impacts SURFACE WATER & GROUNDWATER

an important source of water in
our county.

40% of our water
is pumped up
from the ground.

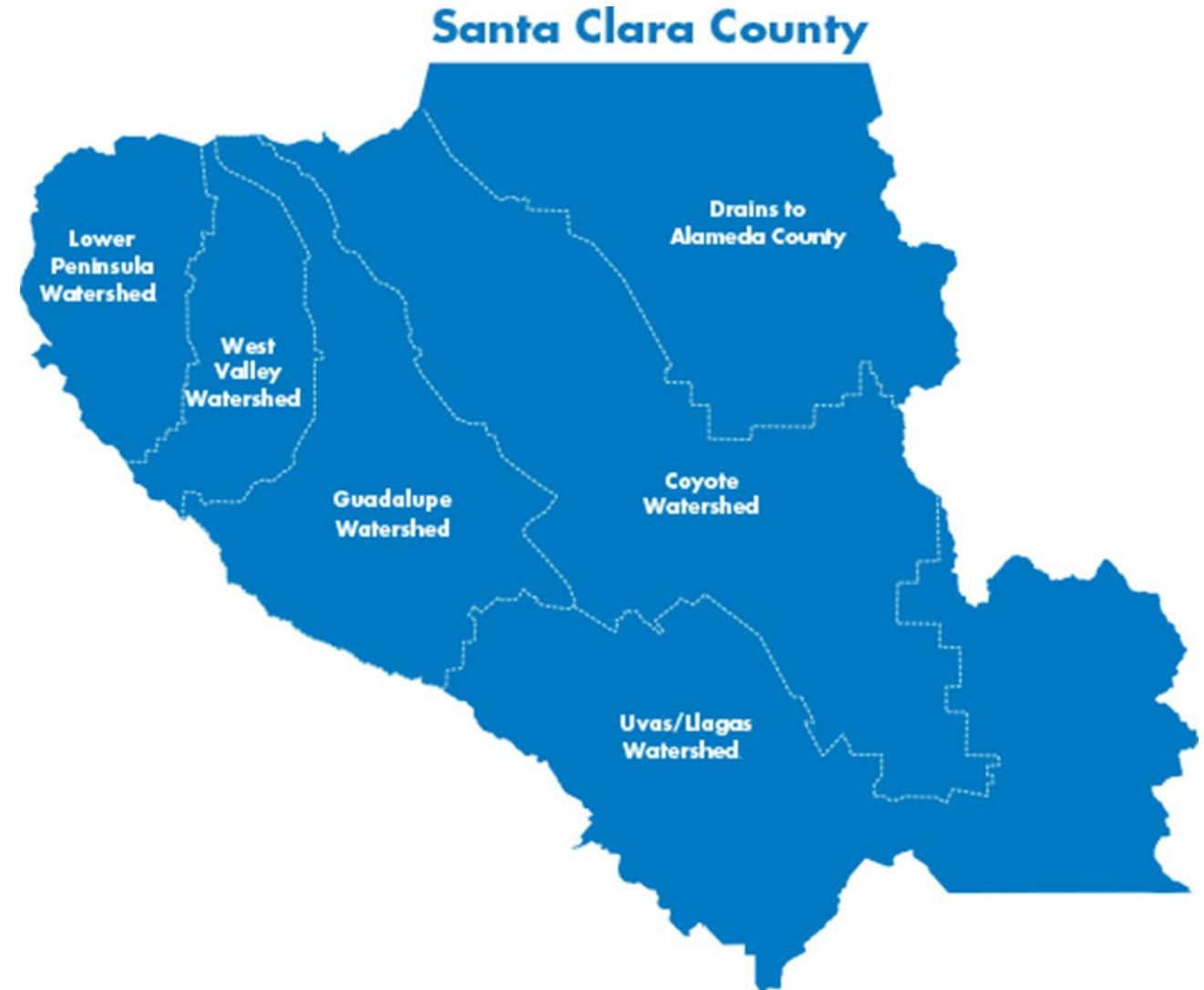


Amazing Fact

Santa Clara County rainfall does not supply enough water for our nearly

2 million residents

So how does Valley Water make sure that there's enough water for everyone?



In Santa Clara County we source water from outside our county



In a typical year:

