



**Valley Water**

Clean Water • Healthy Environment • Flood Protection

# Water Supply Planning and Climate Change

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Senior Water Resources Specialist

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# Serving Silicon Valley

1.9 million people

15 cities

13 water retailers

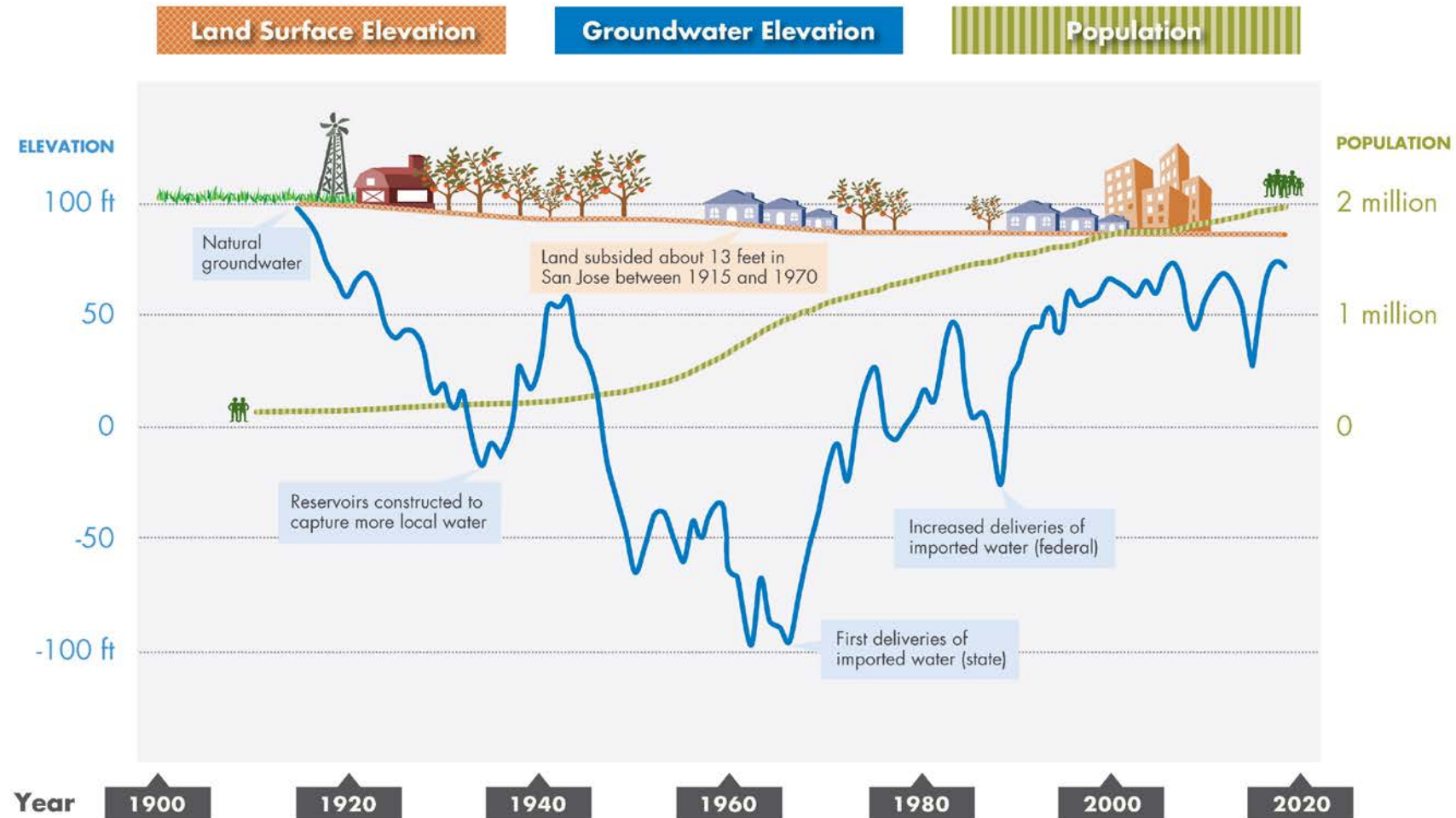
4,700 well owners



# Investing in Water Supply Reliability

## SANTA CLARA COUNTY GROUNDWATER AT-A-GLANCE

*a graphic representation not intended as a technical exhibit*



# Water Supply Planning Process

## 1. ASSESS NEEDS AND GOALS



## 2. DEVELOP SCENARIOS

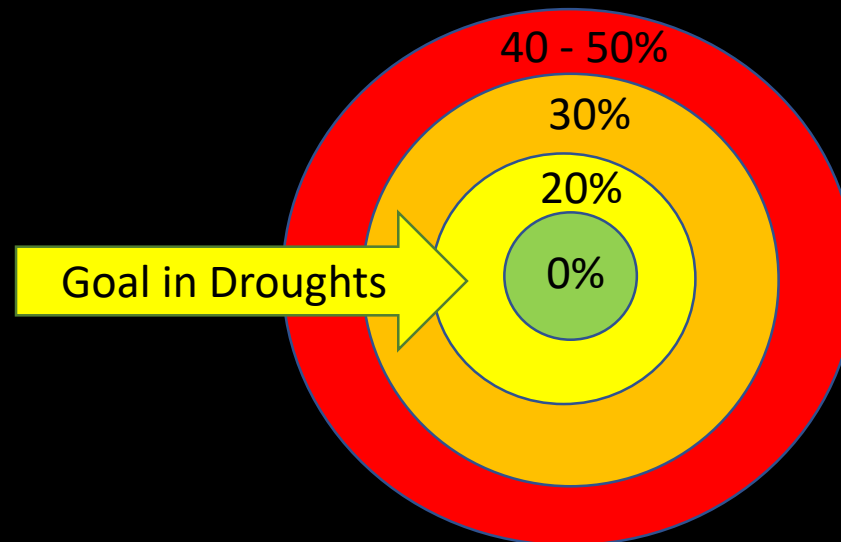
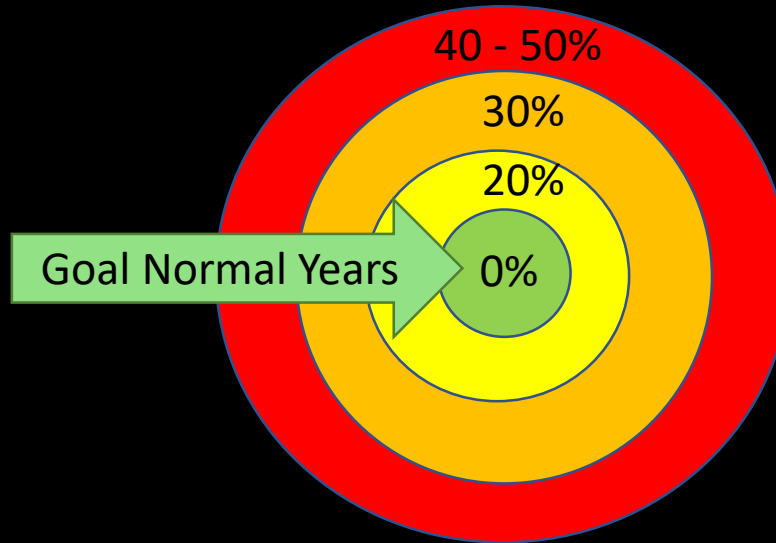


