



# CRESCENTA VALLEY WATER DISTRICT

## History & Overview

Presentation for:  
Crescenta Valley Historical Society  
September 19, 2022

# Agenda

- History of Crescenta Valley Water District
- Water Supply
- Water Conservation
- Reservoir Water Storage
- Booster Pumps
- Wastewater Collection System
- Questions & Answers





# History of Water Companies in the Crescenta Valley

- Started in 1895 as Local Water Companies brought water to the area
- Water Companies formed from 1895 to 1950
  1. La Crescenta Water Company
  2. Dunsmore Canyon Water Company
  3. Sierra Verdugo Water Company
  4. Cresta Heights Mutual Water Company
  5. Highway Highlands Water Company
  6. Mountain Water Company
  7. Crescenta Mutual Water Company



# Formation of Crescenta Valley County Water District

- Formed as a “County” Water District in 1950
- Took over assets from the Crescenta Mutual Water Company and Mountain Water Company
- City of Glendale took over the Highway Highlands Water Company as part the annexation of the La Crescenta area in 1952.
- Expanded in 1979 with the installation of the sewer collection system





# Crescenta Valley Water District - Today

- Serves 33,000 residents
  - La Crescenta and portions of Glendale and La Canada Flintridge
  - Over 8,100 water & sewer connections
  - 95 miles of water distribution pipelines
  - 11 Pressure Zones with 2,000 feet of elevation grade
  - 34 Booster Pumps
  - 17 Steel Tanks and reservoirs
- with a capacity of 17.5 million gallons
- Daily Storage – 8 to 10 MG
  - 5 – 7 Day storage without water supply
- Deliver's over 1.3 billion gallons of water each year
  - Over 84% of CVWD customers are residential or single-family homes

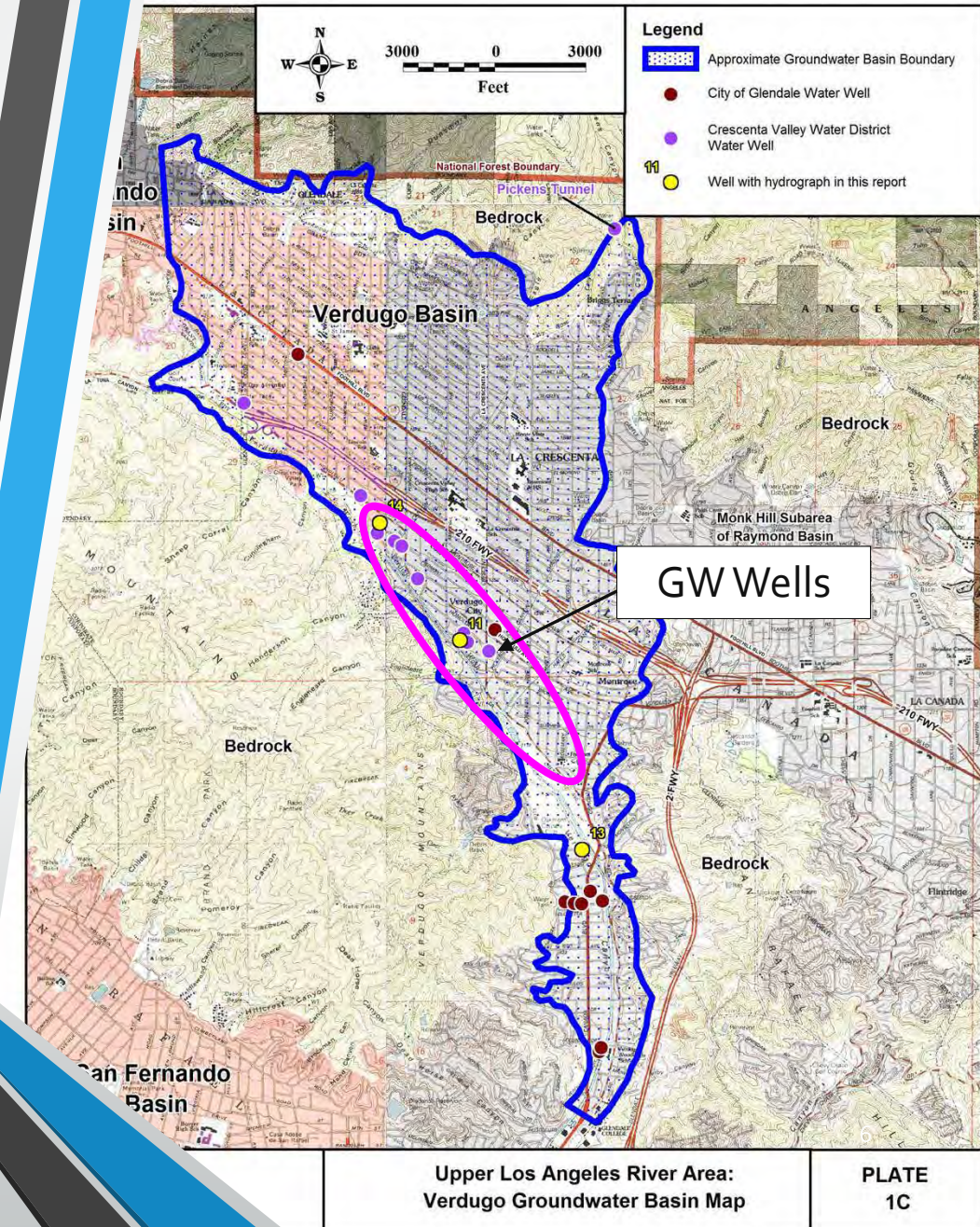




# Water Supply

## Local Groundwater – Verdugo Basin

- 12 Groundwater Wells – Located along the Verdugo Wash
- One Tunnel – Located in Upper Pickens Canyon
- Provides on average 2.0 MGD
- 45% to 55% of total water demand
- Shallow Depth to Bedrock
  - 50 ft to 300 ft deep
- Verdugo Basin
  - Adjudicated Basin under San Fernando Basin
  - Water Rights - CVWD & Glendale





LOS ANGELES COUNTY FLOOD CONTROL DISTRICT  
Hydraulic Division

## WELL DATA

FOREIGN NO. N.H. WELL F. C. NO. 5036

OWNER OR TENANT Highway Highlands Water Company  
LOCATION & DESCRIPTION Foothill Blvd.,  
Highway Highlands, California.