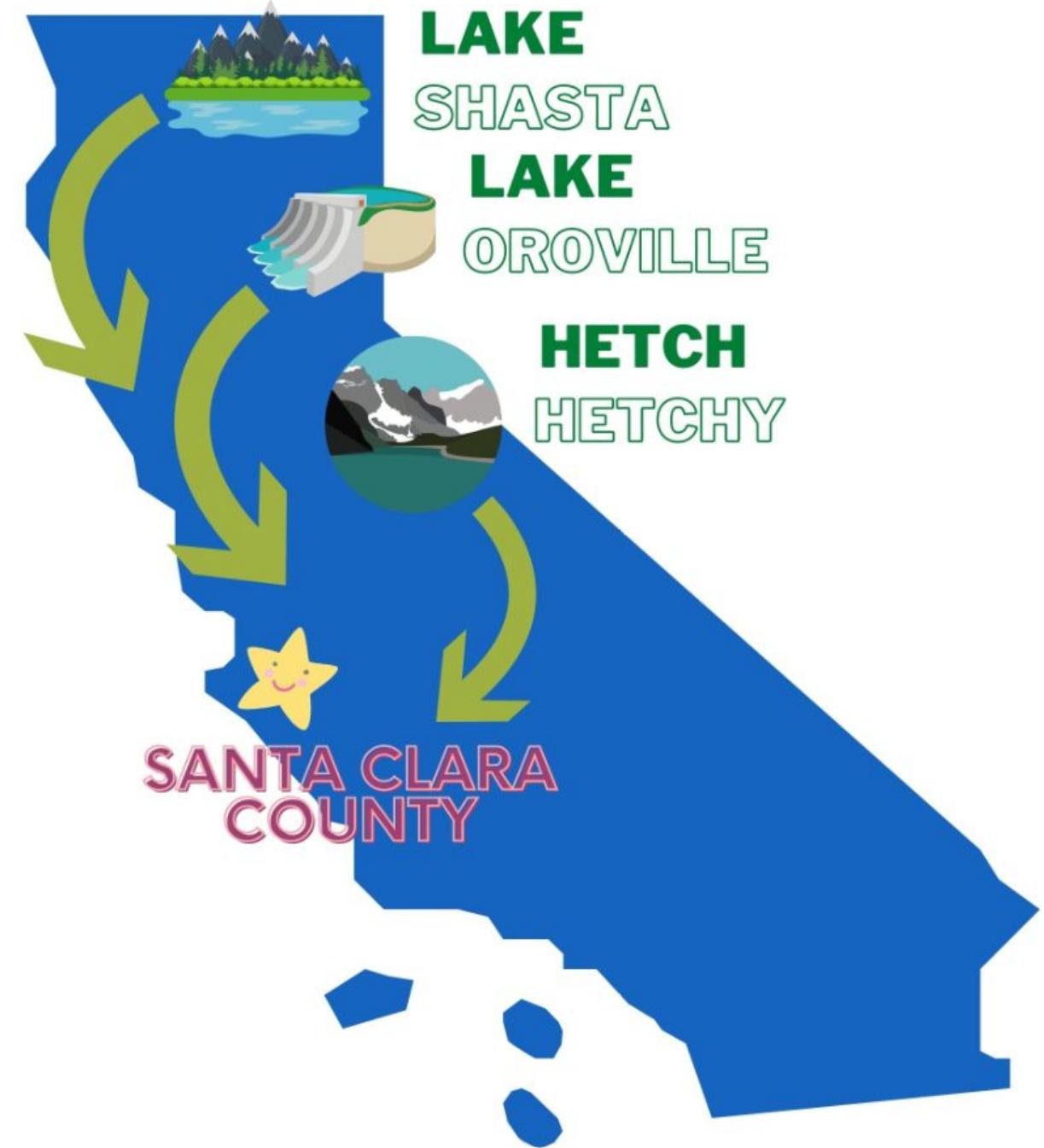
50% of our water is imported

30% local rainfall

15% water conservation

5% recycled water

Santa Clara County
sources water
from 3 large reservoirs

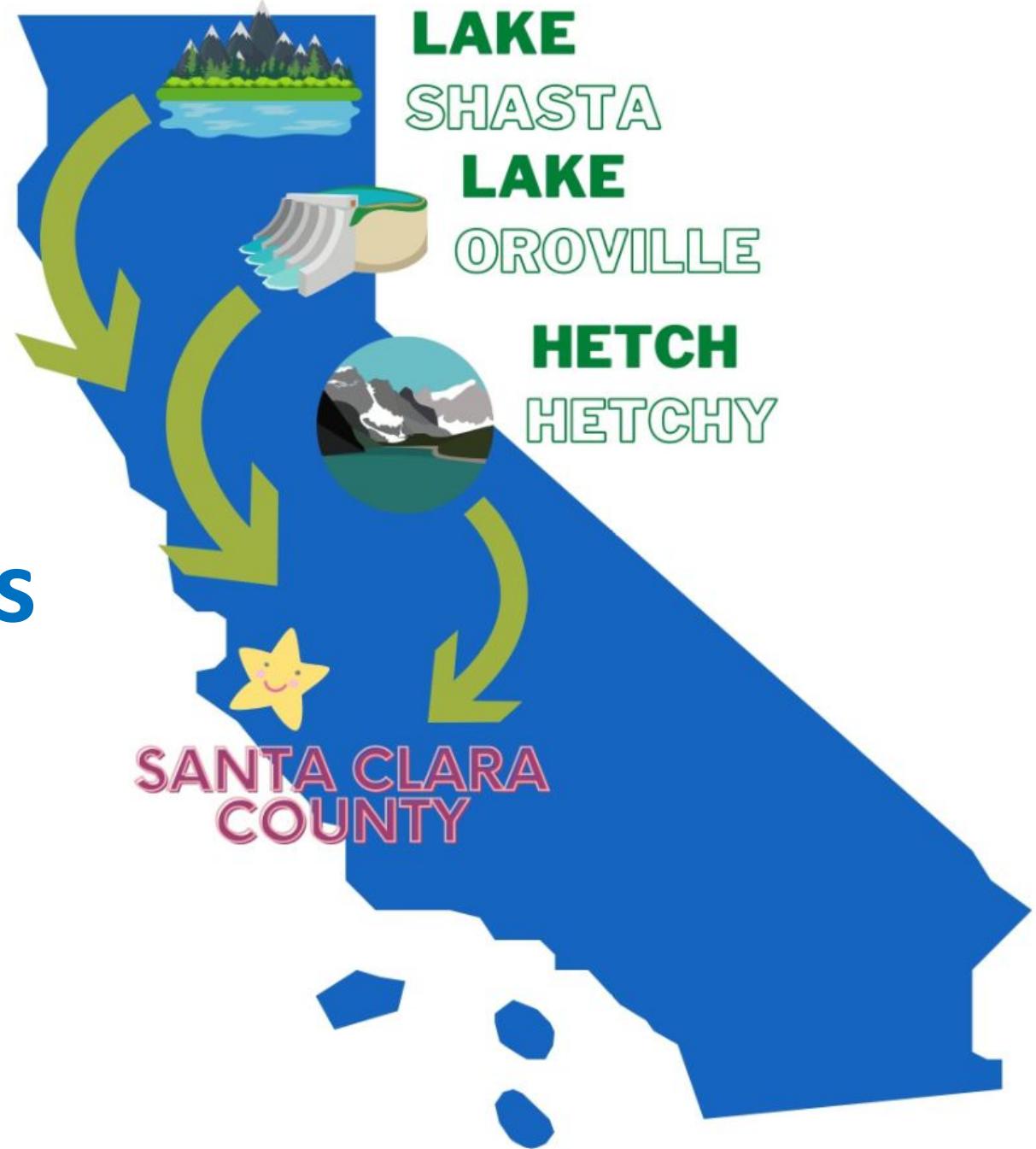


Sierra Snowpack: Nature's Water Reserve!

We rely on snow to provide water during dry months.
When snow melts, it fills our lakes, rivers, and reservoirs.



**Let's visit Santa Clara
County's 3 main sources
for imported water.**



Shasta Lake



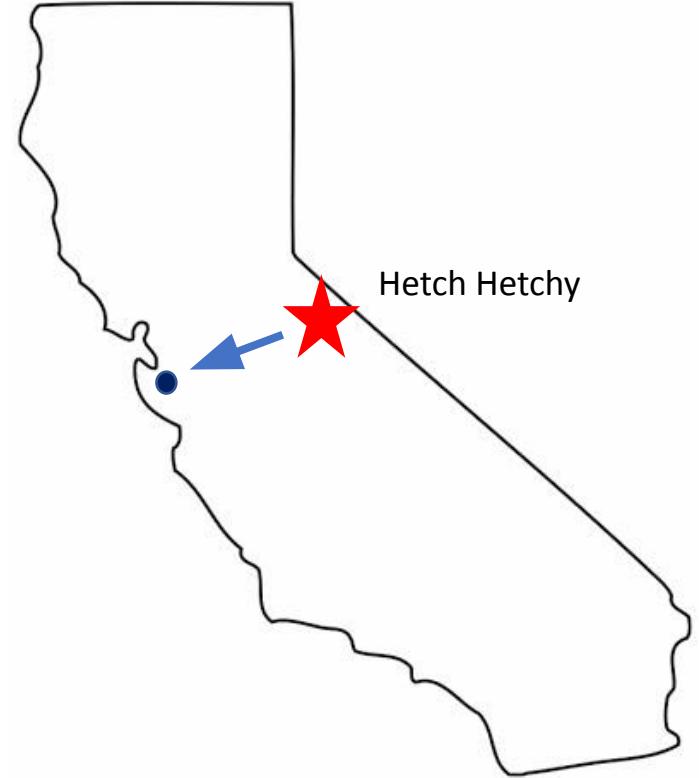
- Built between 1938-45
- The **largest reservoir in California**
- 8th tallest dam in the USA
- Lake fed by the **Sacramento River**

Lake Oroville



- Built between 1961-68
- **Tallest dam** in the US
- Fed by the Feather River, which connects to the Sacramento River.

Hetch Hetchy Reservoir



- O'Shaughnessy Dam completed in 1929
- Close to [Yosemite National Park](#)
- Fed by the Tuolumne River
- Flows west to San Francisco, diverted down South Bay Aqueduct to Santa Clara County

The Sacramento – San Joaquin River Delta



Water flows to the Delta and is transported, by **aqueduct**, throughout California.