## 3. PLAN, INVEST AND MONITOR

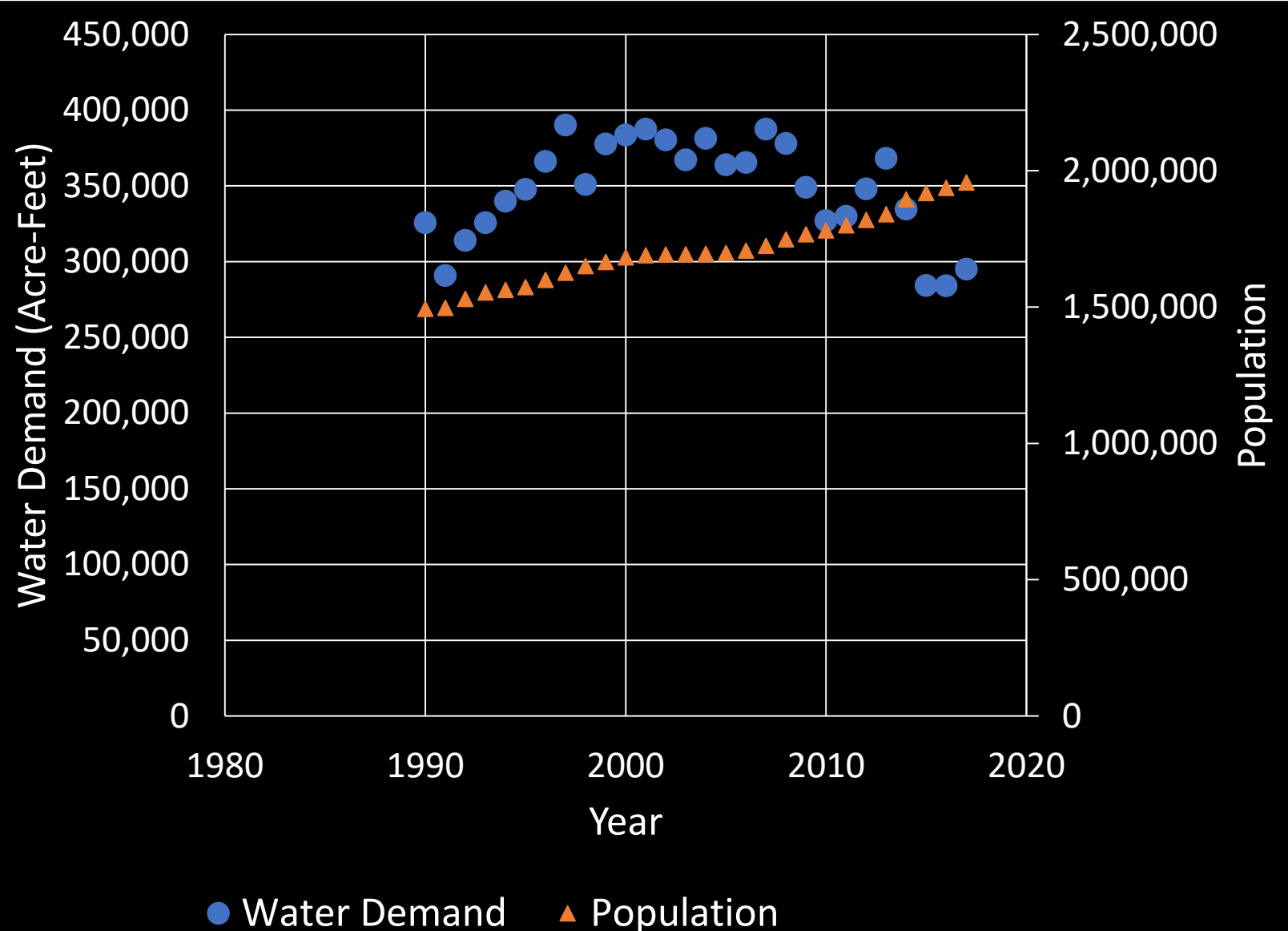




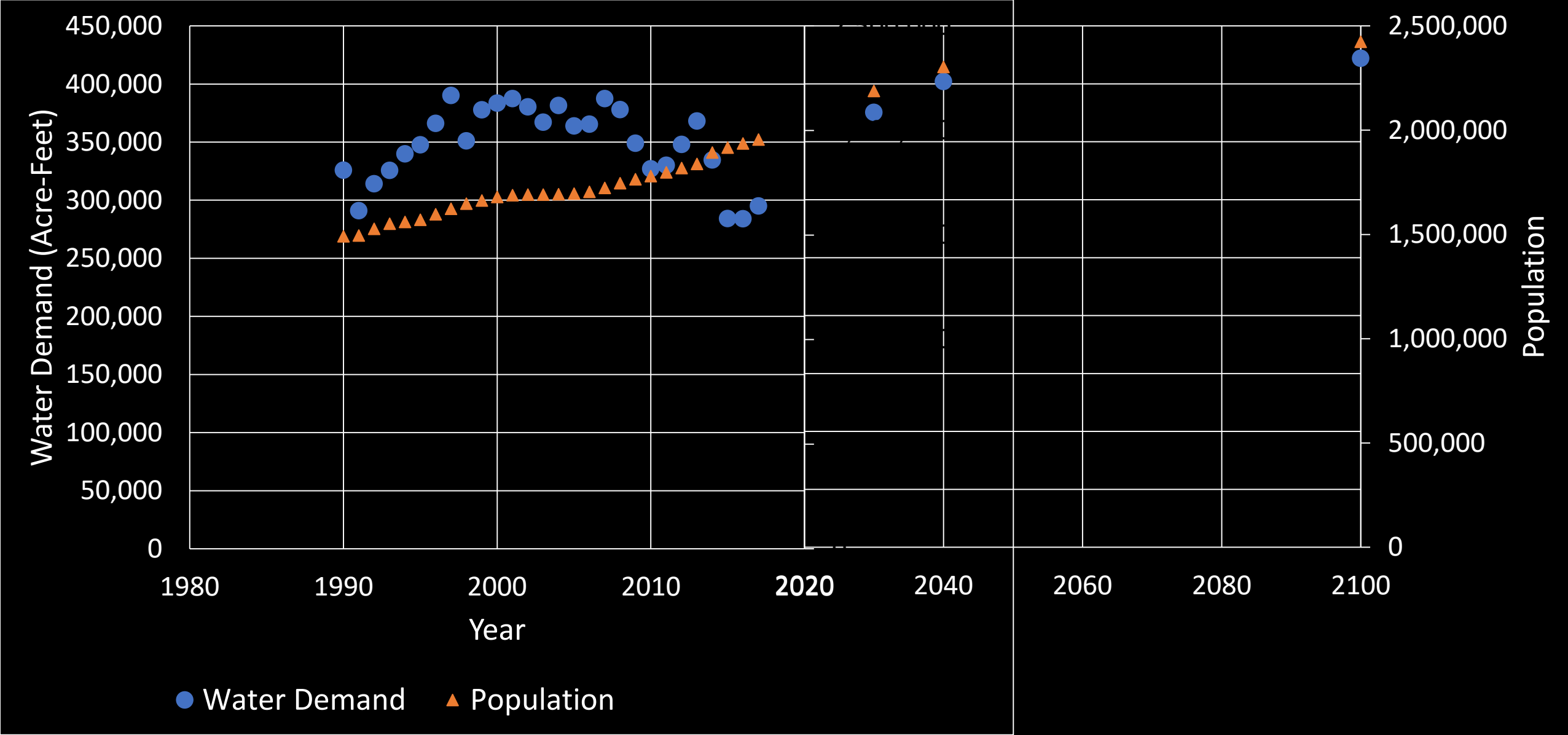