DEPTH 309 DIAM. OF CASING 12"

PUMP Experimental L&B. Submersible

USE Domestic

DESC. REF. POINT

ELEVATION OF R. P. DATUM 1750

REMARKS Pumped 33 miner's inches  
4" Column & ~~tee~~ rated at 170 gpm at 120 psi

DATA OBTAINED BY A.J. DATE 1-23-51

SOURCE OF DATA MW ~~E~~ LACFCO & H.H.W. Co

(LOG ON REVERSE)

## WELL LOG

DRILLER DATE DRILLED 1924

DEPTH TO WATER WHEN DRILLED 125' orig 147'

DATA FURNISHED BY MW ~~E~~ LACFCO DATE 1-23-51

| FROM | TO | FORMATION                            |
|------|----|--------------------------------------|
|      |    | <u>Drilled thru soil, sandy clay</u> |
|      |    | <u>boulders, gravel to bottom</u>    |
|      |    | <u>Ends in good water sand.</u>      |

PERFORATIONS:

DATE

3-12-49  
1-23-50  
12-9-50  
5-20-51  
4-27-52  
11-22-52  
5-17-53  
1-25-54  
5-14-55  
Mar 42  
11-30-49  
4-10-50  
10-23-50

## WELL DATA (1) Place and Owner.

STATE OF CALIFORNIA  
DEPARTMENT OF PUBLIC HEALTH

Well No. 2

(2) Source of Information Well No. 2 - 4029 Lowell Ave

Collected by Henry Ordway Date 5/24/52

- |                                    |                                                      |
|------------------------------------|------------------------------------------------------|
| (3) Number or Name                 | <u>Well No. 2</u>                                    |
| Date drilled                       | <u>1922</u>                                          |
| (4) Location: Neighborhood         | <u>Residential,</u>                                  |
| Size of lot                        | <u>140' x 298'</u>                                   |
| Distance to: Sewer                 | <u>See Map for Casapool distance &amp; location.</u> |
| Sewage disposal                    | <u>none</u>                                          |
| Abandoned well                     | <u>140' West well No. 3 Casapool.</u>                |
| Nearest property line              | <u>43' North</u>                                     |
| (5) Housing: Type                  | <u>Corrugated Iron</u>                               |
| Condition                          | <u>Fair</u>                                          |
| Pit depth (if any)                 | <u>None</u>                                          |
| Floor (material)                   | <u>Concrete</u>                                      |
| Drainage                           | <u>Good</u>                                          |
| (6) Well Depth                     | <u>157'</u>                                          |
| (7) Casing: Depth                  | <u>157'</u>                                          |
| Diameter                           | <u>12"</u>                                           |
| Kind                               | <u>12 gauge</u>                                      |
| Height above floor                 | <u>5' Sense</u>                                      |
| Distance to highest perforations   | <u>No Well Log.</u>                                  |
| Surface sealed (yes or no)         | <u>Yes</u>                                           |
| Gravel pack (yes or no)            | <u>No</u>                                            |
| Second casing depth                | <u>None</u>                                          |
| Second casing diameter             |                                                      |
| Annular seal (depth)               |                                                      |
| (8) Impervious Strata: { Thickness | <u>No Well Log.</u>                                  |
| Penetrated { Depth to              |                                                      |
| (9) Water Levels: { Surface        | <u>79'</u>                                           |
| Depth to { Static                  | <u>101'</u>                                          |
| { When pumping                     |                                                      |
| (10) Pump: Make                    | <u>Layne Boulder</u>                                 |
| Type                               | <u>Deep Well Turbine</u>                             |
| Capacity, g.p.m.                   | <u>100</u>                                           |
| Lubrication                        | <u>Oil</u>                                           |
| Power                              | <u>Electric</u>                                      |
| Auxiliary power                    | <u>None</u>                                          |
| Control                            | <u>Automatic</u>                                     |
| Discharge location                 | <u>Reservoir No 1-3 and 9</u>                        |
| Discharge to                       |                                                      |
| (11) Frequency of Use              | <u>24 hrs Daily</u>                                  |
| (12) Flood Hazard                  | <u>None</u>                                          |
| (13) Remarks and Defects           |                                                      |
| (Use other side if necessary)      |                                                      |
| (14) Show well log on other side.  |                                                      |

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| (4) Location: Neighborhood         | <u>Residential</u>                                  |  |
| Size of lot                        | <u>140' x 298'</u>                                  |  |
| Distance to: Sewer                 | <u>See Map for Cesspool location &amp; location</u> |  |
| Sewage disposal                    | <u>none</u>                                         |  |
| Abandoned well                     | <u>140' West Well No. 3 Cesspool</u>                |  |
| Nearest property line              | <u>43' North</u>                                    |  |
| (5) Housing: Type                  | <u>Corrugated Iron</u>                              |  |
| Condition                          | <u>Fair</u>                                         |  |
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| (7) Casing: Depth                  | <u>157'</u>                                         |  |
| Diameter                           | <u>12"</u>                                          |  |
| Kind                               | <u>12 gauge</u>                                     |  |
| Height above floor                 | <u>6'</u>                                           |  |
| Distance to highest perforations   | <u>No Well Log</u>                                  |  |
| Surface sealed (yes or no)         | <u>Yes</u>                                          |  |
| Gravel pack (yes or no)            | <u>No</u>                                           |  |
| Second casing depth                | <u>None</u>                                         |  |
| Second casing diameter             |                                                     |  |
| Annular seal (depth)               |                                                     |  |
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| Control                            | <u>Automatic</u>                                    |  |
| Discharge location                 | <u>Reservoir No 1-3 and 9</u>                       |  |
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| (14) Show well log on other side.  |                                                     |  |