How does that water get to Santa Clara County?

Aqueducts

Pipes, canals and channels
built by people, designed to
transport water.

Amazing Fact!
The **South Bay Aqueduct**
brings water to
Santa Clara County.



What happens to the imported water?



Santa Clara County has 10 Reservoirs



Anderson Reservoir

Total Countywide Storage: 169,000 Acre-Feet



Guadalupe



Almaden



Coyote



Lexington



Stevens Creek



Uvas



Chesbro



Calero



Vasona



10 Reservoirs



3 Water Treatment Plants



400 acres of groundwater
recharge ponds

Valley Water Infrastructure

The imported water gets sent to **reservoirs** and **water treatment plants**, **percolation ponds** and our **Water Quality Lab** before it reaches you!



1 Water Quality Laboratory

Let's talk about the rest of California!

Did you know
California has a
population of

39.25 million people?

Just like you, they all
need water every day!



Now that you know where your water comes from, let's test your knowledge!



Saving water is more important than ever

The drought has impacted water for everyone in California



Saving water is more important than ever.

How will you save water today?

Thank you!

Email us at

education@valleywater.org

Or mail us at

Education Outreach, Valley Water
5750 Almaden Expressway,
San Jose CA 95118





Water Supply Planning

Jing Wu, Ph.D

Senior Water Resources Specialist

March 23, 2022

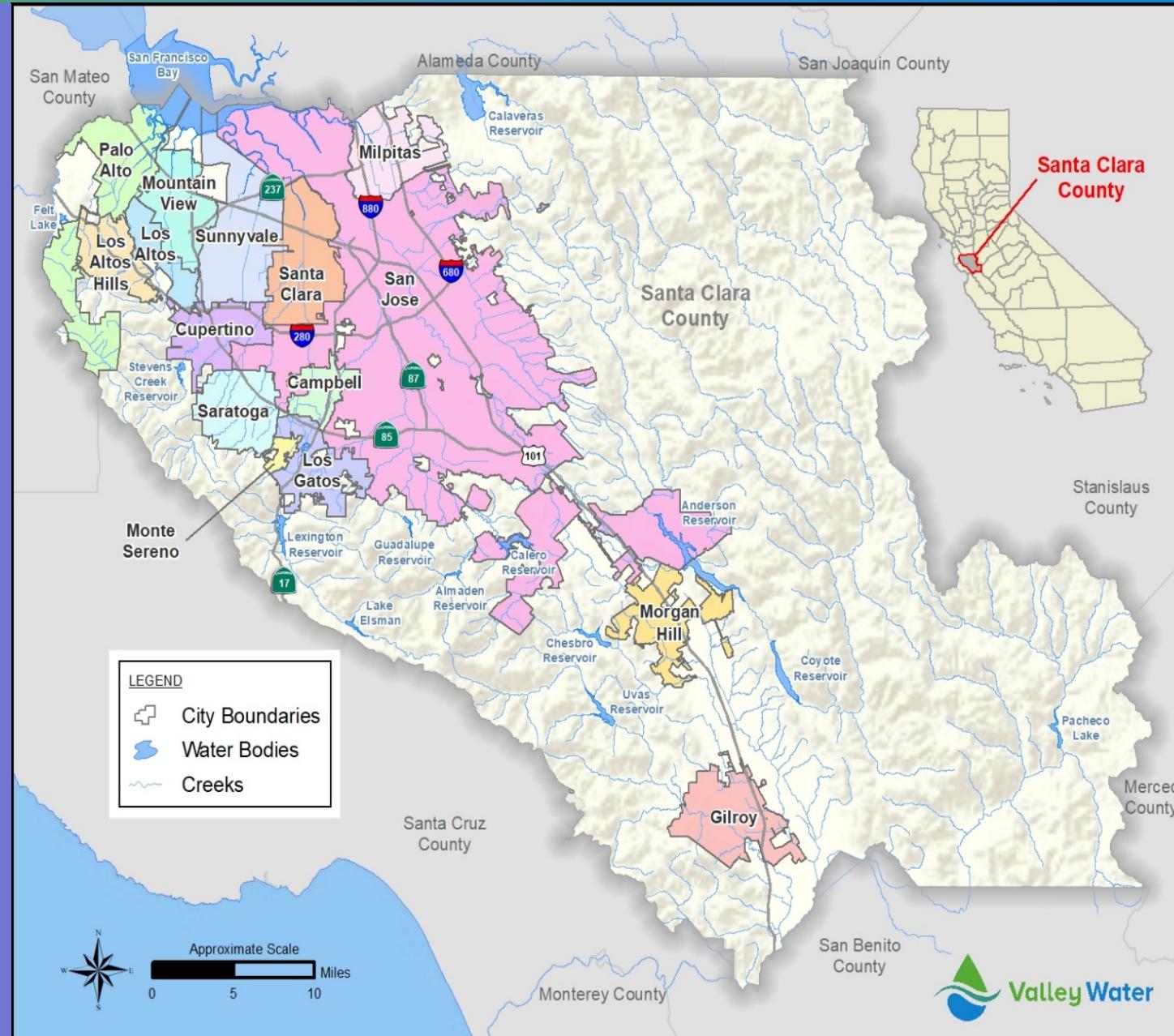
Serving Santa Clara County

1.9 million people

15 cities

13 water retailers

4,700 well owners



District map

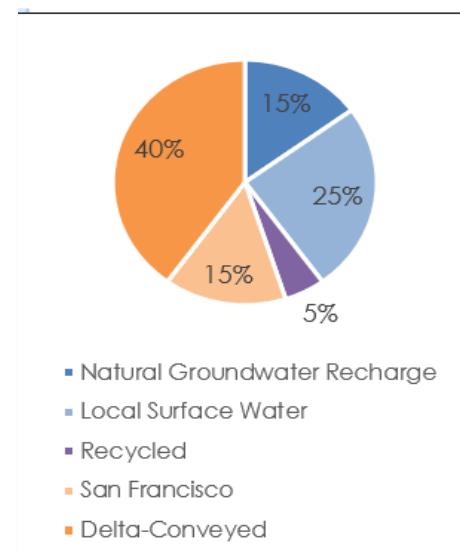
Water Supply Distribution



Legend

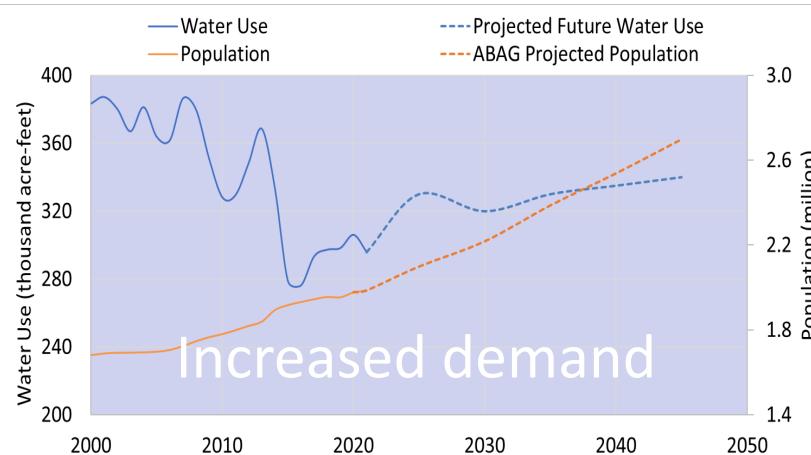
- Lakes, reservoirs, rivers, creeks, & bays
- Raw water pipeline
- Drinking water pipeline
- Pump Plants
 - 1. Vasona
 - 2. Coyote
 - 3. Pacheco
- Drinking Water Treatment Plants
 - A. Rinconada
 - B. Santa Teresa
 - C. Penitencia
- Silicon Valley Advanced Water Purification Center
- Anderson Hydroelectric Facility
- Local wastewater treatment plant and recycled water provider
 - a. Palo Alto
 - b. Sunnyvale
 - c. San Jose-Santa Clara
 - d. South County
- Recharge Ponds

