CRESCENTA VALLEY WATER DISTRICT

Overview – CVWD's Water System

January 27, 2021

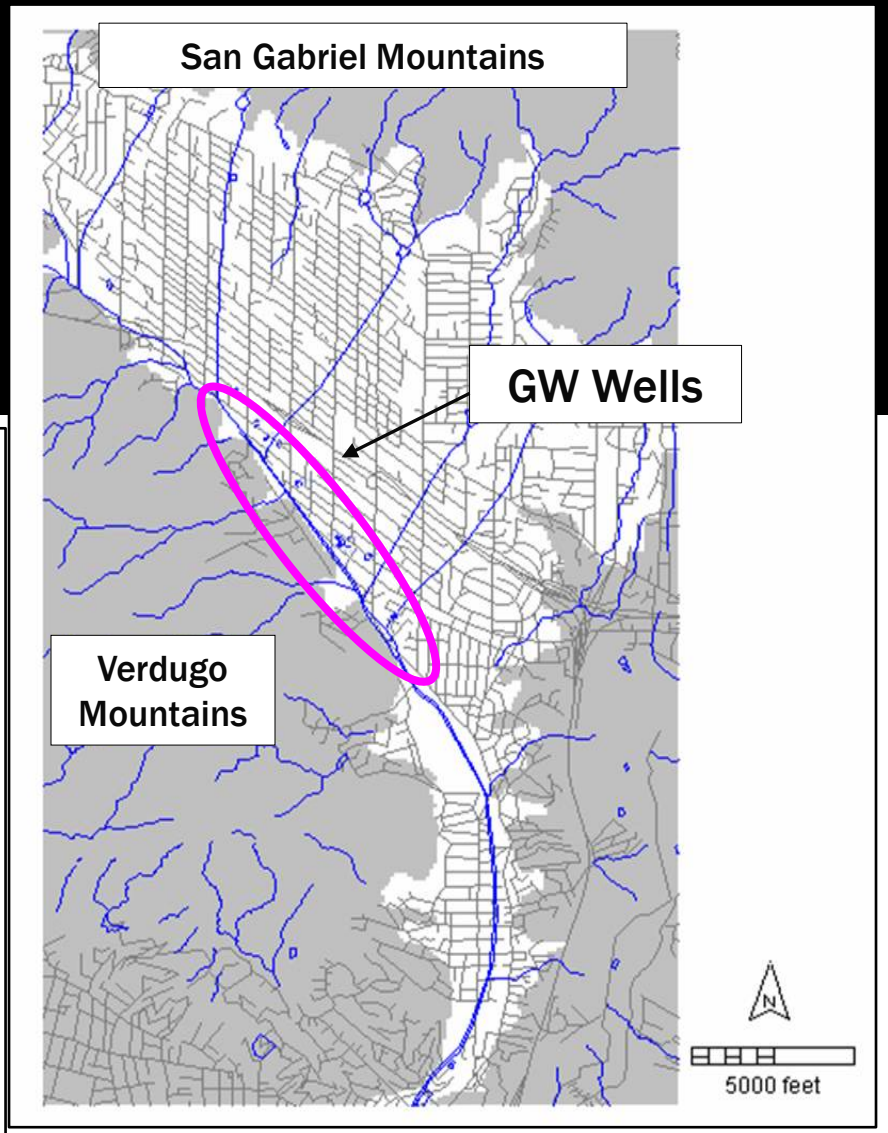
AGENDA

- Overview of Water System
  - Water Supply
  - Water Storage
  - Water Distribution – Pipelines
  - Water Booster Pumps & Booster Station Improvements
  - Water Treatment
  - Emergency Response/Public Safety
  - Facilities & Planning

