

LOMITA CITY COUNCIL WATER SUBCOMMITTEE MEETING

Discussion of the Water System

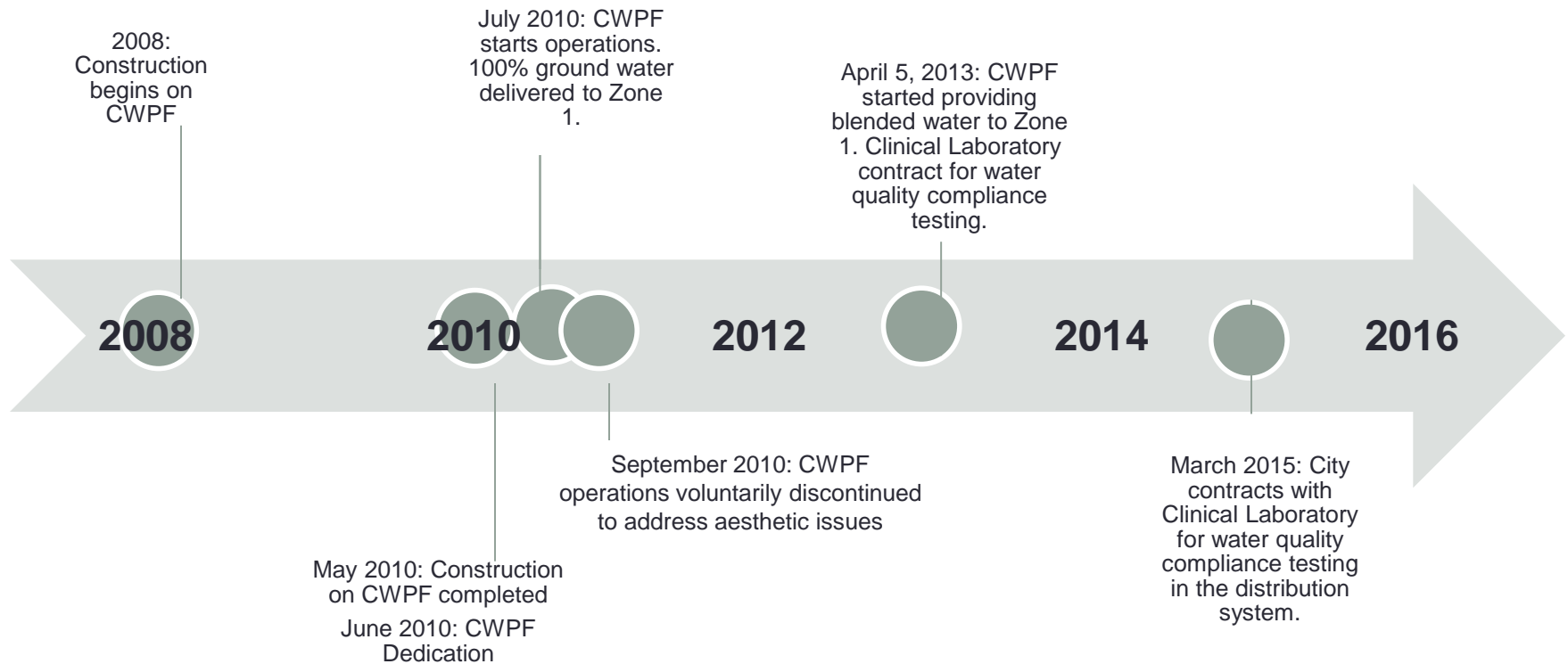
June 14, 2016



Meeting Overview

- History and current status of the water system
- Regulatory oversight and water quality testing
- Common water quality concerns
- Q & A