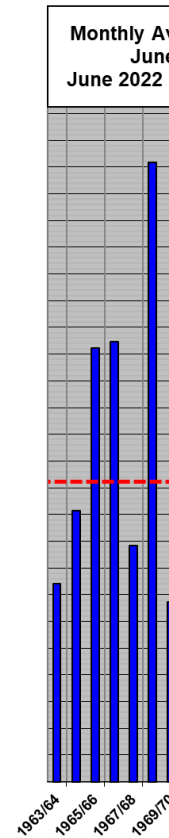
# Groundwater Wells



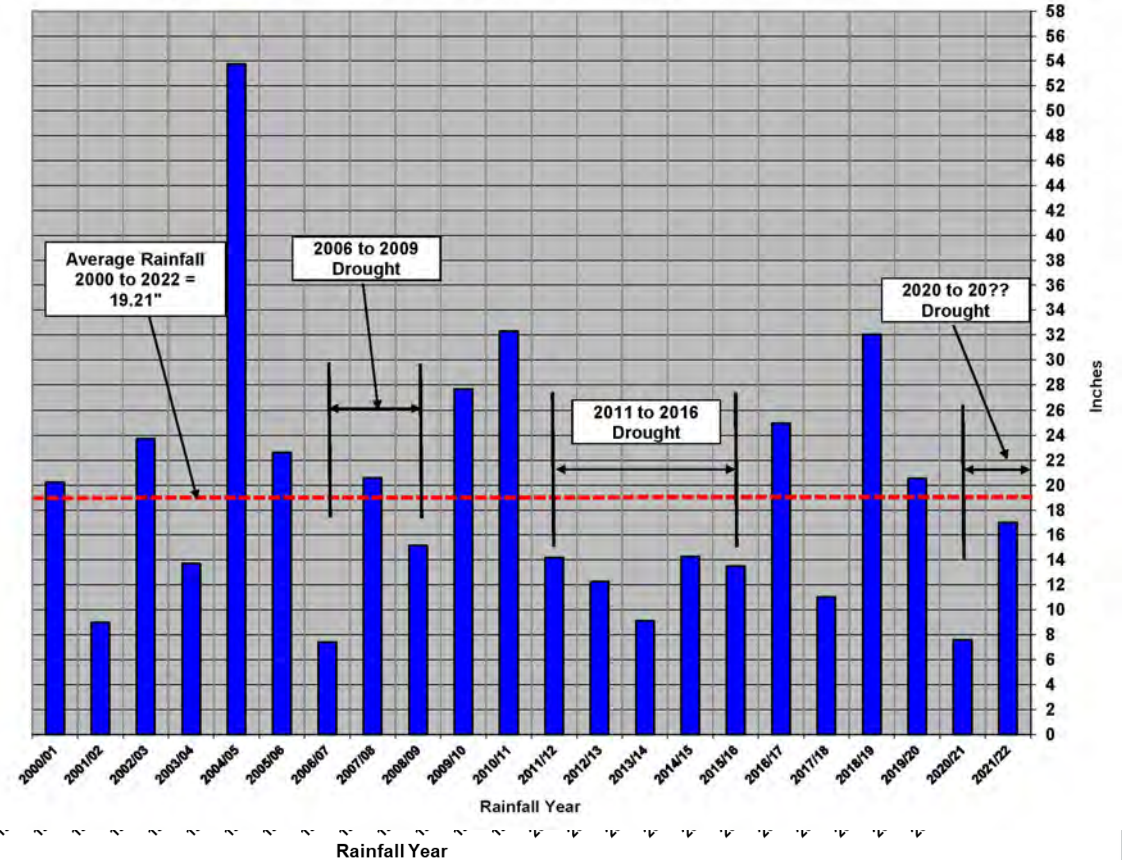
- CVWD's groundwater is blended daily with imported water after treatment and disinfection to meet customer demands.
- There are three available blending stations throughout the District
- The exact ratio of blending varies with the seasons.
  - More groundwater is used in the wintertime (low demand)
  - More imported water is used in the summertime (high demand)

# Verdugo Basin

- Recharge
- Stormwater/Rainfall
  - Flood Control Channels – 1930's
  - Less permeable open space as CV was developed
- Septic Sewer System
  - Removed Glendale – Mid 1970's
  - Removed CVWD – Mid 1980's