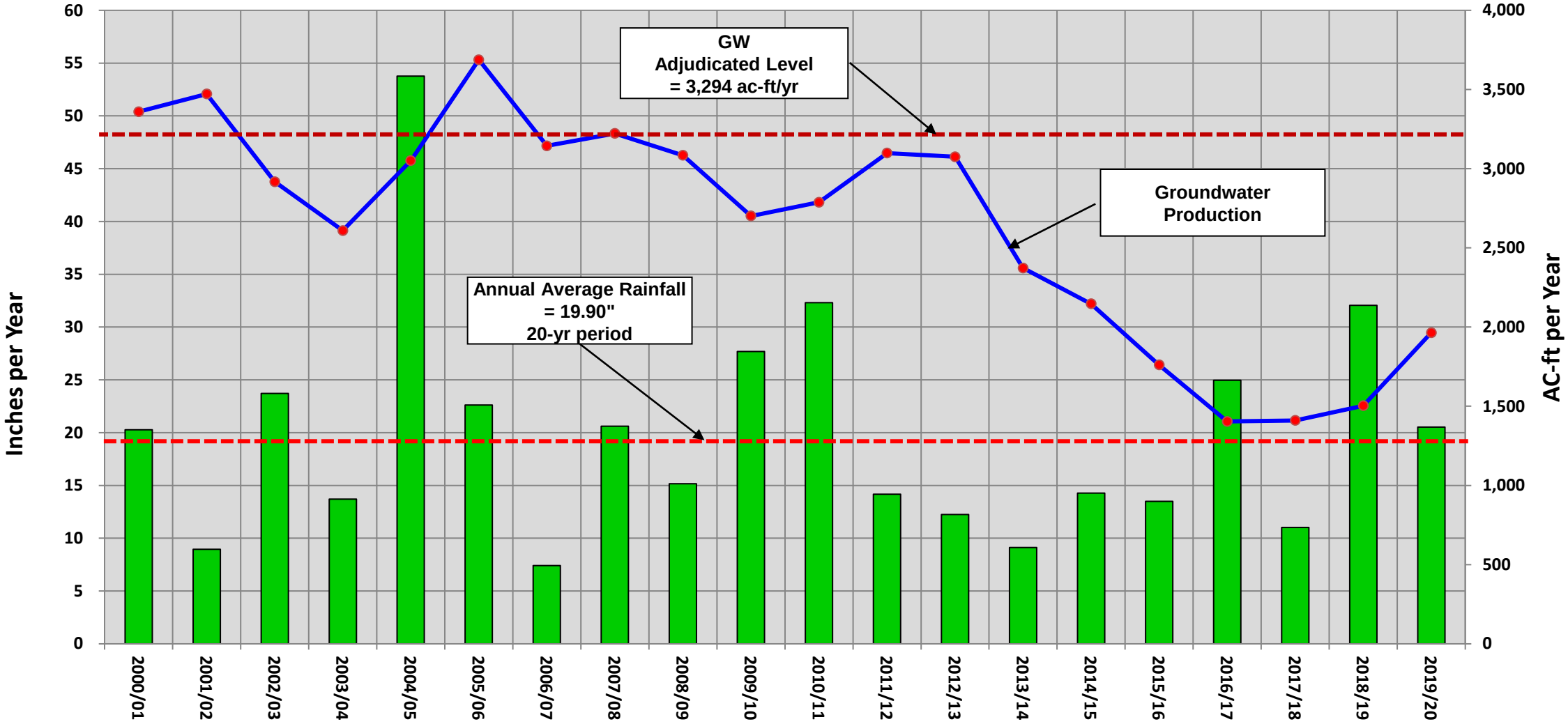
WATER SUPPLY

Two (2) Sources – Groundwater & Imported Water

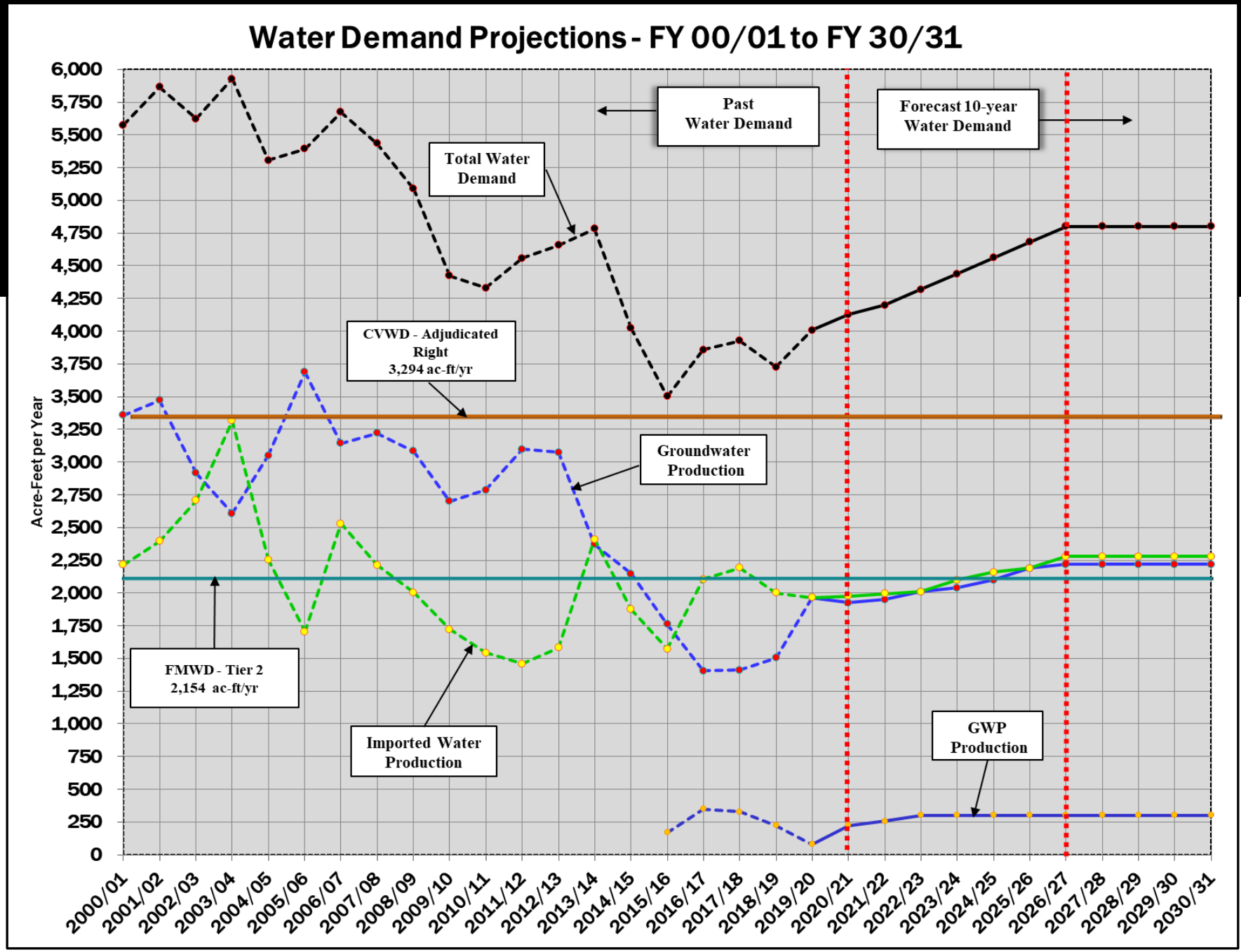
- **<u>Groundwater – Verdugo Basin</u>**
  - **12 wells located along Verdugo Wash**
  - **Well Capacity – 2.1 MGD**
  - **Meets 40% to 50% of water demand**