# Assess Needs and Goals



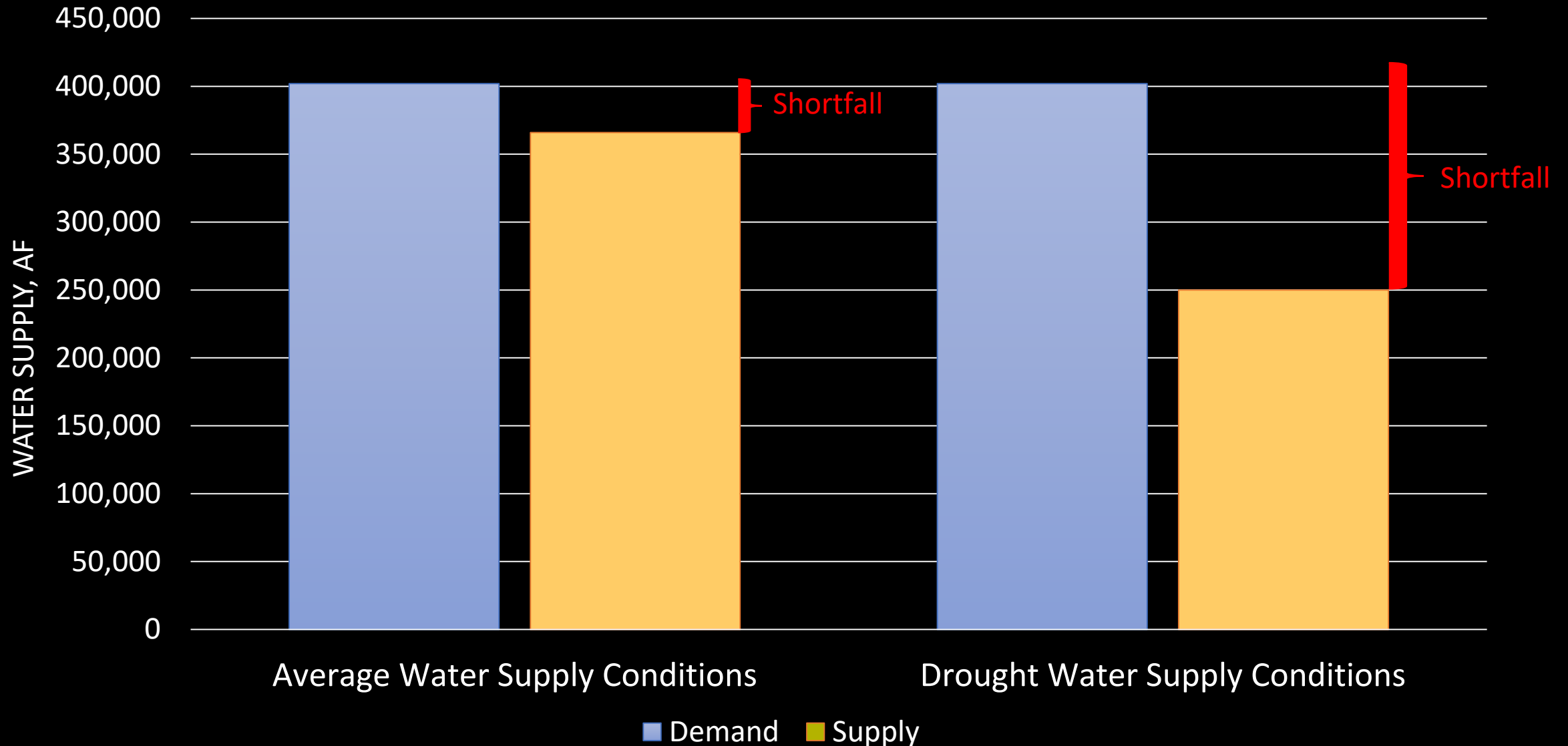
# Historic and Projected Water Demand and Population