10 reservoirs
3 pump stations
142 miles of pipelines
3 water treatment plants
1 water purification center
393 acres of recharge ponds
\$7.1B System Replacement Value



Goals of Water Supply Planning

Comprehensive evaluation of Valley Water needs and goals, and investment strategies to ensure long-term water supply reliability

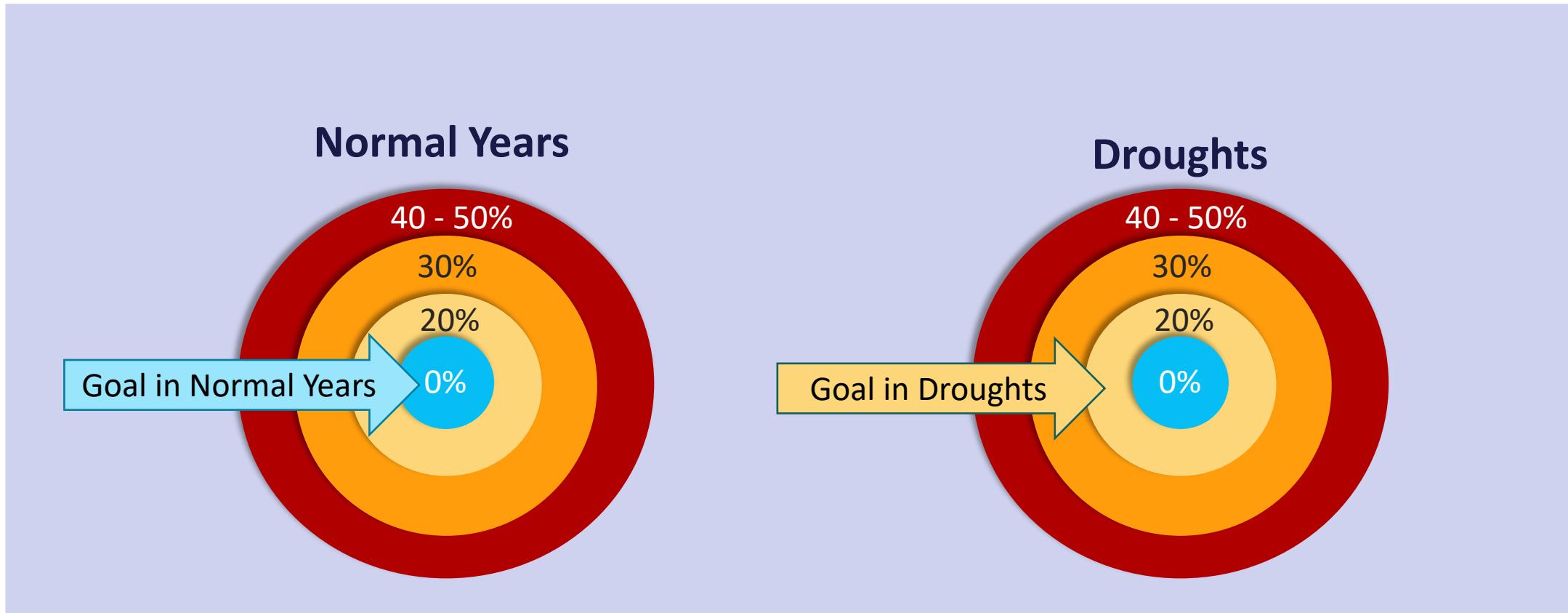


Water Supply Planning Process



Level of Service Goal

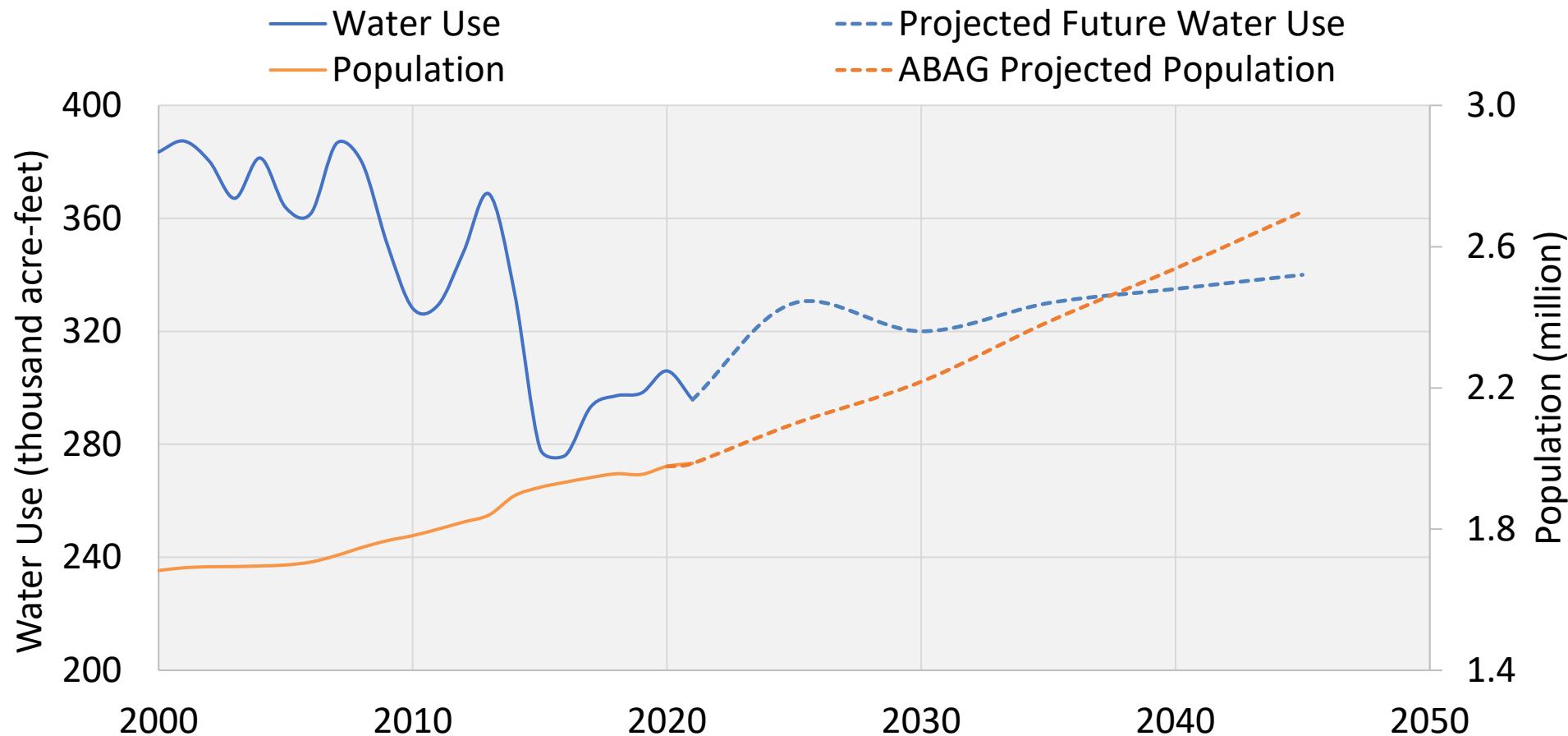
Not exceed a 20% water use reduction call during water shortages