  - **Adjudicated Basin - CVWD & Glendale water rights only**
  - **Allowed to pump up to 3,294 ac-ft/yr**
  - **GW Well average age – 78 years old**
  - **Water levels at low due to recent drought**



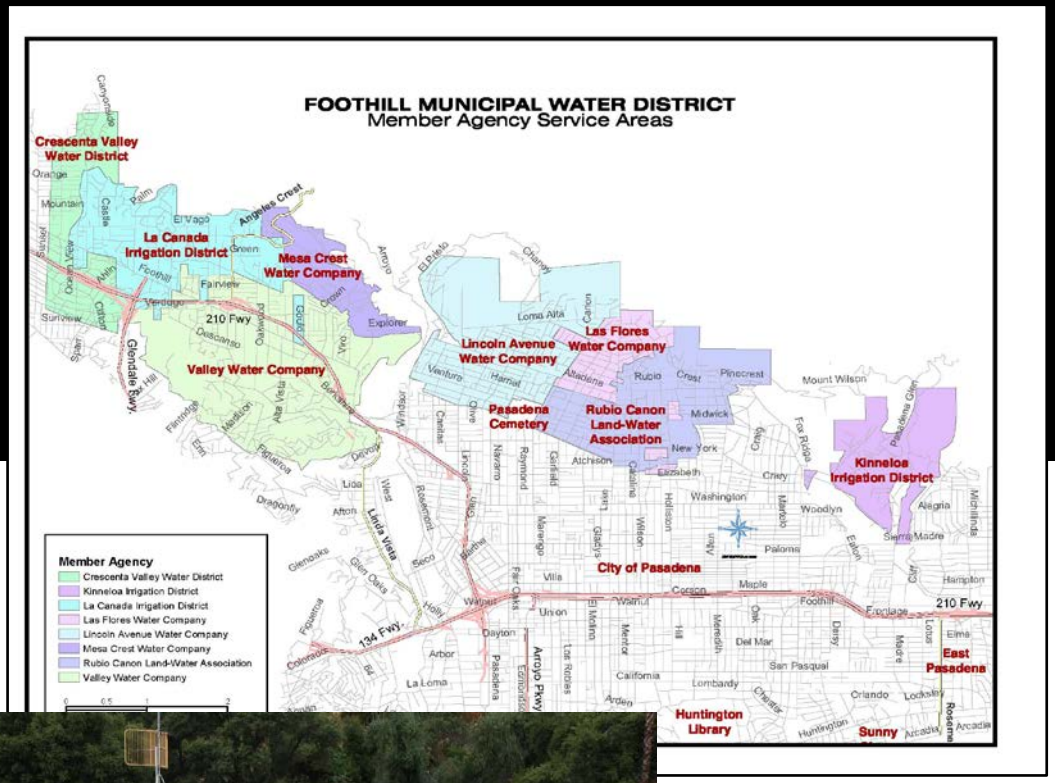
Groundwater Production vs. Rainfall - FY 00/01 to FY 19/20