# Historic and Projected Water Demand and Population



# Droughts are the greatest challenge





# Water Supply Planning Process

## 1. ASSESS NEEDS AND GOALS



## 2. DEVELOP SCENARIOS



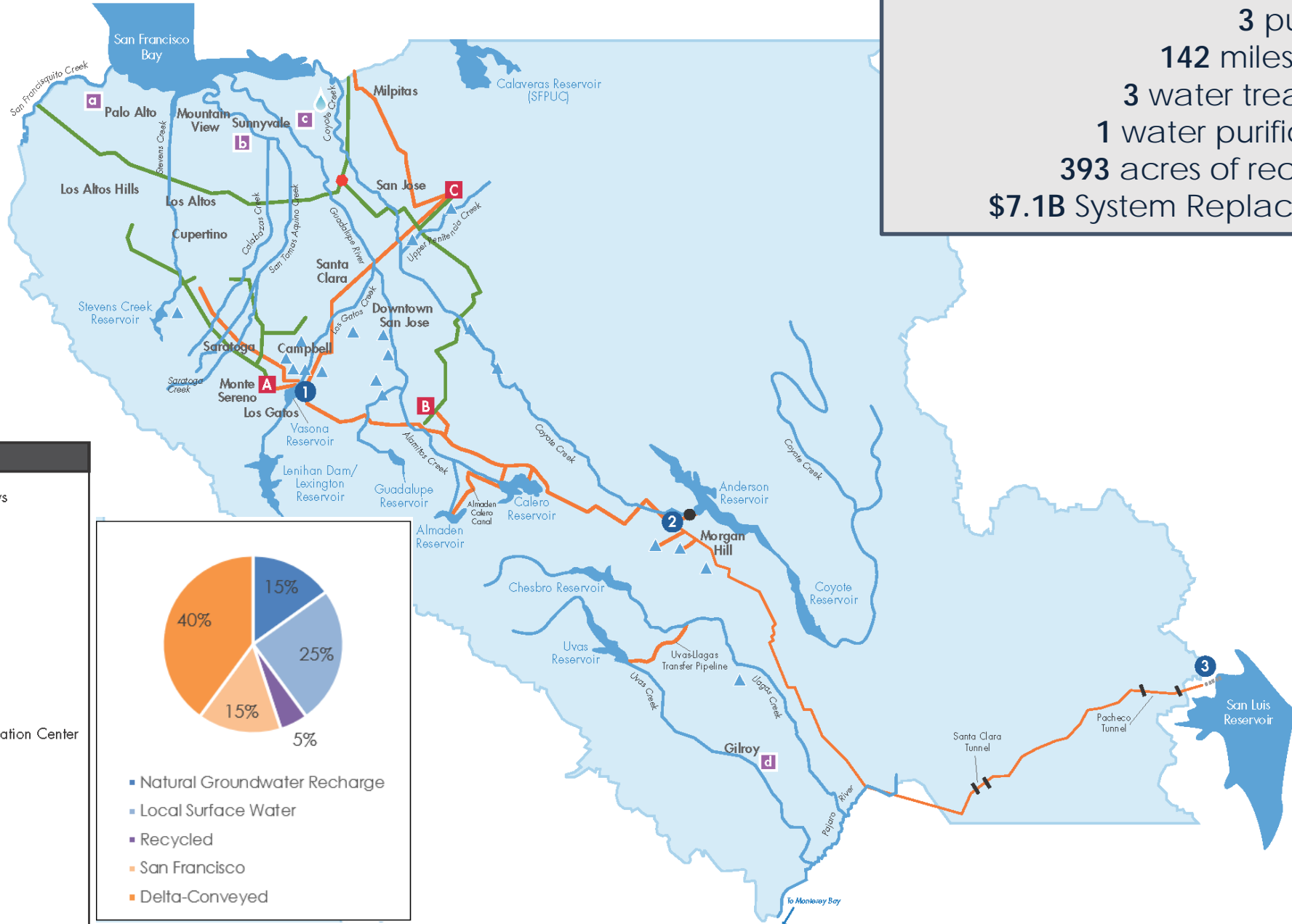
## 3. PLAN, INVEST AND MONITOR



# District map

## Water Supply Distribution

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



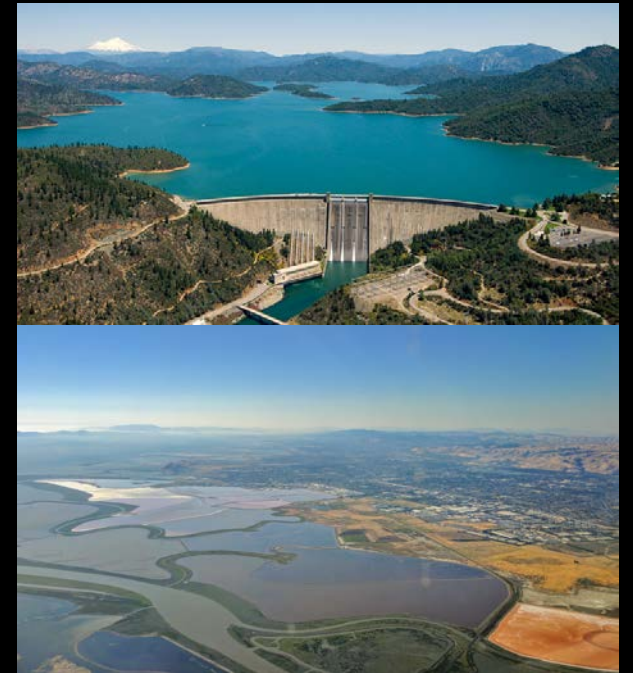
# BOARD DIRECTION (SOME EXAMPLES)