Historic and Projected Water Use

(Including Water Conservation)

7



Develop Scenarios - Evaluation of Projects

8



Sustainability



Operational Flexibility



Yield



Local vs. Regional Supply



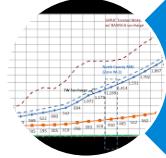
Environmental Impacts



Climate Change



Cost



Rate Impacts



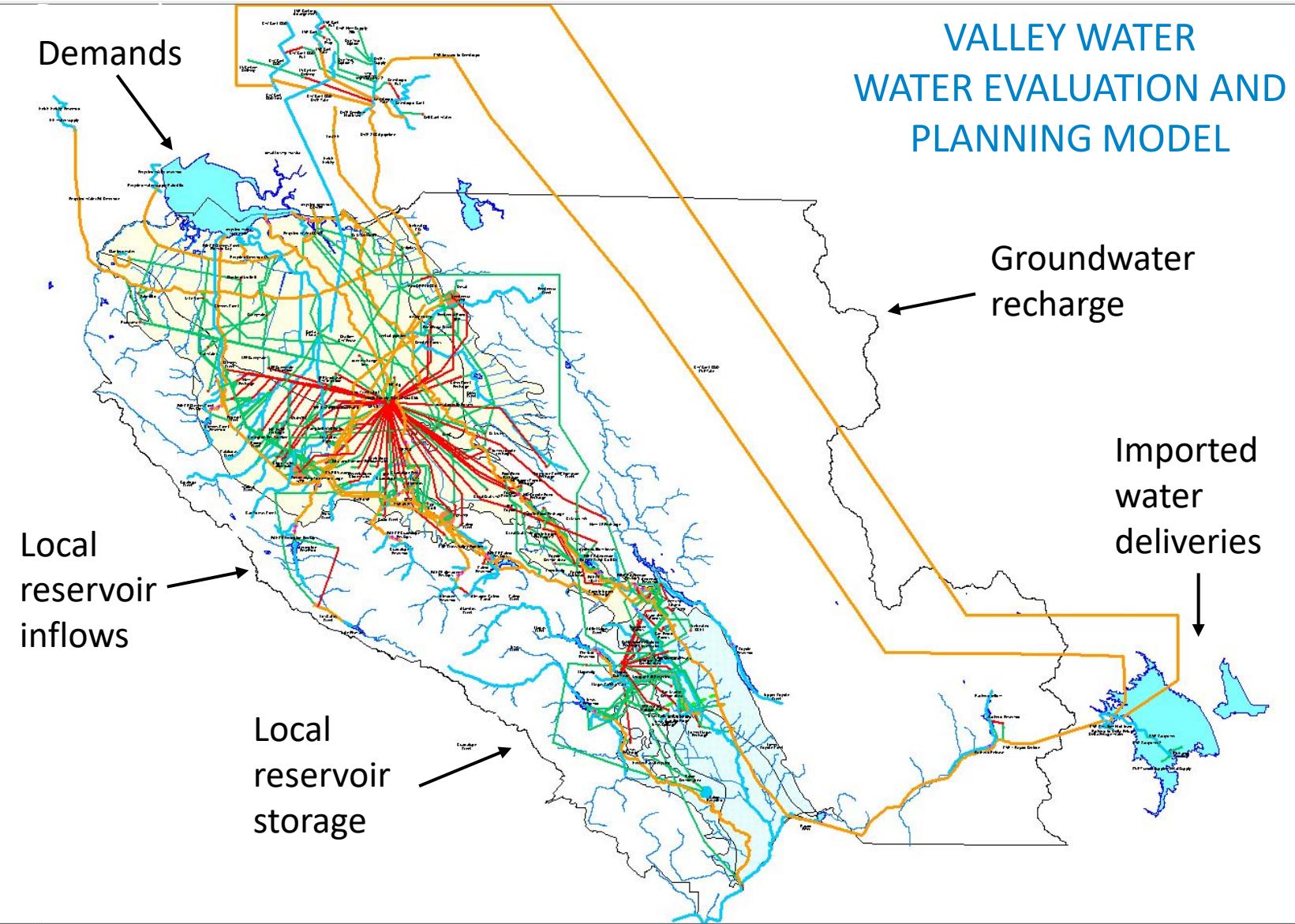
Regulatory Restrictions



And more...