WATER SUPPLY



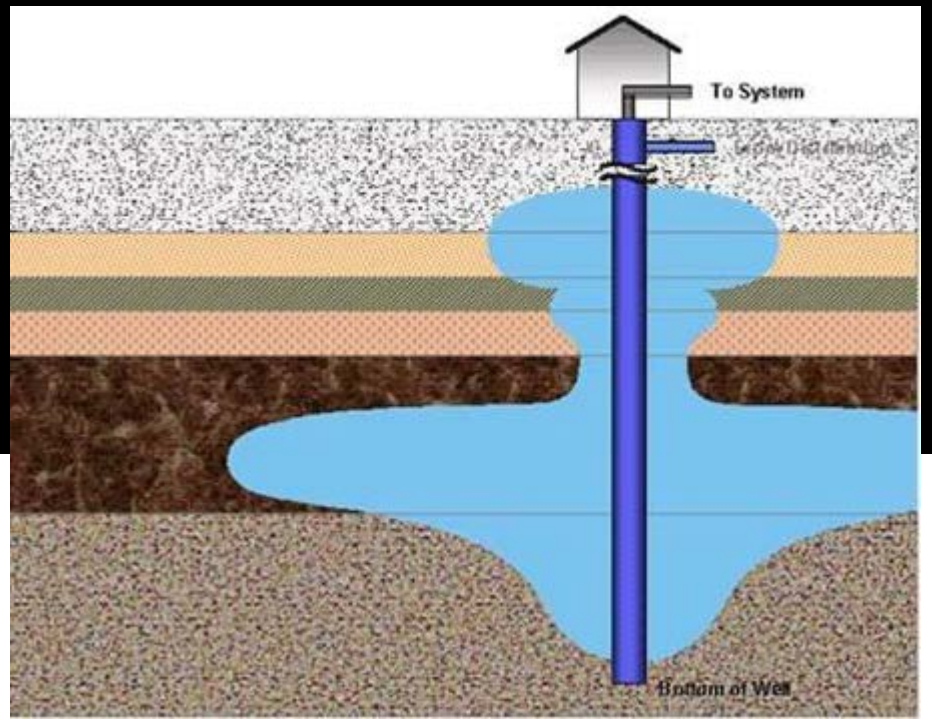
WATER SUPPLY



Imported Water – FMWD

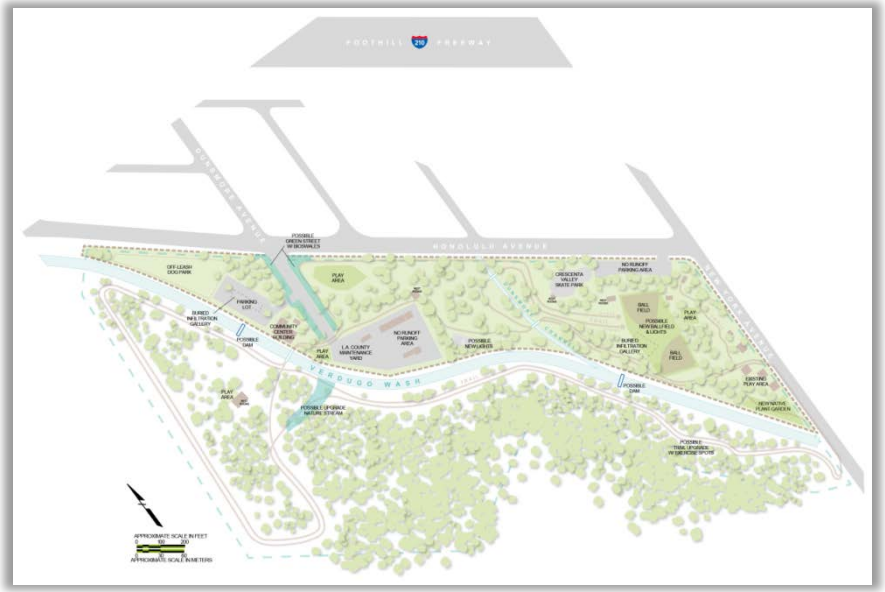
- **Foothill Municipal Water District – Wholesaler of Imported Water from Metropolitan Water District to CVWD**
  - **8 sub agencies**
  - **Serves Altadena, La Canada & La Crescenta**
- **Provides 5.9 MGD max**
- **50% - 60% of water demand**
- **Imported: MWD - Weymouth Plant – La Verne**
  - **80% Colorado River & 20% State Project**