**Reduce costs**

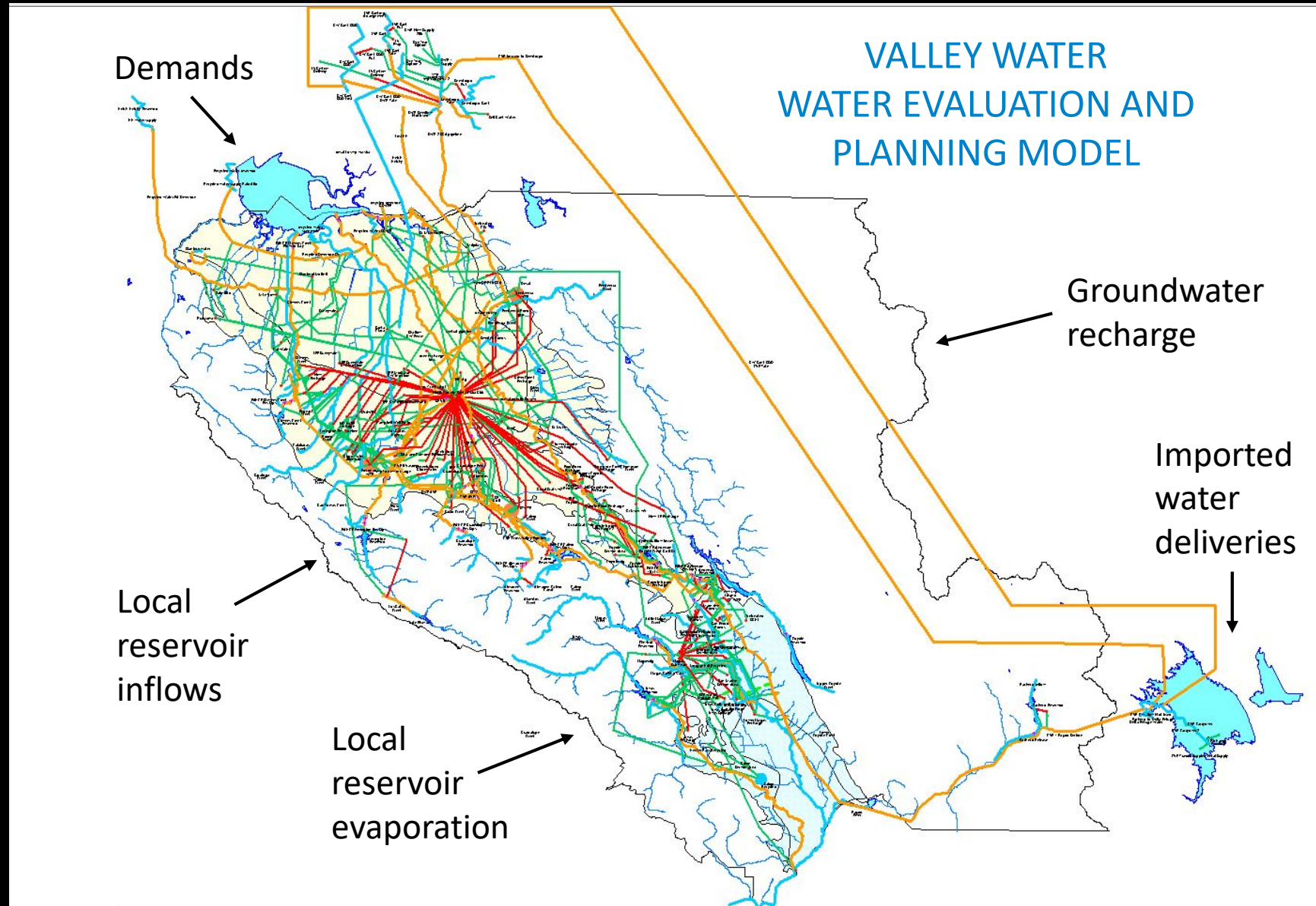


**Diversify  
supplies**



**Reduce reliance on  
the Delta**

# Develop Scenarios

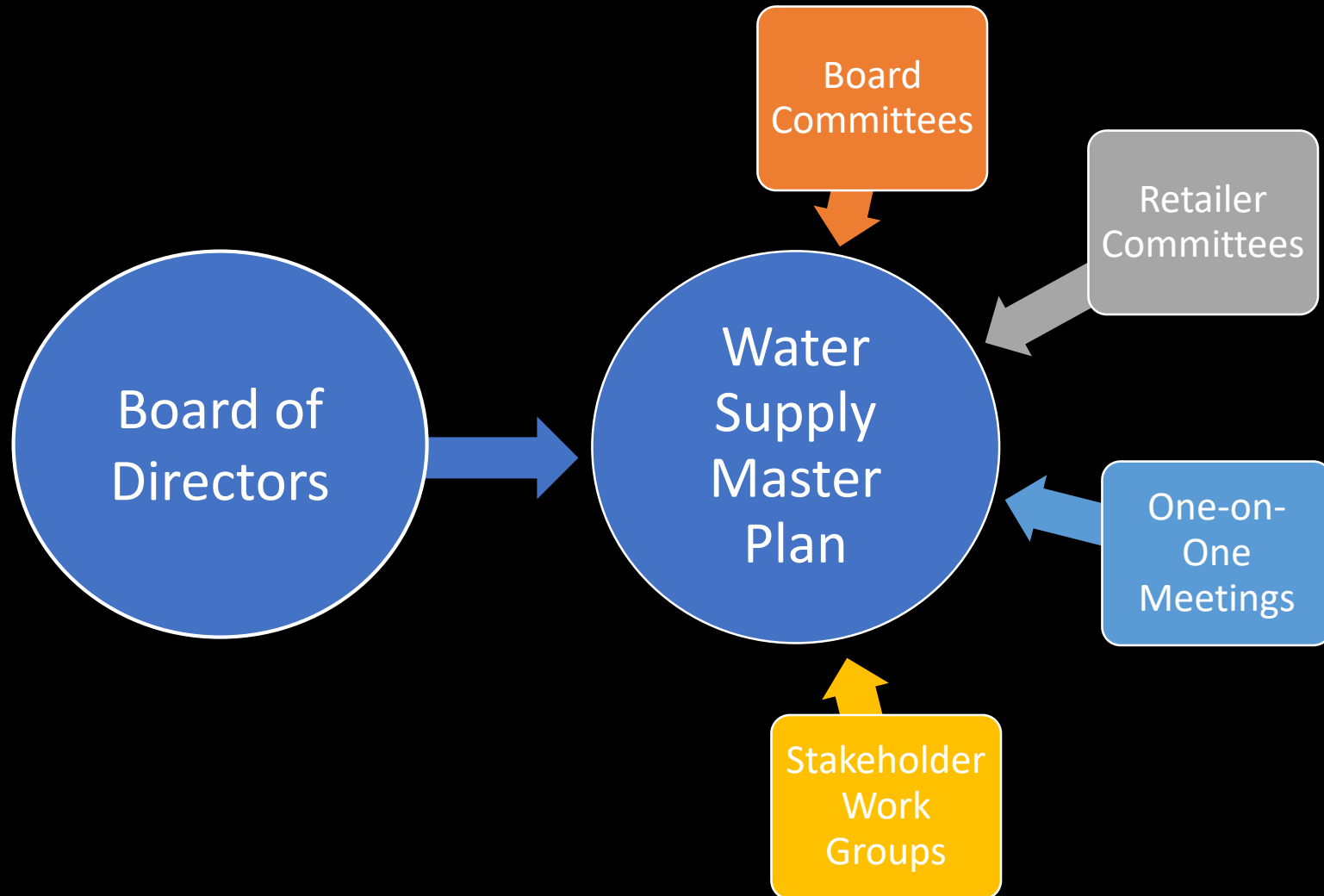




# Develop Investment Strategies



# Water Supply Planning Stakeholder Engagement



# Water Supply Planning Process

## 1. ASSESS NEEDS AND GOALS



## 2. DEVELOP SCENARIOS



## 3. PLAN, INVEST AND MONITOR





# Ensure Sustainability Strategy



Secure  
existing  
supplies and  
infrastructure



Expand  
conservation  
and reuse



Optimize the  
system

## Projects Approved for Planning

### 1) Secure existing supplies and infrastructure

- Delta Conveyance Project
- Dam seismic and pipeline retrofits

### 2) Expand conservation and reuse

- Potable reuse
- Conservation and stormwater capture projects

### 3) Optimize the system

- Pacheco Reservoir
- Transfer-Bethany Pipeline

# Develop Scenarios



# Water Conservation

Karen Koppett

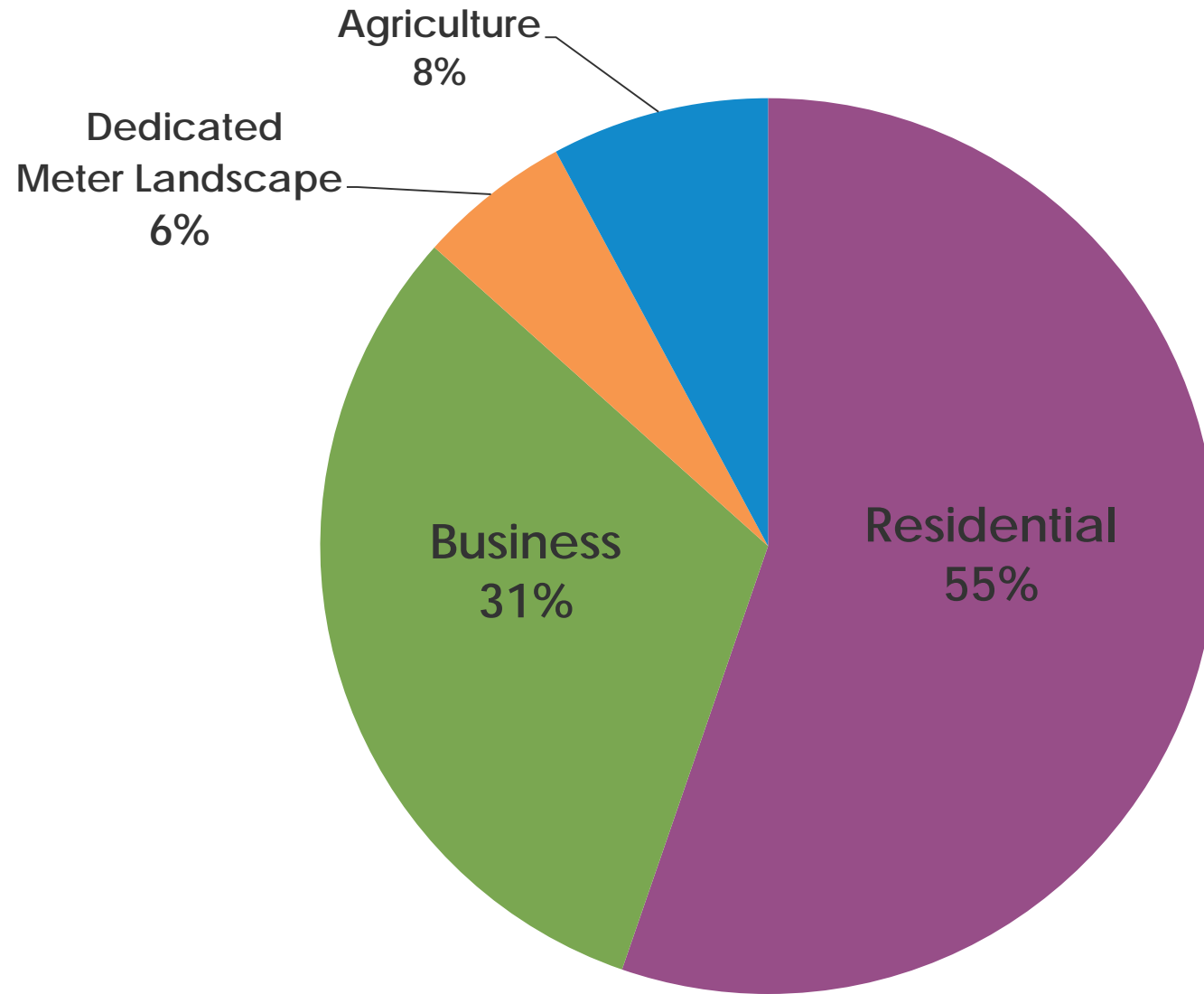
Senior Water Conservation Specialist



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# Water demands in Santa Clara County



# Why is Water Conservation Important?

- Increases long-term water supply reliability