Crescenta Valley Annual Rainfall - 2000 - 2022

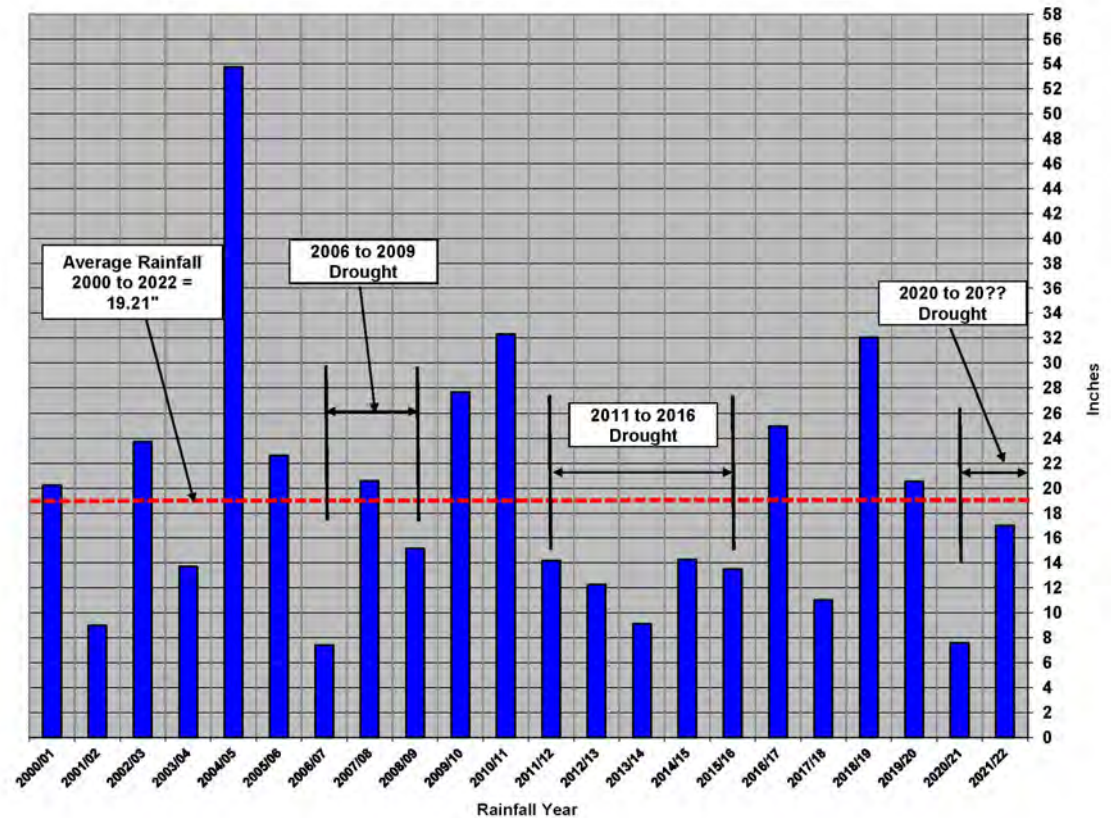




# Verdugo Basin

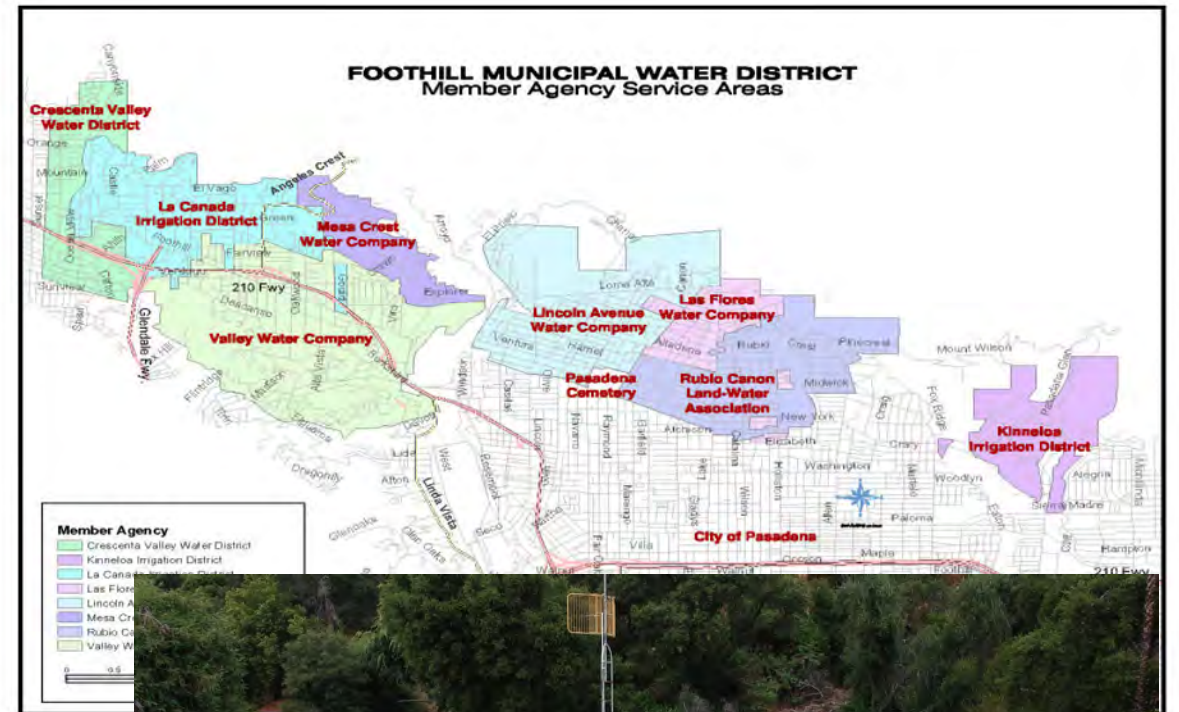
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Crescenta Valley Annual Rainfall - 2000 - 2022



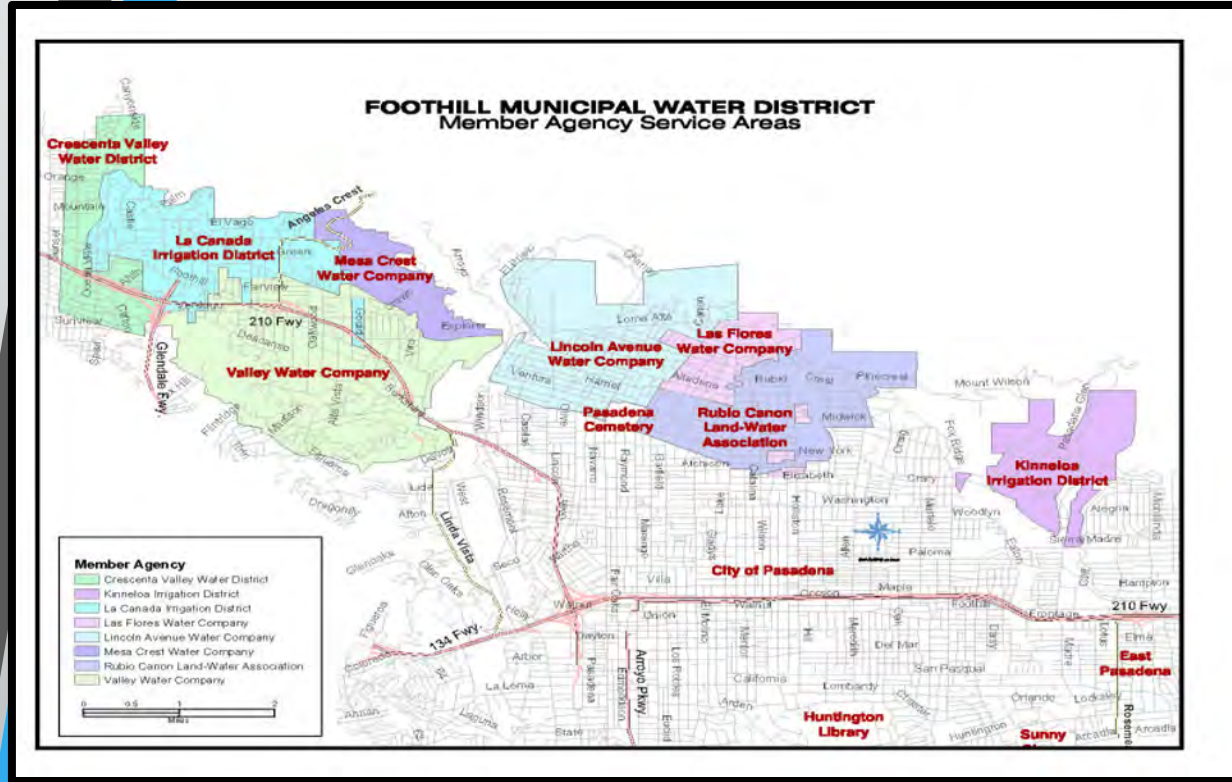
# Imported

- In 1950, local Water Agencies realized wells would not provide enough water for the area and needed additional water
- Formed in 1952 & facilities completed in 1954  
Member Agency of Metropolitan Water District of Southern California
- Delivers imported water from Colorado State Project Water to the Altadena, Pasadena, and Crescenta area
- Provides a max of 5.7 million gallons per day, or about 45% to 55% of water supply