WATER SUPPLY



GOALS

- Maximize Groundwater
  - Well Rehabilitation
  - New Wells
- Reduce Imported Water
- Water Demand Projections – 1%/yr for next 5 yrs.
- 50%/50% - Increase Ratio GW/FMWD
- Utilizing Stormwater Recharge to increase water in Verdugo Basin
- Other Sources
  - Recycled Water
  - City of Glendale
- Cost per ac-ft
  - Groundwater - $450 ac-ft
  - Imported Water
    - Total Cost - $1,684 ac-ft
    - Variable Cost - $1,320 ac-ft
    - Anticipate cost to increase 3% to 5% annually



WATER STORAGE

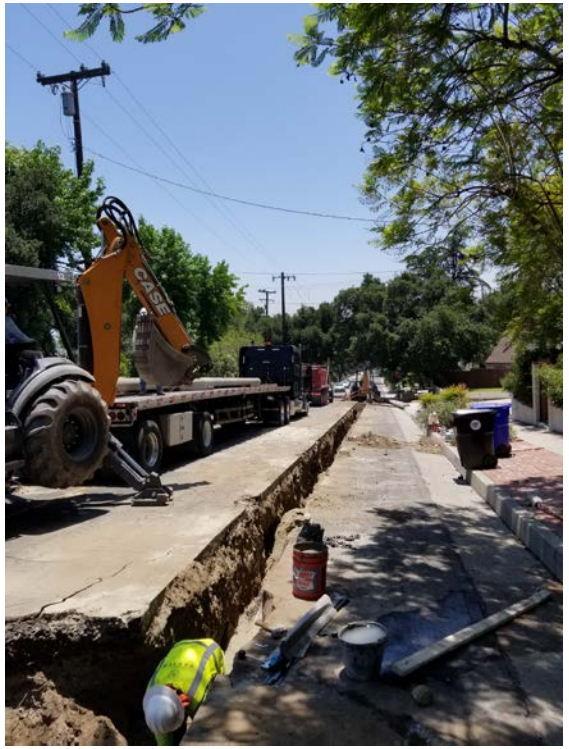
- Concrete & steel reservoirs ranging in size from 3.0 MG to 0.5 MG
- 14 Steel Tanks – Installed between 1949 – 1970 – Avg. 60 yrs. old
- 3 Concrete Tanks – 1 installed 1956 – 2 Installed 1983
- Total Storage – 17.5 MG
- Daily Emergency Storage 8 to 10 MG
- 5-to-7-day storage with water supply out of service

<u>Goals:</u>

1. Steel Tanks
   a. Re-coating & structural upgrades - every 20-year
   b. Completed 3 reservoirs to date
   c. Budget - One (1) steel tank rehabilitation per year
2. Concrete Tanks –
   a. Cleaning & repair – Every 10-15 years

WATER DISTRIBUTION - PIPELINES

Pipeline Replacement Cost						
2020	Pipeline Age	Pipeline Age Between Years	Liner Feet of Pipe (ft)	Percent of Total Pipe	Cost/LF of Pipe ($)	Total Cost
1	>70 Yrs	1924 - 1950	28,010	5.5%	$425	$11,904,250
2	61 - 69 yrs	1951 - 1959	88,630	17.4%	$425	$37,667,750
3	51 - 60 yrs	1960 - 1969	138,260	27.2%	$425	$58,760,500
4	41 - 50 yrs	1970 - 1979	67,540	13.3%	$425	$28,704,500
5	31 - 40 yrs	1980 - 1989	39,660	7.8%	$425	$16,855,500
6	21 - 30 yrs	1990 - 1999	53,970	10.6%	$425	$22,937,250
7	11 - 20 yrs	2000 - 2009	76,140	15.0%	$425	$32,359,500
8	1 - 10 yrs	2010 - 2019	16,170	3.2%	$425	$6,872,250
Grand Total			508,380	100.0%		$216,061,500
			96.3	Miles		