- Assist in meeting short-term demands
- Reduces reliance on Delta
- Saves energy
- Reduces greenhouse gas emissions
- Reduces urban runoff



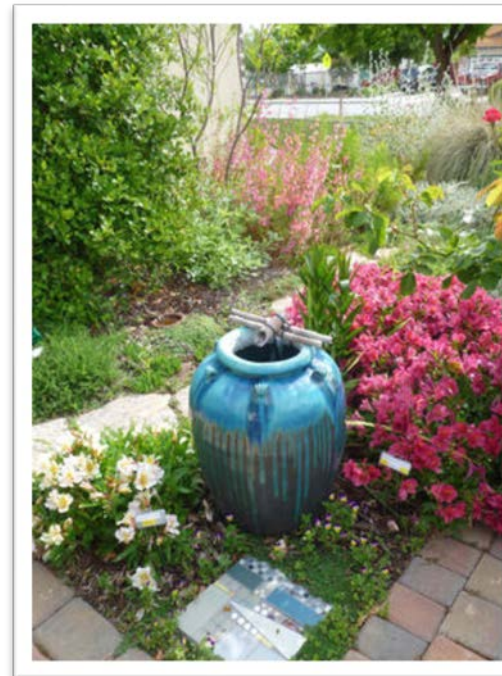


# We're Here to Help!!



# Water Conservation Programs

- ▶ **Residential Programs**
- ▶ **Landscape Programs**
- ▶ **Commercial, Industrial, Institutional Programs**
- ▶ **Agricultural Programs**
- ▶ **Outreach/Education**
- ▶ **Tools and videos on our website.**





# Programs for Residents

- Water Wise Survey Program
  - Water Wise Outdoor Survey Program
  - Do It Yourself Indoor Survey Kit
    - Free Low Flow Showerheads and Aerators, Toilet Flappers, etc.
- Graywater Rebate Program
- Landscape Rebate Program



# Water Wise Survey Program - Indoor

- For Residents in Santa Clara Co.
  - San Jose Water Co. customers have their own program
- We send a free Do-It-Yourself Indoor Water Use Survey Kit
  - Plastic flow rate bag
  - Toilet leak detection tablets
  - Booklet with instructions and survey to fill out (also available in Spanish and Vietnamese). How-To Videos online too!
- Send us the completed survey, and we'll send you:
  - Showerhead
  - Aerator
  - Toilet Flapper