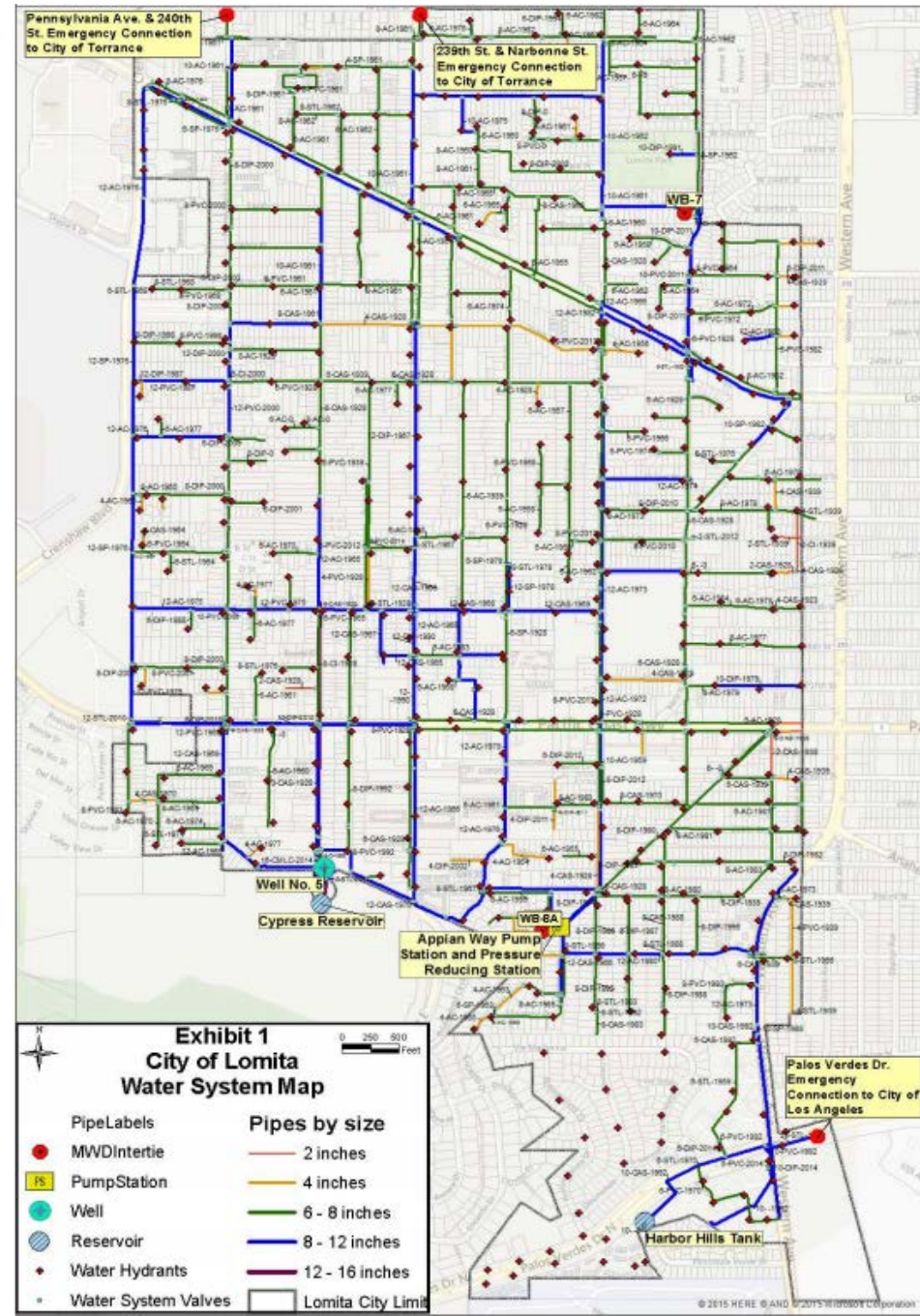
Recent Water System History



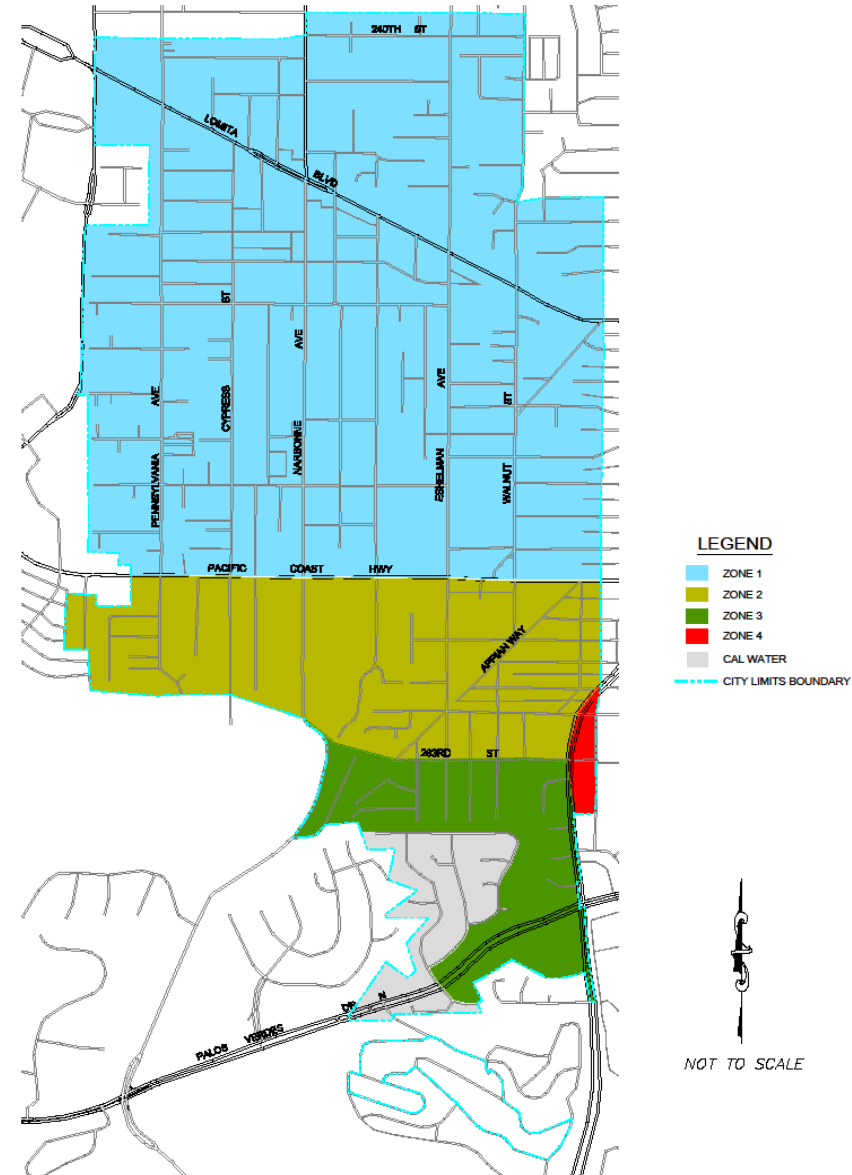
Water System General Background

- 20,256 residents over a service area of two square miles (2010 Census).
- 4,242 connections (3,935 residential, 307 non-residential).
- System consists of water mains ranging from 2-inch to 16-inches in diameter (approx. 43 miles), 797 valves, 470 hydrants, 55 flushing points, two reservoirs (Harbor Hills 100,000 gallons, Cypress 5.3 million gallons), two imported water connections with pressure reducing stations (WB-7 and WB-8), and one groundwater well. There are also four emergency interconnections with LADWP, Torrance, and WBMWD.
- Water distribution mains were installed between the early 1900s and today; 70 percent of the system was built between 1928 and 1970.
- The City's Water Division staff are certified by the State of California Operator Certification Program (a division of the State Water Resources Control Board) to operate, maintain and repair the water distribution system and CWPF.