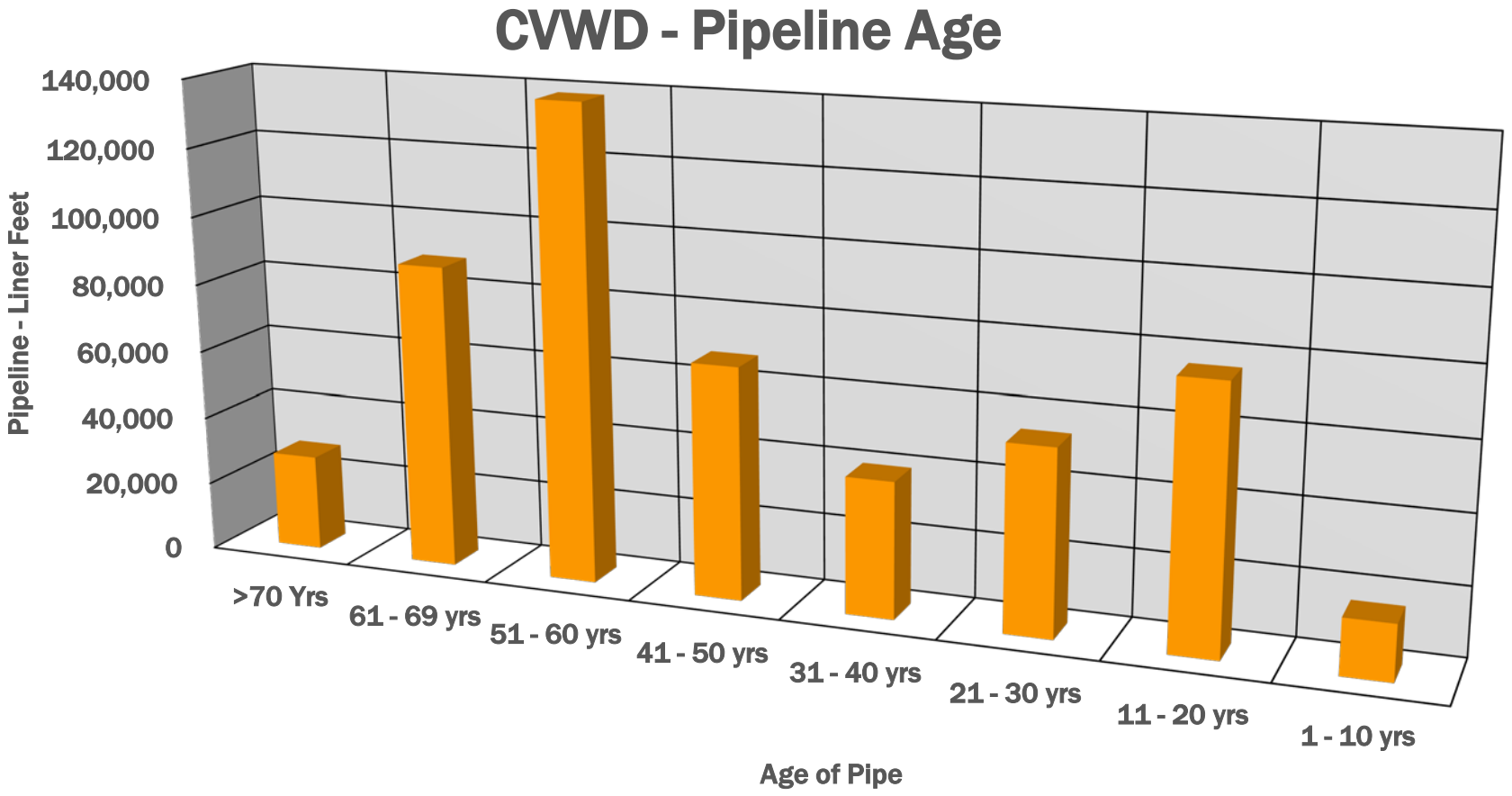
Pipeline Replacement

- **Steel Pipeline**
- **96.3 Miles of pipeline**
- **13% pipeline not interior coated – higher leaks**
- **Pipeline size – range – 2” dia. To 16” dia.**

Goals:

- **Replace pipeline 70 years or older over the next 5-years**
- **Replace about 1 mile (5,280 LF) pipeline/yr.**
- **Estimate annual cost - $2.5M to $2.8M/yr.**

WATER DISTRIBUTION



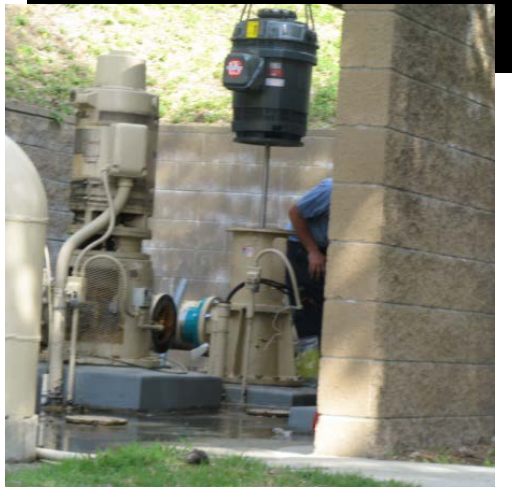
WATER DISTRIBUTION – BOOSTER PUMPS

Booster Pumps

- Pumps water from Water Supply Source to Reservoirs & Water Distribution
- 34 Booster Pumps
- 11 Pressure Zones
- 2 to 4 booster pumps per pressure zones
- 2000 feet of elevation
- Power Costs
  - SCE - $315,000/yr
  - Glendale - $410,000/yr