# Water Wise Survey Program - Outdoor

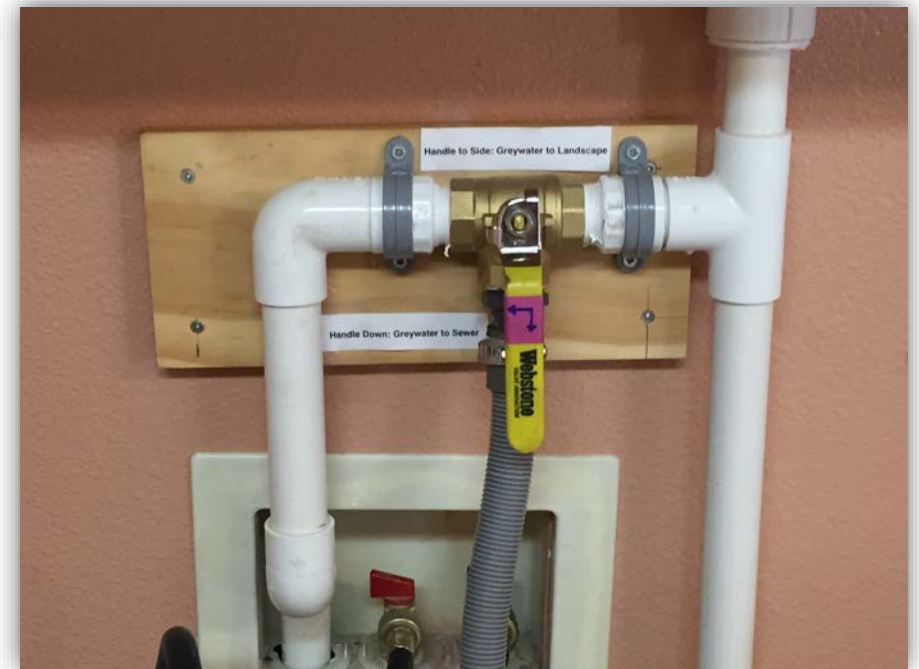
- For Residents in Santa Clara Co.
  - San Jose Water Co. customers have their own program
  - Large CII/MF sites over ½ acre can participate in our **Large Landscape Survey Program**
- By appointment, an irrigation professional will come to your home and:
  - Evaluate your irrigation system
  - Identify any problems or areas that could be improved
  - Recommend upgrades and repairs
  - Tell you about rebates that you may qualify for.





# Graywater Laundry to Landscape Rebate

- For Residents in Santa Clara Co.
- Rebate is for clothes washers only – divert rinse water to your landscape. **No permit required.**
- Rebate is \$200 per installed system
  - City of Cupertino and San Jose Muni Water customers add funding so rebate there is \$400
- Residents must complete a self-guided pre-inspection and receive application approval before installing a system.
- There's more info and great resources on our website



# Landscape Rebate Program

## Landscape Conversion Rebate

- For sites (residential, commercial, etc.) in Santa Clara Co.
- Rebate is \$1.00 per sq. ft. of converted high water-use landscape
  - In cost sharing areas, the rebate is \$2 per sq ft
    - Palo Alto, Morgan Hill, Cupertino, San Jose Municipal Water
- Open to residents & businesses

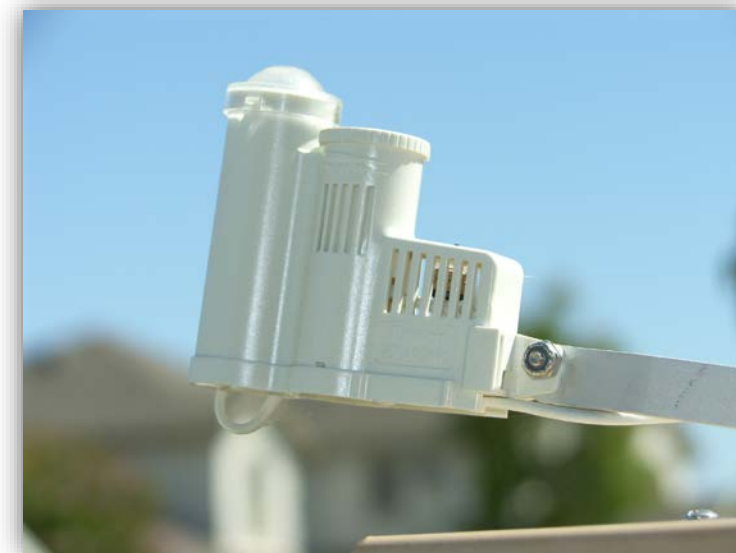


# Landscape Rebate Program

## Irrigation Equipment Upgrade Rebate

- For residential & commercial sites in Santa Clara Co
- Rebates include:
  - In-line Drip Irrigation = \$0.25 per square foot
  - High-Efficiency Nozzles = Up to \$5 per nozzle
  - Rain Sensor = Up to \$50 per sensor
  - Dedicated Landscape Meter, Flow Sensors, and Hydrometers = Up to \$1,000 per
  - Weather Based Irrigation Controller
    - 1-12 Stations = Up to \$300 per controller
    - 13-24 Stations = Up to \$1,000 per controller
    - 25 Stations or more = Up to \$2,000 per controller

***More Irrigation Equip. rebates on our website....***

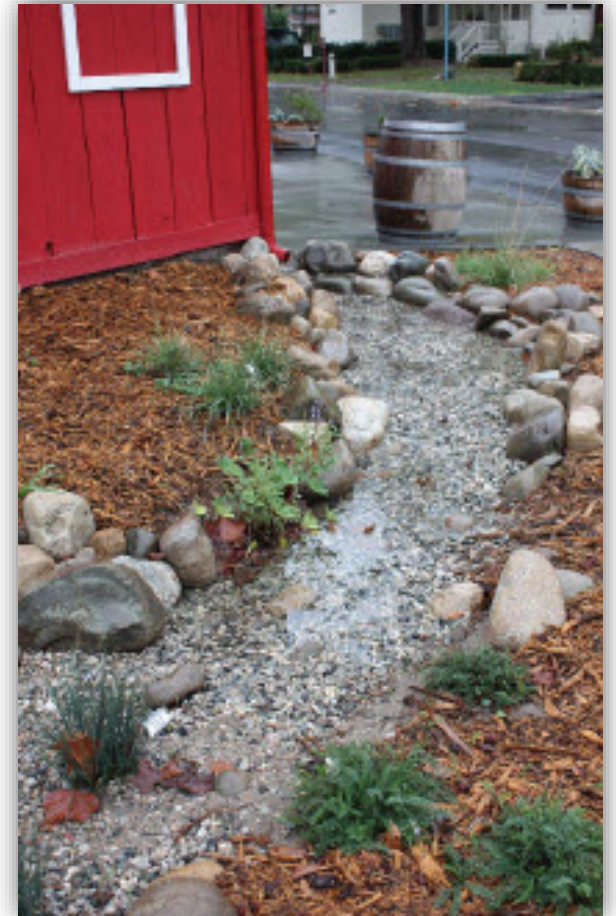




# Landscape Rebate Program

## New!! Rain Water Capture Rebates

- For residential & commercial sites in Santa Clara Co
- Rebates include:
  - Rain Barrels - \$35 per unit
  - Cisterns - \$0.50 per gallon of storage
  - Rain Gardens - \$1 per square foot of roof area diverted, up to \$300 per site.