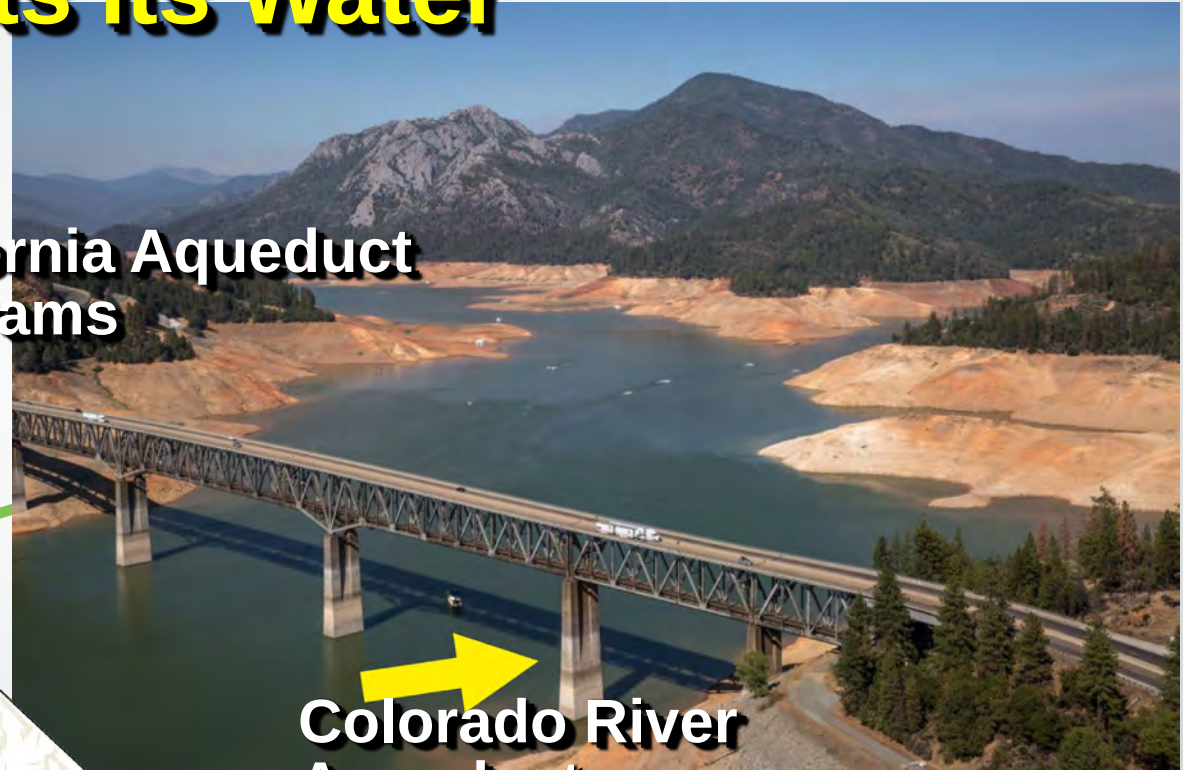
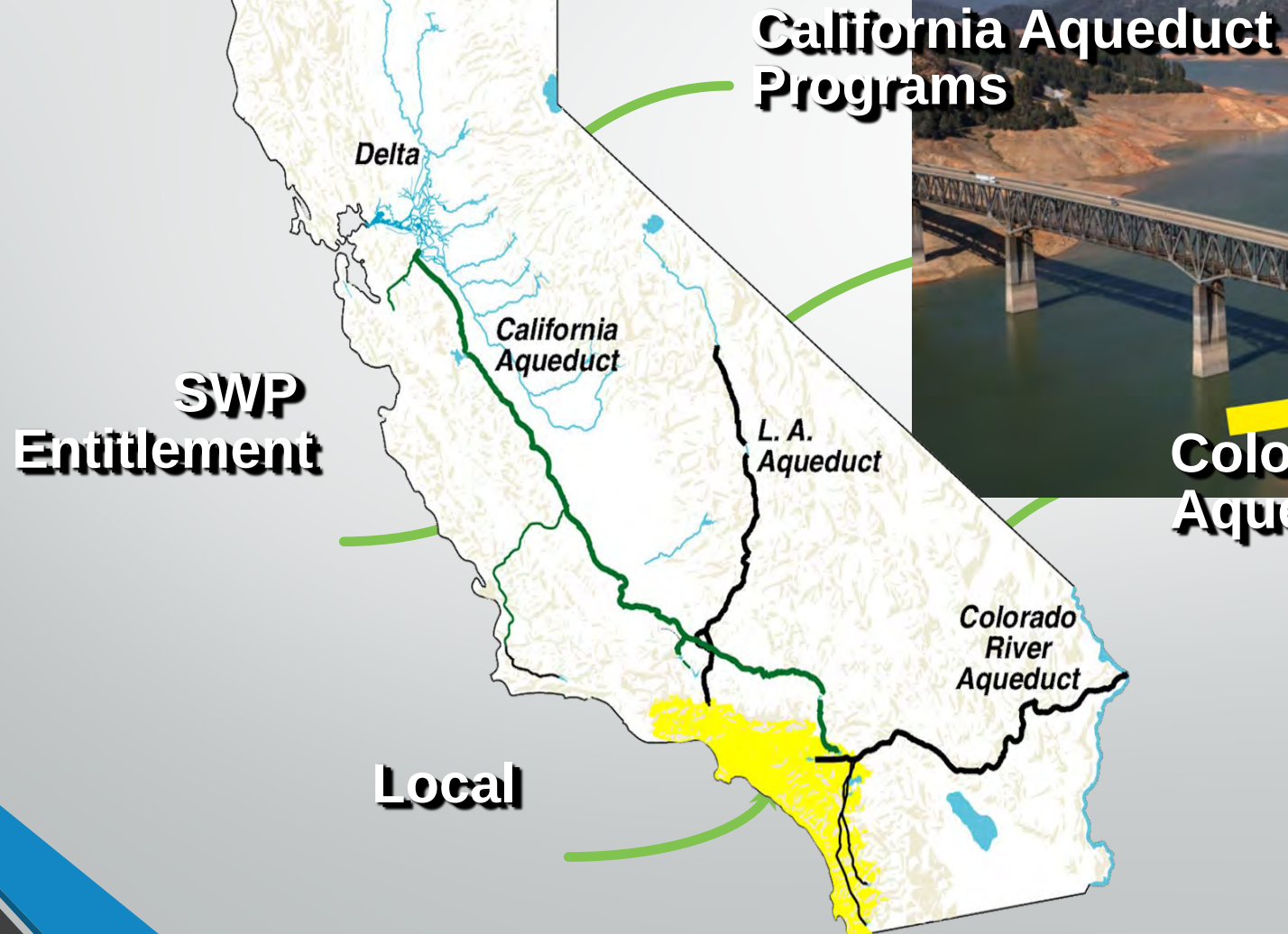


# Imported Water Supply





# Where Southern California Gets its Water



**Colorado River Aqueduct**



# Where Southern California Gets its Water



***LAKE SHASTA - 2022***

# Imported Water Supply





# Imported Water Supply



***LAKE MEAD & HOOVER DAM - 2022***

# Recent MWD Shutdown – Sept 6 – Sept 20

- 10' dia. Pipe leaking over Santa River
- Provides Colorado River Water to Weymouth Plant
- State Water Project Water directed to Weymouth Plant
- 5% Allocation – Less Water Supply Available
- Repairs Complete