Goals:

- Replace one (1) Booster per year based on lowest pump efficiency.
- Replace motors with super premium efficiency
- Reduce power costs based on “Time of Use” rates



WATER DISTRIBUTION BOOSTER STATION IMPROVEMENTS

Goals

1. Upgrade at a Booster Station site includes: New Building, New MCC, New Pumps & Motors & Site Improvements
2. Upgrade Booster Station Ranking
   a. Paschall Booster Station
   b. Edmund No. 2 Booster Station
   c. Cresta Heights Booster Station
3. Estimate Project Costs
   a. New MCC - $150,000 to $300,000
   b. New Bldg - $500,000 to $750,000
   c. New Pumps & Motors - $100,000 to $150,000
   d. Site Improvements - $125,000 to $250,000
   e. Estimate Cost Range - $875K to $1.45M

Booster Station Improvements

1. Buildings
   a. 2 existing sites
   b. 12 sites w/o Bldg
2. Electrical Motor Control Center (MCC)
   a. Last upgrade - 1995 to 1998
   b. Use standard equipment
   c. 3 MCC's upgraded in last 5 years
3. Site Improvements
   a. Improve site efficiency

WATER TREATMENT

1. Disinfection
   a. Chlorine & Chloramines
   b. 5 Disinfection Station
      1) Glenwood
      2) Mills
      3) Pickens Tunnel
      4) Oak Creek
      5) Ordunio
2. Nitrate Removal
   a. Glenwood - Resin
   b. Well 2 – Upgrade
   c. Mills Plant - New
3. Emerging contaminants
   a. Future

Goals

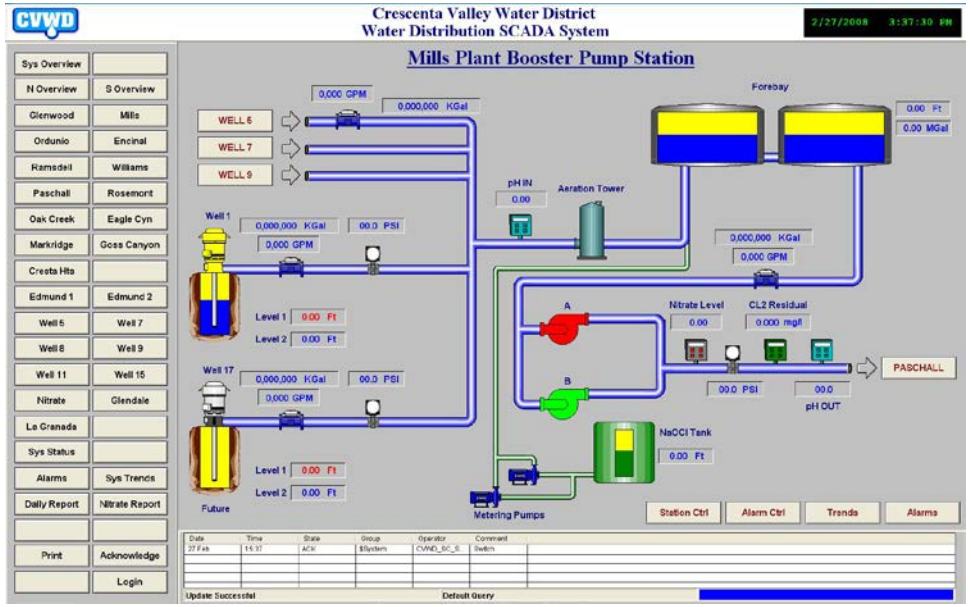
1. Conversion
   a. Chlorine
   b. Chloramines
2. Nitrate Removal
   a. Glenwood - Resin
   b. Well 2 – Upgrade
   c. Mills Plant - New
3. Emerging contaminants
   a. PFAS
   b. Future

TECHNOLOGY

1. SCADA System
   a. Tesco Equipment - 1996
   b. Proprietary Programming
2. SCADA Radio Communications
   a. 900 MHz Radio
   b. Interference
3. AMI
   a. Installed over 5,500 new meters
   b. Working on AMI Communications