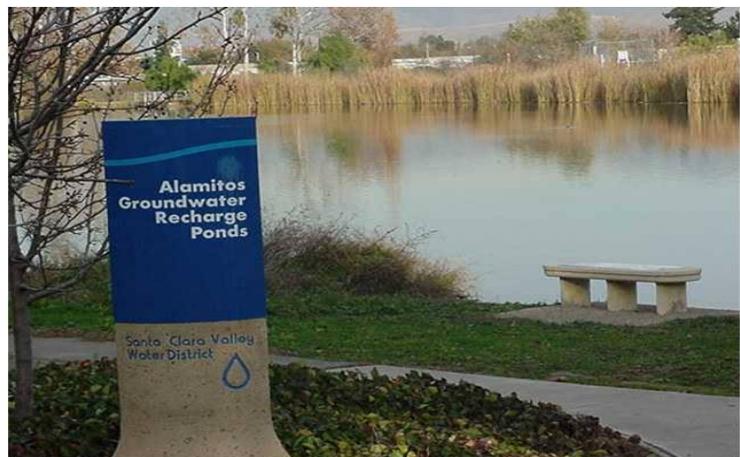
Develop Scenarios - Modeling

9



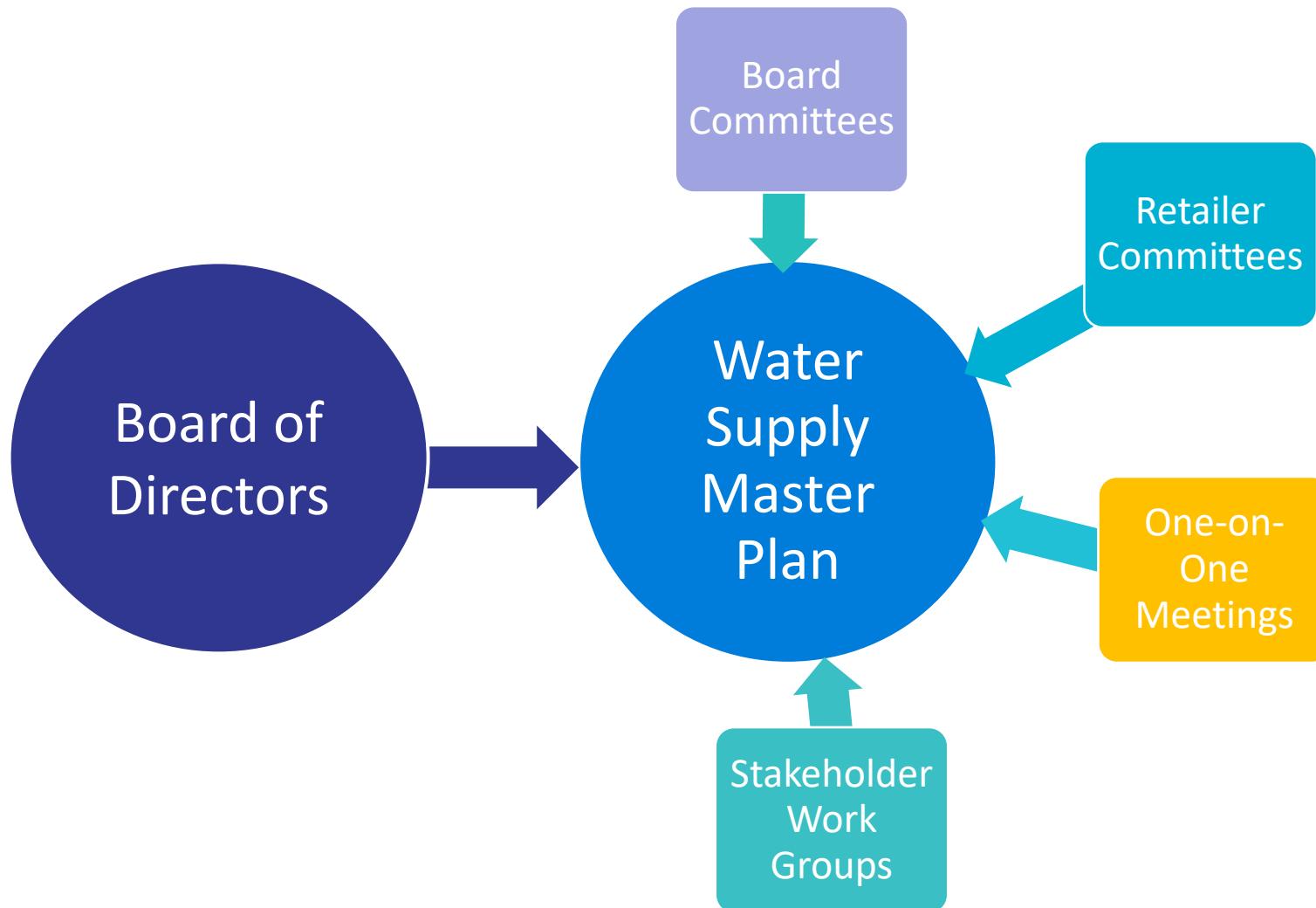
Develop Investment Strategies

10



Stakeholder Engagement

11



“Ensure Sustainability” Strategy



Secure

Capital Improvement
Program Projects
Delta Conveyance Project

Expand

Water Conservation
Stormwater Capture
Potable Reuse

Optimize

Pacheco Reservoir
Expansion
Transfer-Bethany
Pipeline
South County Recharge

Monitor and Adapt





Valley Water's Water Conservation Program

Presented by: Nick Simard, Water Conservation Specialist

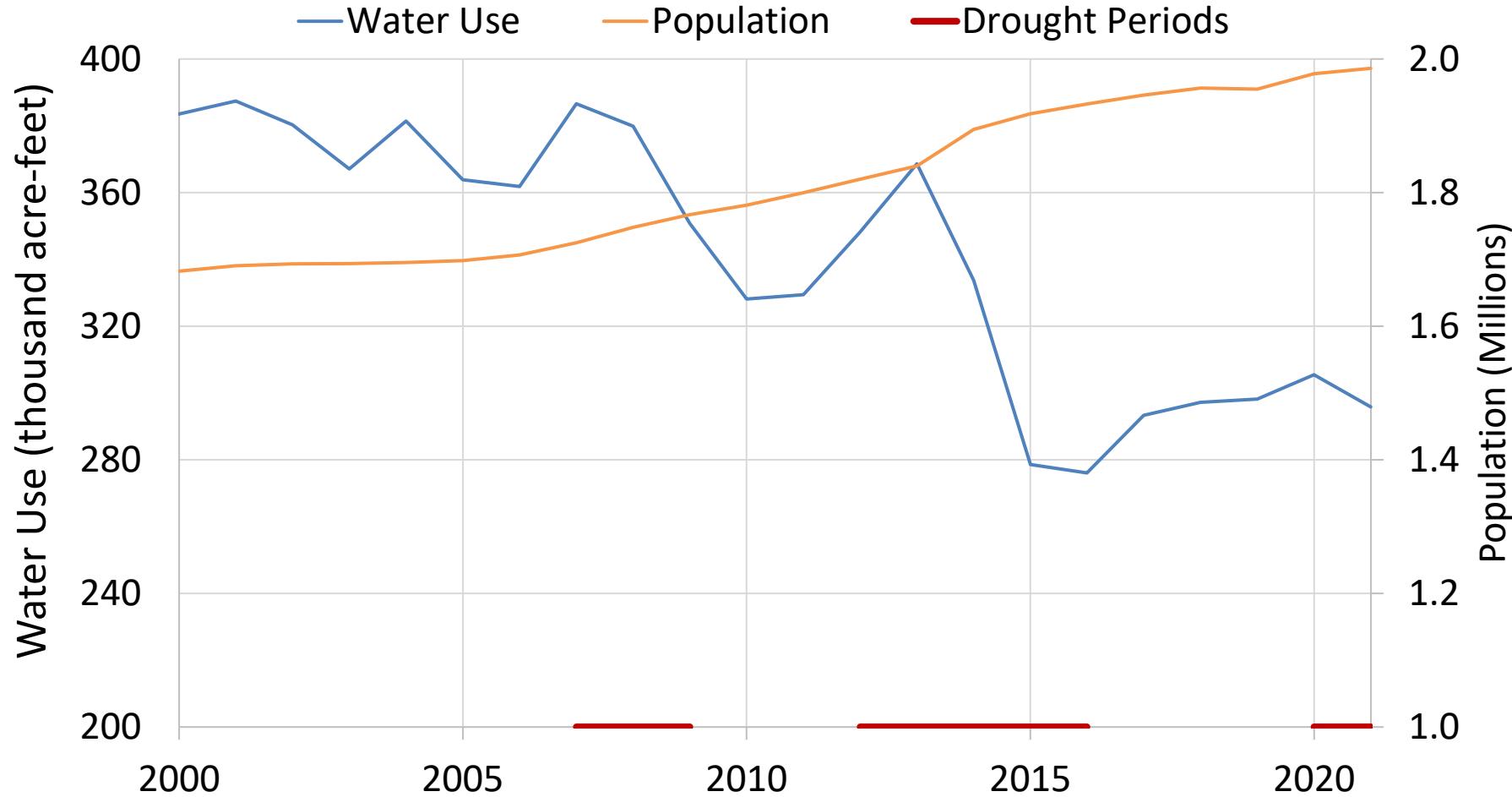
Why is water conservation important?