# Rebates for Businesses

- Submeter Rebates – \$150 per installed submeter
- Custom/Measured Rebates for retrofitting equipment (WET Program)
- **Free** Pre-Rinse Sprayers



# Submeter Rebate Program

- For mobile homes, condo and apartment complexes in Santa Clara Co.
- Individual submeters need to be installed at complex with only one main water meter
- Rebate is \$150 per installed submeter
- Study by the District showed that water submeters result in an average of 22% water savings



# Water Efficient Technology (WET) Program

- This rebate is for commercial, industrial or institutional customers that make equipment changes that save water.
- Rebates are based on measured water savings. Custom/measured rebates
- Rebate is \$4 per HCF (Hundred Cubic Feet or 748 gallons) of water saved per year, or 50% of the cost of the project, whichever is lower. The max rebate is \$50,000 per project, with a minimum of \$400 per project.



# Water Waste Inspector Program

- ▶ Valley Water's Water Waste Inspectors respond to reports of water waste and violations of water use restrictions
- ▶ They provide education and resources to help residents to reduce water use and eliminate water waste.





# 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

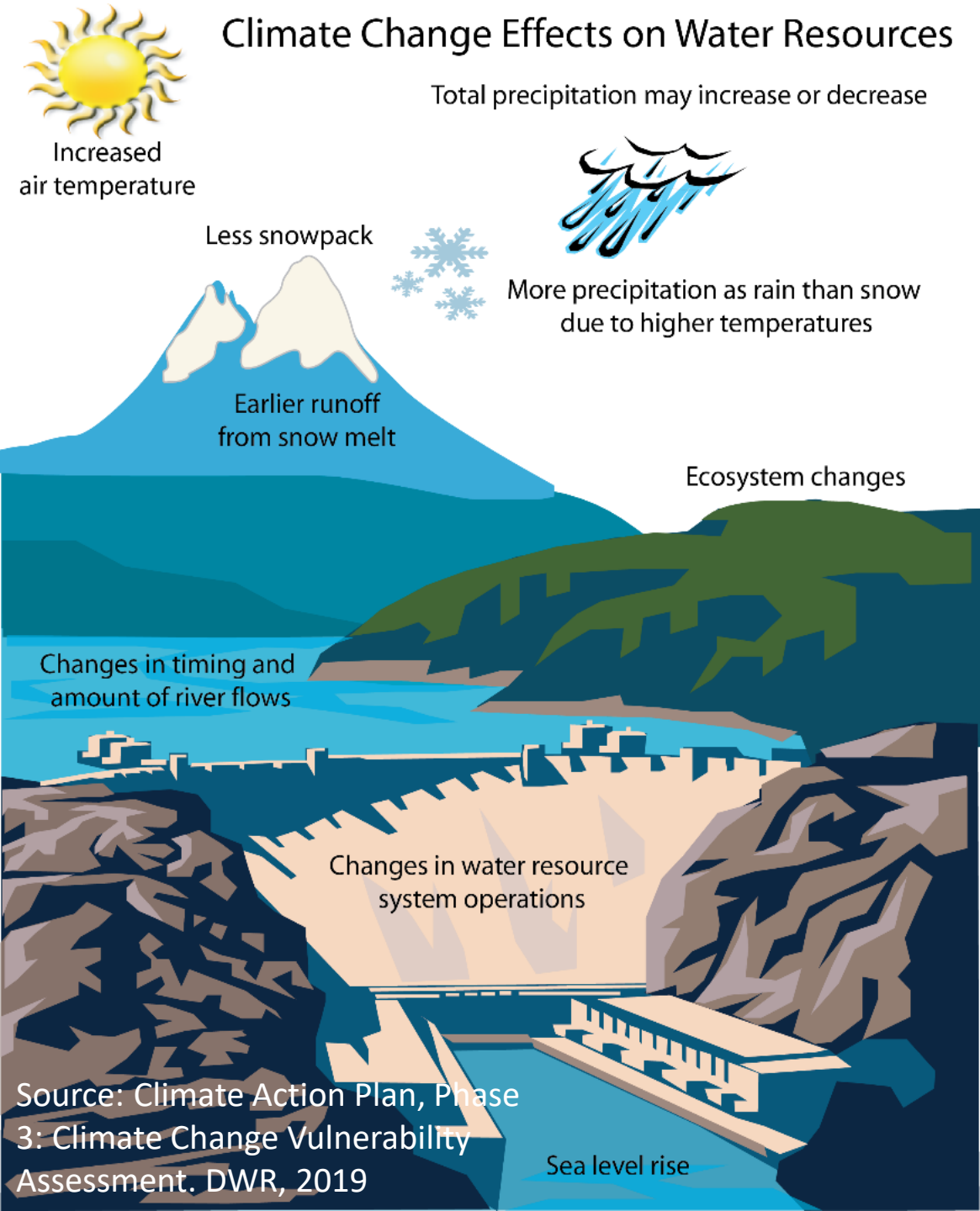
Literature: District offers a wide variety of educational literature

Website: [www.valleywater.org](http://www.valleywater.org)



# QUESTIONS





- Increased intensity: frequency of what is currently a 50-year event could double
  - Sedimentation
  - Operational constraints
- Increased drought: more severe and prolonged dry periods
- Increased temperatures -> enhanced drought magnitude
  - Evapotranspiration
  - Surface water evaporation
  - Water quality issues
- Snowpack decline:
  - Approximately 30-60% by mid-century
  - Up to 80% by late century
- Sea level rise likely between 0.74-1.37 meters by late century
  - Waste water treatment plants
- Wildfire:
  - Water quality
  - Sedimentation
  - Hydrologic changes