Upper Feeder

Upper Feeder

Santa Ana River Bridge

Upper Feeder - Santa Ana River Bridge

- 1010' Long
- 116" Diameter
- 750 cfs max flow

Stainless steel bellows joint allows for pipeline expansion/contraction

June 13, 2022

E&O Committee

Item # 7a Slide 6



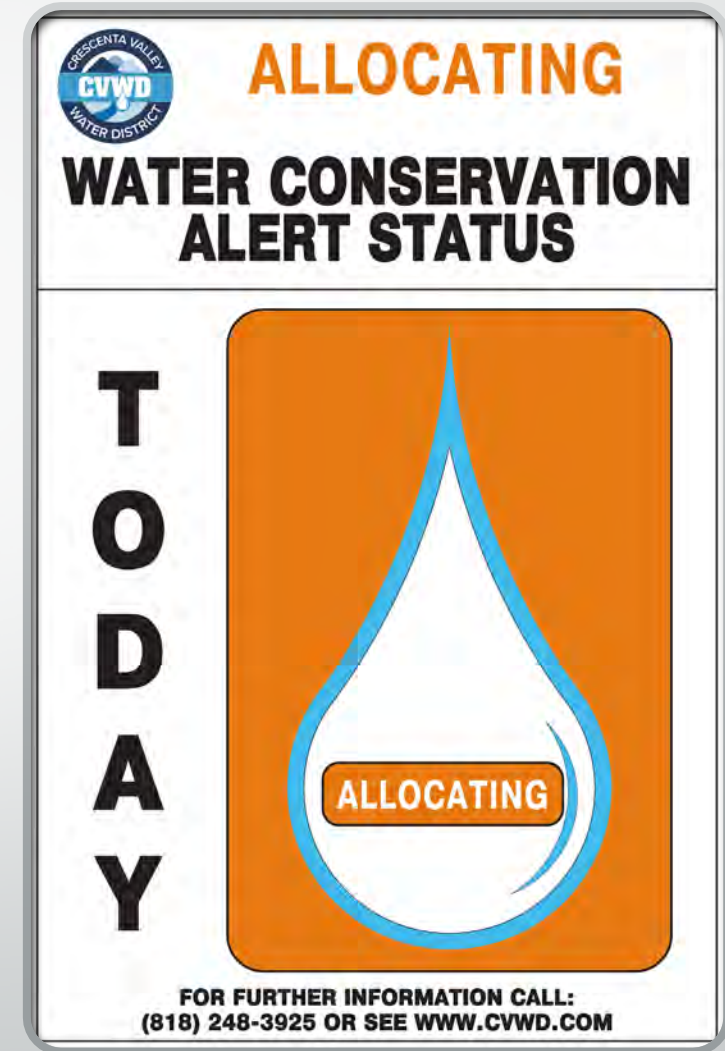
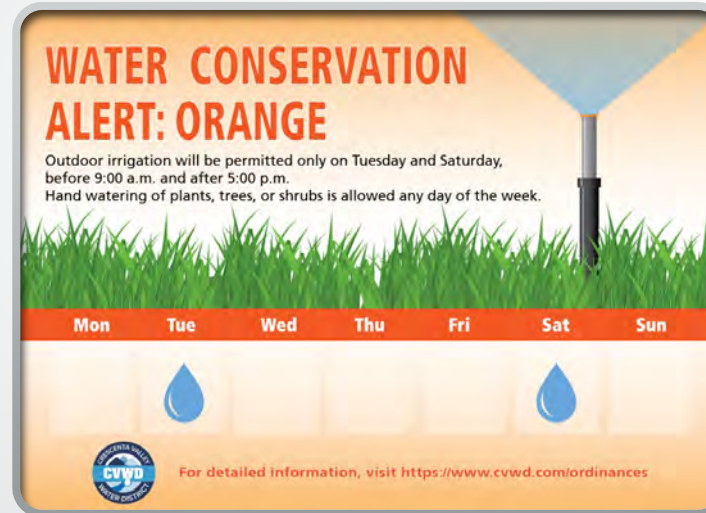
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- 5% Allocation – Less Water Supply Available
- Repairs Complete



# Water Conservation

- **Orange – ALLOCATING –** is defined as an Allocating Conservation Alert.
- Customers are requested to minimize indoor water use and severely limit outdoor water use.
- Outdoor Irrigation is limited to no more than two (2) days per week.
- Outdoor irrigation will be permitted only on Tuesday and Saturday, before 9:00 a.m. and after 5:00 p.m.
- Fix leaks within 48 hours.



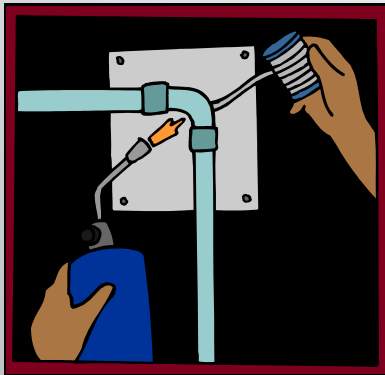


# What Can You Do to Help

## **1. STOP THOSE LEAKS !**

Check your indoor and outdoor water use for leaks.

- Many silent leaks allows water & your money to go down the drain.
- Fix irrigation system leaks quickly & check for water in the gutters or mud puddles.
- Inspect your sprinklers and drip sprayers regularly for leaks during the daytime since the optimal time to water is at night when you cannot observe leaks.



- Older irrigation system with galvanized pipes are know to have over 50% or more water lose through leaks.
- To help detect unseen leaks ask your local water agency for assistance.
- Or turn off all water to your house and check the water meter. If the meter is still moving after the water is off, then you have a leak.
- Studies have shown homes can waste more than 10% or their water use due leaking, which costs both you and the environment.

# WATER CONSERVATION

Adjust sprinklers and irrigation times to avoid overspray, runoff and waste; and reduce the frequency of landscape irrigation cycles.





# WATER CONSERVATION

Avoid landscape irrigation between the hours of 9:00 a.m. and 5:00 p.m., on windy days and during rainfall.



# WATER CONSERVATION

Reduce the amount of turf and install new drought tolerant landscaping, low water-using trees and plants, and efficient irrigation systems.





# Water Conservation

Do not hose down driveways, patios, sidewalks, and other paved surfaces.



# Water Conservation

Do not allow the hose to run while washing any vehicle; use a bucket or a hose with an automatic cut-off valve.





# Water Pipeline System

- 95 miles of pipeline
- Pipe Material – Steel with interior & exterior cement coating
- Pipe Size – Range from 2-inch dia. to 16-inch dia.
- Pipe Age – Range from 88 years (1933) to New (2021)
- 51% of pipelines are over 50 years old



| Pipeline Breakdown by Age |             |             |                |                 |
|---------------------------|-------------|-------------|----------------|-----------------|
| 2021                      | Years       | Period      | Length of Pipe | Percent of Pipe |
| 1                         | >71 Yrs     | 1924 - 1950 | 14,950         | 3.0%            |
| 2                         | 60 - 70 yrs | 1951 - 1960 | 131,555        | 26.3%           |
| 3                         | 50 - 60 yrs | 1961 - 1970 | 114,810        | 22.9%           |
| 4                         | 40 - 50 yrs | 1971 - 1980 | 50,270         | 10.0%           |
| 5                         | 30 - 40 yrs | 1981 - 1990 | 40,850         | 8.2%            |
| 6                         | 20 - 30 yrs | 1991 - 2000 | 62,680         | 12.5%           |
| 7                         | 10 - 20 yrs | 2001 - 2010 | 62,470         | 12.5%           |
| 8                         | 1 - 10 yrs  | 2011 - 2021 | 23,420         | 4.7%            |
|                           |             |             | 501,005        | 100%            |