- Conservation **saves** you money!
- **Ensures** we'll have a reliable water supply
- **Reduces the amount we need to** import from the Sacramento Delta
- **Reduces pollution** from water runoff
- **Reduces greenhouse gas** emissions

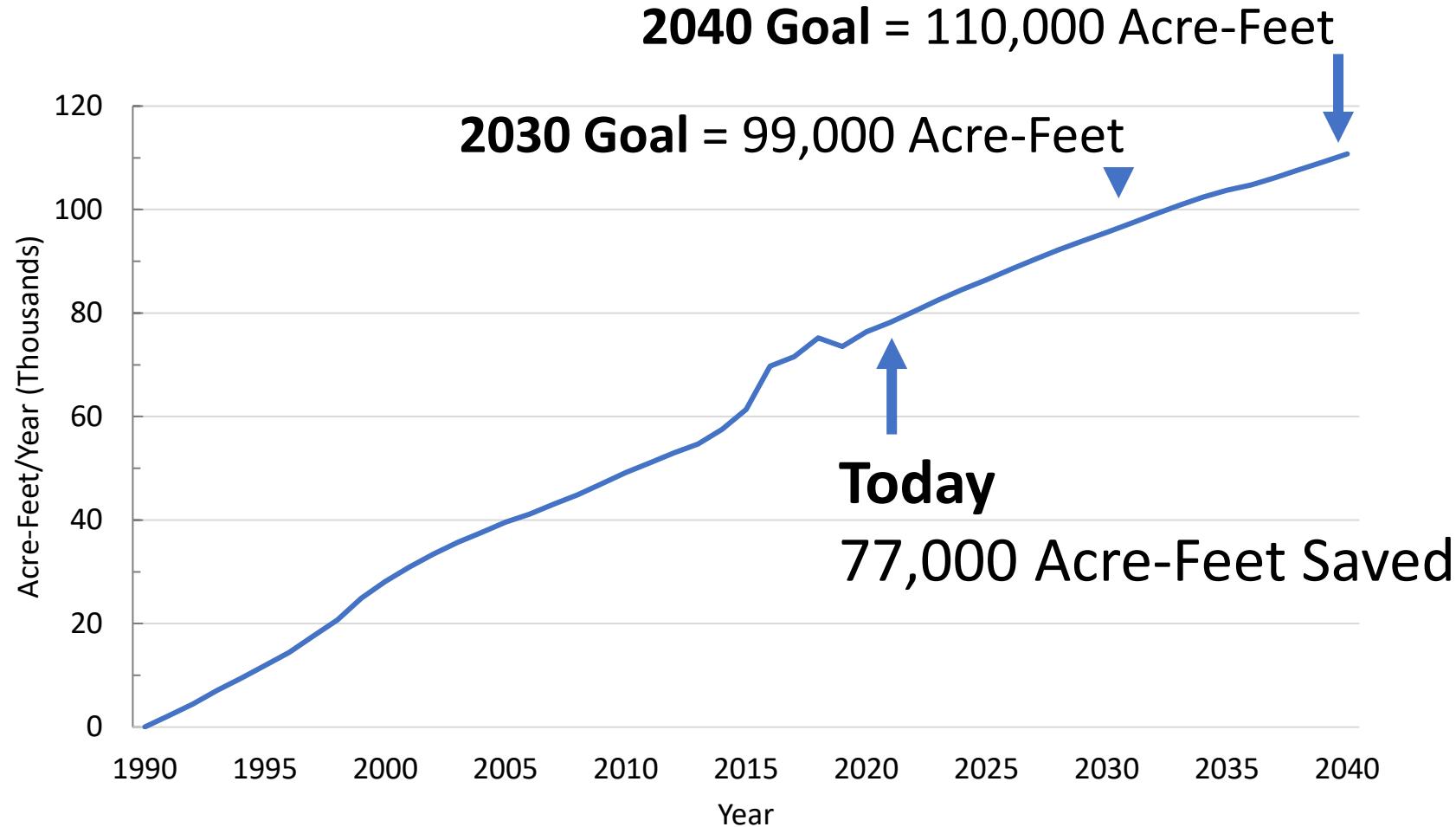


Success to Date

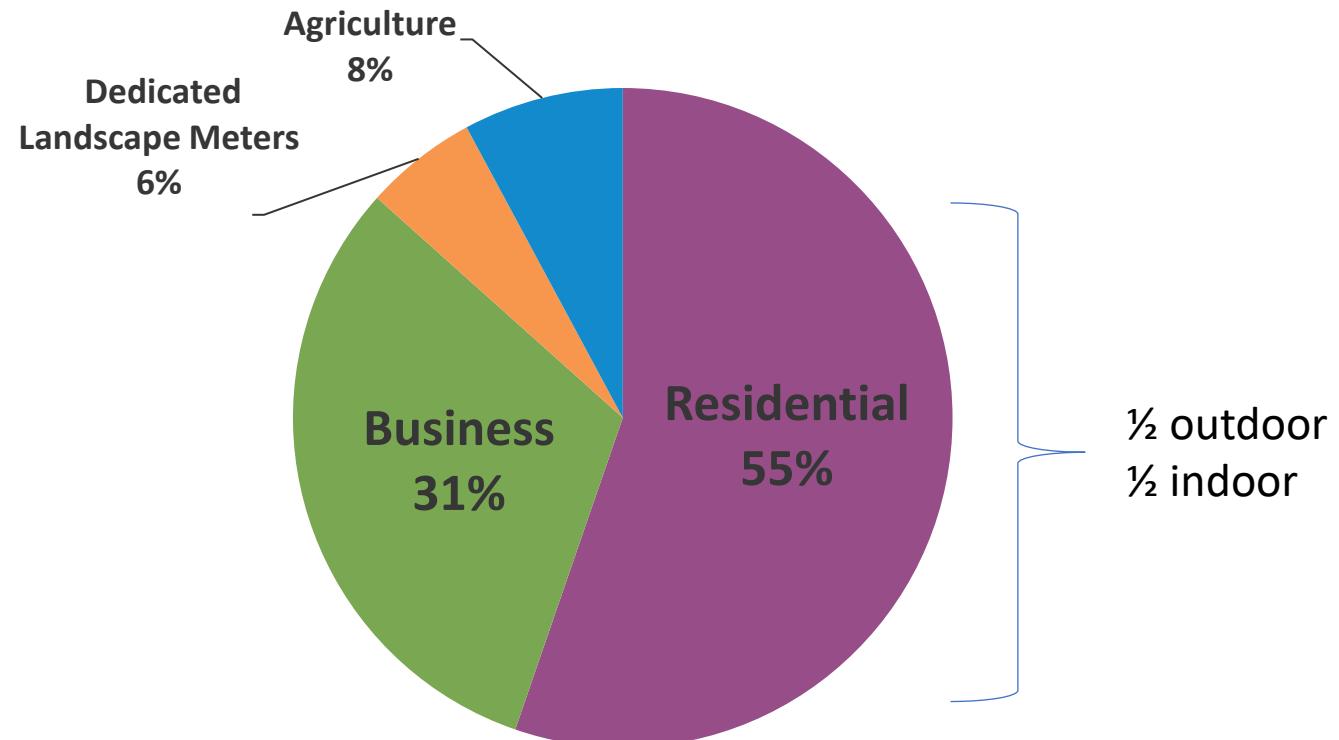
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Water Conservation Goals



Water Use in our County



Indoor Use – where does it go?



Source: Water Research Foundation, Residential End Uses of Water, Version 2. 2016

What Do We Offer?