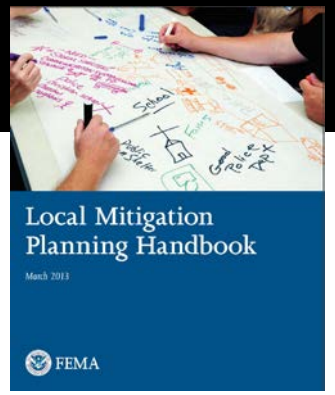
GOALS

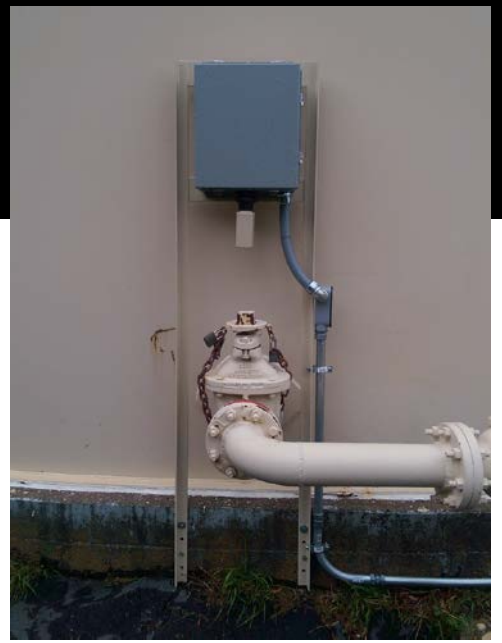
1. SCADA System
   a. Upgrade RTU/PLS
   b. Upgrade SCADA Alarms
2. SCADA Radio Communications
   a. Replace 900 MHz Radios
   b. Upgrade to long-term RF
3. AMI – 4 yr project
   a. Installation new meters
   b. Install AMI Communications
   c. Install Customer Portal
   d. Complete FY 24/25
4. GIS/Hydraulic Modeling
   a. Water Atlas
   b. Sewer Atlas



EMERGENCY RESPONSE/PUBLIC SAFETY

1. Seismic Sensors
   a. Turns inlet/outlet valve to save water inside reservoirs
   b. 10 sites
2. Local Hazardous Mitigation Plan
   a. FEMA/CalOSA Grant - $125,000
   b. Steering Committee
   c. Complete by October 2021
3. Emergency Elec. Generators
   a. 4 Portable
   b. 2 Stationary



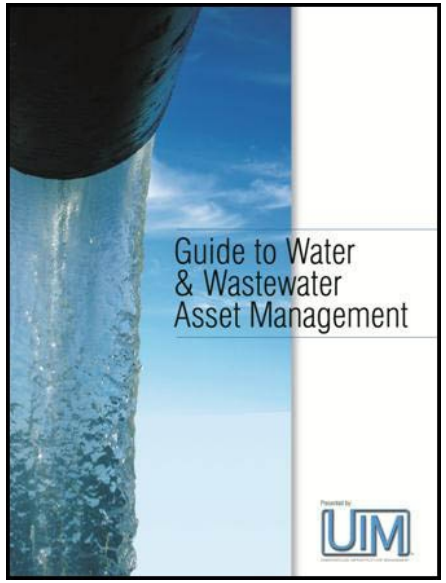


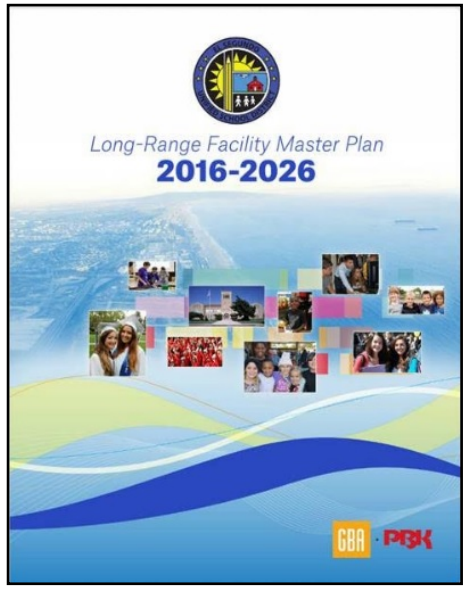
GOALS

1. Seismic Sensors
   a. Complete 4 sites
2. Local Hazardous Mitigation Plan
   a. Vulnerability
   b. Complete by October 2021
3. Security Cameras – All Sites
4. New Emergency Generators
5. FEMA Grants
   a. Pre-Disaster Mitigation

FACILITIES & PLANNING

1. **Facilities**
   a. 19 Sites
   b. Access Roads
   c. Landscaping
   d. Security/Fencing
   e. Equipment Storage
2. **Planning**
   a. Water Resources
   b. Asset Management
   c. New Groundwater Wells





GOALS:

1. **Facilities**
   a. Facilities Maintenance Study
   b. Upgrade Access Roads
   c. Upgrade Landscaping
2. **Planning**
   a. Water Resources
   b. Asset Management
   c. New Groundwater Wells

QUESTIONS