System Map



Pressure Zones



Licensing

Employee	Distr.	Treat.
Mark Andersen	D3	T2
Justin Nguyen	D3	T3
Dan Mateik	D2	T2
David Huerta	D2	
David Bouk	D2	
Carlos Bobadilla	D1	
Ulises Escalona	D2	T2
Mark McAvoy	D2	
George Cambero (Waterworks - Contract)	D4	T3
Bret Kadel (Waterworks - Contract)	D5	T5

Third Party Oversight & Regulation

- CalEPA
 - State Water Resources Control Board
 - CA Drinking Water Division
- Samples sent to independent laboratory
 - Clinical Laboratory of San Bernardino, Inc.
 - Laboratory certified by State Water Resources Control Board Environment Laboratory Accreditation Program – Certification No. 1088
 - Weekly, monthly, quarterly, and annual sampling/testing

Drinking Water Standards

- Drinking water standards are called maximum contaminant levels (MCLs), and they are found in Title 22 of the California Code of Regulations
- Primary MCLs address health concerns
 - California is more stringent than the federal EPA
- Secondary MCLs address aesthetics, such as taste and odor, that are not health related
 - Taste, Odor, Total Dissolved Solids (TDS – minerals, salts)
- The City also tests for some items that are neither primary nor secondary MCLs, such as hardness (CaCO_3)

Primary Water Standards (MCLs)

(Units are in milligram per liter (mg/L), unless otherwise noted.)

INORGANIC CHEMICALS	
	MCL
Aluminum	1
Antimony	0.006
Antimony	0.0007
Arsenic	0.010
Barium	1
Beryllium	0.004
Cadmium	0.005
Chromium, Total	0.05
Chromium, Hexavalent	0.010
Cyanide	0.15
Fluoride	2
Mercury (inorganic)	0.002
Nickel	0.1
Nitrate (as nitrogen, N)	10 as N
Nitrite (as N)	1 as N
Nitrate + Nitrite (as N)	10 as N

INORGANIC CHEMICALS (CONT.)	
	MCL
Perchlorate	0.006
Selenium	0.05
Thallium	0.002

COPPER AND LEAD	
<i>Values referred to as MCLs for lead and copper are not actually MCLs; instead, they are called "Action Levels" under the lead and copper rule</i>	
	AL
Copper	1.3
Lead	0.015

DISINFECTION BYPRODUCTS	
	MCL
Total Trihalomethanes	0.080
Haloacetic Acids (five) (HAA5)	0.060
Bromate	0.010
Chlorite	1.0

RADIONUCLIDES		
	MCL	
Gross alpha particle activity	15	pCi/L
Radium-226 + Radium-228	5	pCi/L
Strontium-90	8	pCi/L
Tritium	20,000	pCi/L
Uranium	20	ug/L

BACTERIOLOGICAL SAMPLING (TOTAL COLIFORM RULE)	
	MCL
Total Coliform Bacteria (% of positive samples)	No more than 5% of monthly samples can be positive for total coliforms
Fecal coliform and <i>E. coli</i>	Two consecutive Total Coliform-positive samples, one of which contains Fecal Coliform/ <i>E. Coli</i> constitutes an acute MCL violation.

Primary Water Standards (MCLs) (cont'd)

(Units are in milligram per liter (mg/L), unless otherwise noted.)

ORGANIC CHEMICALS (a) VOCs	
	MCL
Benzene	0.001
Carbon tetrachloride	0.0005
1,2-Dichlorobenzene	0.6
1,4-Dichlorobenzene (p-DCB)	0.005
1,1-Dichloroethane (1,1-DCA)	0.005
1,2-Dichloroethane (1,2-DCA)	0.0005
1,1-Dichloroethylene (1,1-DCE)	0.006
cis-1,2-Dichloroethylene	0.006
trans-1,2-Dichloroethylene	0.01
Dichloromethane (Methylene chloride)	0.005
1,2-Dichloropropane	0.005
1,3-Dichloropropene	0.0005
Ethylbenzene	0.3
Methyl tertiary butyl ether (MTBE)	0.013
Monochlorobenzene	0.07
Styrene	0.1