Indoor Conservation

Free Fixtures



Submeter
Rebates



WET Rebates

Outreach and Education

Agriculture
Mobile Lab

DIY Kits

Outdoor Conservation



Landscape
Rebates



Graywater
Rebates

Water Waste

Outdoor
Surveys

Valley Water's Shopping Cart

- Provides free water saving devices, tools, and literature
- Packaged and shipped over 7,000 orders



Water Wise Survey Program

- **By appointment, an irrigation professional will come to your home and:**
 - Evaluate your irrigation system
 - Identify any problems or areas of improvement
 - Recommend upgrades and repairs
 - Tell you about rebates you may qualify for!
 - Helps prioritize projects that may qualify for rebates!



Large Landscape Program

Large CII/MF sites over ½ acre can participate – survey includes:

- System check & recommendations for onsite irrigation equipment
- Optional Water Budget to improve site-specific irrigation efficiency
- Recommendations for irrigation equipment upgrades
- Helps prioritize projects that may qualify for rebates!



Graywater Rebate Program

- Rebate is for clothes washers only – divert rinse water to landscape!
 - No permit required
 - Rebate is \$200 or \$400 per installed system
 - Residents must complete self-guided pre-inspection and receive application approval before installation
 - More info and great resources on our website!



Landscape Rebate Program

Landscape Conversions

- For any property in Santa Clara County with an existing lawn or pool area.
- Rebate is between *\$2.00 or \$4.00 per square foot for converted high water-use landscapes.*
- Rebate is for converting existing lawn or pool areas into drought tolerant landscapes per Valley Waters requirements

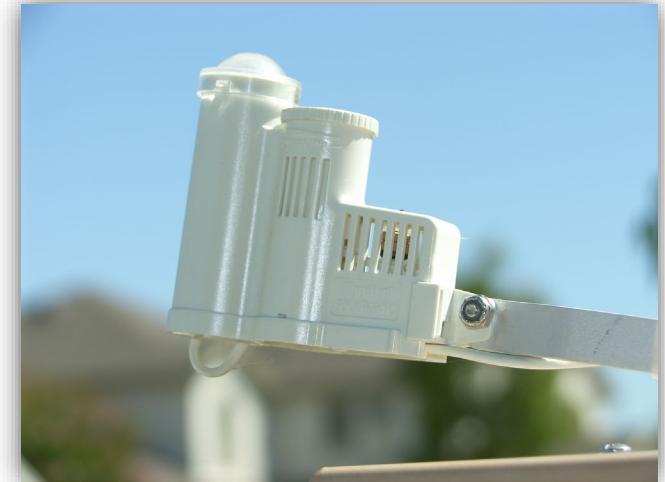


Landscape Rebate Program

Irrigation Equipment Upgrades

Projects Include:

- In-Line Drip Irrigation
- High-Efficiency Nozzles
- Dedicated Landscape Meter, Flow Sensors, and Hydrometers
- Weather-Based Irrigation Controllers
- Rain Sensors



Landscape Rebate Program

Rainwater Capture Rebates

Rebates include:

- Rain Barrels
- Cisterns
- Rain Gardens



Landscape Maintenance Consultation Program

For properties that have previously completed a Landscape Rebate Project

- Inspectors identify existing plant species on the property
- Review irrigation systems within the converted area
- Make recommendations for improving efficiency for the landscape's specific features.

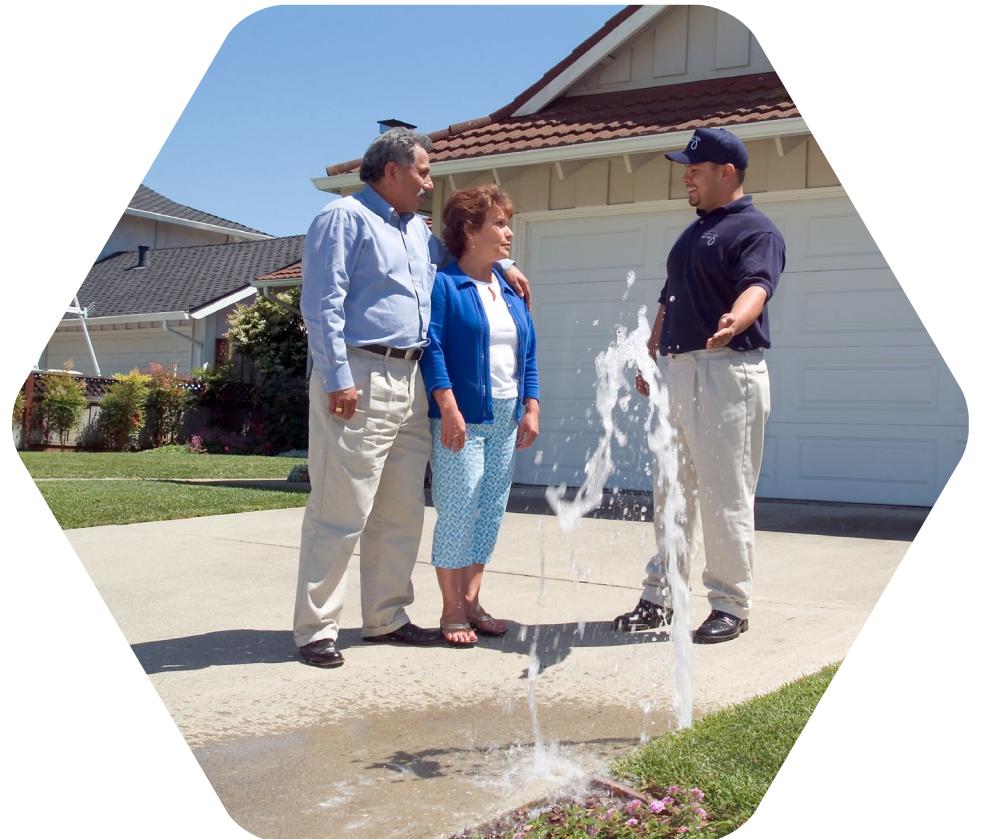


Stephen Rosenthal

Water Waste Inspections

Valley Water responds to reports of water waste throughout Santa Clara County

- They provide education and resources to help residents reduce water use and eliminate water waste
- You can report water waste by:
 - Calling (408) 630-2000
 - Email: WaterWise@valleywater.org
 - Report water waste by emailing WaterWise@valleywater.org or through Access Valley Water.



Commercial Rebate Programs

Water Efficient Technology (WET) Rebates & Submeter Rebate Program

- WET: For CII customers that make equipment changes to save water
 - Rebate amount is based on measured water savings
- Submeter: individual submeters are installed for properties with only one water meter
 - Estimated 10-30% water savings annually



Outreach and Education

Events: District attends or supplies materials to many community events each year

Summer Outreach Campaign: *coming soon*

Workshops: workshops offered for homeowners and landscape professionals

Literature: District offers a wide variety of educational literature

Website: www.valleywater.org





Thank you!

Any questions?

watersavings.org

Conservation@valleywater.org

Hotline: 408-630-2554

Access Valley Water,
download or look at the
bottom right corner of
valleywater.org

Sign up for our eNewsletter

[Stay up-to-date with Santa Clara Valley Water District](#)

Report water waste, homeless encampments, or other problems to
[Valley Water >>](#)

QUESTIONS