| Pipeline Breakdown by Leaks |              |                 |                |                 |
|-----------------------------|--------------|-----------------|----------------|-----------------|
| 2021                        | No. of Leaks | Avg Age of Pipe | Length of Pipe | Percent of Pipe |
| 1                           | 8            | 88              | 740            | 0.15%           |
| 2                           | 6            | 70              | 350            | 0.07%           |
| 3                           | 5            | 59              | 1,250          | 0.25%           |
| 4                           | 4            | 71              | 3,140          | 0.63%           |
| 5                           | 3            | 57              | 3,020          | 0.60%           |
| 6                           | 2            | 52              | 5,940          | 1.19%           |
| 7                           | 1            | 56              | 36,150         | 7.22%           |

| Pipeline Breakdown by Pipe Size |                |                     |                     |                       |
|---------------------------------|----------------|---------------------|---------------------|-----------------------|
| 2021                            | Pipe Size (in) | Length of Pipe (ft) | Avg Age of Pipeline | Percent of Total Pipe |
| 1                               | 2              | 1,210               | 63                  | 0.24%                 |
| 2                               | 3              | 1,200               | 66                  | 0.24%                 |
| 3                               | 4              | 10,050              | 64                  | 2.01%                 |
| 4                               | 5              | 1,440               | 88                  | 0.29%                 |
| 5                               | 6              | 140,640             | 53                  | 28.07%                |
| 6                               | 8              | 197,735             | 34                  | 39.47%                |
| 7                               | 10             | 22,370              | 46                  | 4.47%                 |
| 8                               | 12             | 102,530             | 48                  | 20.46%                |
| 9                               | 14             | 6,120               | 43                  | 1.22%                 |
| 10                              | 16             | 17,710              | 59                  | 3.53%                 |
|                                 |                | 501,005             |                     | 100.00%               |

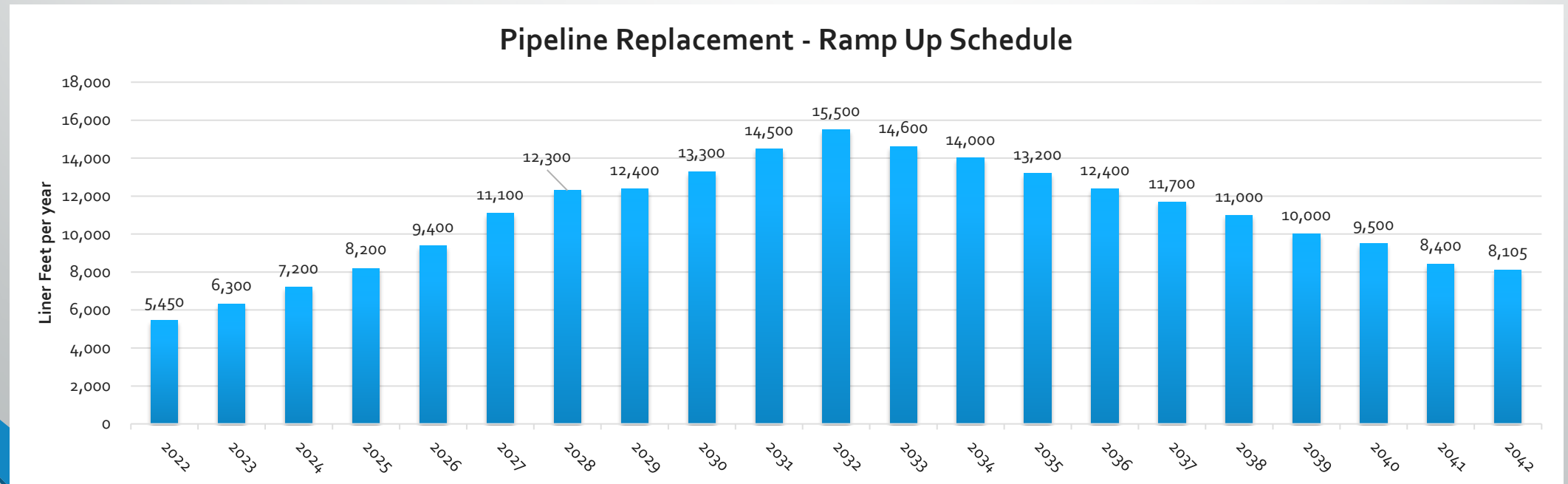
# Goal – Pipeline Replacement Program

## Goal:

1. Replace pipeline 70 years or older over the next 75-yr
2. Ramp Up – up to 2 miles/year for 10-yr.
3. Ramp Down – down to 1.0-mile/year for following 10-yr.
4. Estimate annual cost - \$3.0M to \$6.0M/yr.

## Results:

1. Still behind schedule to replace older pipe
2. Risk – High for leaks on older pipes
3. Replacement costs – 10X higher when replacement unplanned main breaks





# Water Storage

- CVWD's water supply is pumped to and held in reservoirs located throughout the area.
- The District has a total of 17 reservoirs, constructed between 1949 and 1985 with storage capacity of 17.5 million gallons.



# Booster Pumps

- 34 Booster Pumps.
- Moves water from one pressure zone to the next pressure zone.
- Pressure ranges from 30 psi to 210 psi depending on location.
- Uses Electrical Power to booster the water.
- Costs \$750K to \$800K per year.







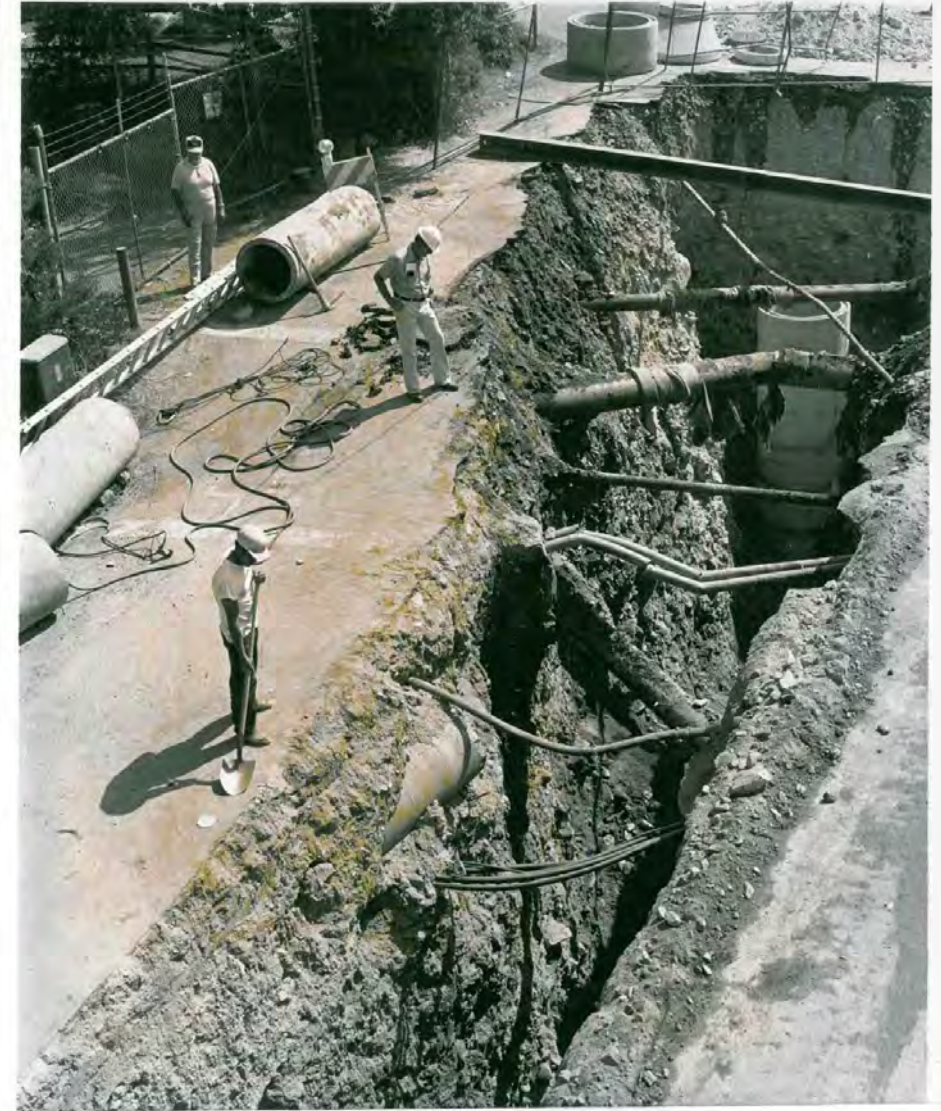
1953 - Glenwood Plant at  
Oakendale & Glenwood



2001 - Glenwood Plant at  
Oakendale & Glenwood

# Wastewater Collec

- Assessment District in 1979.
- 62 Miles of sewer mains and laterals installed between 1980 – 1984.
- Wastewater flows through 6.0-mile pipeline through Glendale.
- Treatment at the Los Angeles-Glendale Water Reclamation Plant.
  - Operations as the first water reclamation plant in 1976.
  - The cities of Los Angeles and Glendale co-own the plant, and LA Sanitation operates and maintains it.
  - The plant processes approximately 20 million gallons of wastewater per day.

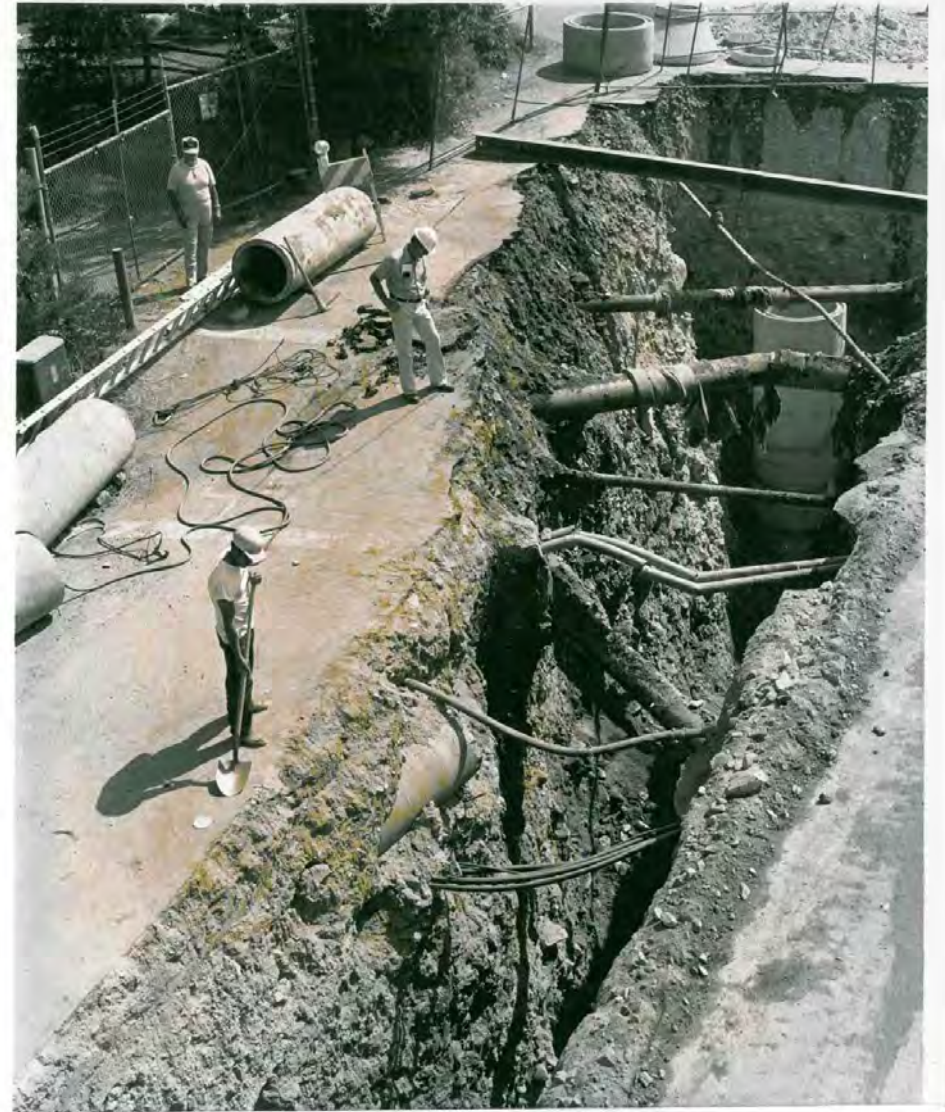


CONSTRUCTION OF 8" VITRIFIED CLAY SEWER MAIN  
(Rockdell Ave. at Rosemont intersection, 26' of cover, 1981)



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CONSTRUCTION OF 8" VITRIFIED CLAY SEWER MAIN  
(Rockdell Ave. at Rosemont intersection, 26' of cover, 1981)



# Wastewater Collection System

- 22 Miles of sewer mains and laterals cleaned each year.
- CCTV 10 miles of sewer main per year.
- Avg. 1.54 MGD goes to LAGWRP.
- One Lift Station.







# Questions & Answers

## Our Mission

**To provide quality water and wastewater services to the Crescenta Valley community in a dependable and economically responsible manner.**

## Our Vision

**Secure sustainable water supplies and ensure infrastructure reliability, while furthering our commitment to accountability, transparency, and cost-effectiveness**



David S. Gould  
Director of Engineering &  
Operations  
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(818) 236-4119