ORGANIC CHEMICALS (a) VOCs (CONT.)	
	MCL
1,1,2,2-Tetrachloroethane	0.001
Tetrachloroethylene (PCE)	0.005
Toluene	0.15
1,2,4-Trichlorobenzene	0.005
1,1,1-Trichloroethane (1,1,1-TCA)	0.2
1,1,2-Trichloroethane (1,1,2-TCA)	0.005
Trichloroethylene (TCE)	0.005
Trichlorofluoromethane (Freon 11)	0.15
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)	1.2
Vinyl chloride	0.0005
Xylenes	1.75

ORGANIC CHEMICALS (b) SOCs	
	MCL
Alachlor	0.002
Atrazine	0.001

ORGANIC CHEMICALS (b) SOCs (CONT.)	
	MCL
Bentazon	0.018
Benzo(a)pyrene	0.0002
Carbofuran	0.018
Chlordane	0.0001
Dalapon	0.2
1,2-Dibromo-3-chloropropane (DBCP)	0.0002
2,4-Dichlorophenoxyacetic acid (2,4-D)	0.07
Di(2-ethylhexyl)adipate	0.4
Di(2-ethylhexyl)phthalate (DEHP)	0.004
Dinoseb	0.007
Diquat	0.02
Endrin	0.002
Endothal	0.1
Ethylene dibromide (EDB)	5E-05
Glyphosate	0.7

ORGANIC CHEMICALS (b) SOCs (CONT.)	
	MCL
Heptachlor	1E-05
Heptachlor epoxide	1E-05
Hexachlorobenzene	0.001
Hexachlorocyclopentadiene	0.05
Lindane	0.0002
Methoxychlor	0.03
Molinate	0.02
Oxamyl	0.05
Pentachlorophenol	0.001
Picloram	0.5
Polychlorinated biphenyls (PCBs)	0.0005
Simazine	0.004
2,4,5-TP (Silvex)	0.05
2,3,7,8-TCDD (dioxin)	3x10 ⁻⁸
Thiobencarb	0.07
Toxaphene	0.003

Secondary Water Standards (MCLs)

(Units are in milligram per liter (mg/L), unless otherwise noted.)

	MCL	
Aluminum	0.2	
Color	15	Units
Copper	1	
Foaming Agents (MBAS)	0.5	
Iron	0.3	
Manganese	0.05	
Methyl-tert-butyl ether (MTBE)	0.005	
Odor	3	Units
Silver	0.1	
Thiobencarb	0.001	
Turbidity	5	Units
Zinc	5	

	Recommended	Upper
Total Dissolved Solids (TDS)	500	1,000
Specific Conductance	900	1,600
Chloride	250	500
Sulfate	250	500

	Soft	Moderately Hard	Hard	Very Hard
Total Hardness	<75	75 - 150	150 - 300	>300

Consumer Confidence Report

TO OUR CUSTOMERS:

Each year, the City provides this report to inform you, our customers, about the quality of the water you drink. We are proud to report that in 2015, your water met or surpassed all health-based drinking water standards. In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (USEPA) and the State Water Resources Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Board regulations also establish limits for contaminants in bottled water that provide the same protection for public health. To meet these regulations, the City contracts with certified laboratories to perform water quality testing. We welcome your thoughts and suggestions to improve our service and delivery of the earth's most precious resource. Please visit our website, www.lomita.com/cityhall, or attend our City Council meetings (see additional information in this brochure).

Thank you for taking the time to read our annual water quality report. We look forward to another year of providing you with safe, reliable drinking water.

Este informe contiene información muy importante sobre su agua potable. Tradúscalo o bábale con alguien que lo entienda bien.

SOURCES OF WATER

The Metropolitan Water District of Southern California (MWD) is a consortium of 26 cities and water districts that provides drinking water to nearly 19 million people in Southern California, including West Basin Municipal Water District (WBMWD) from whom the City purchases treated water. MWD supplies the City with water treated at the Weymouth Treatment Plant. Most of the water treated at this plant travels down the Colorado River and flows through MWD's 242-mile Colorado River Aqueduct. Some MWD water also comes from Northern California rivers and streams that feed the State Water Project's 444-mile California Aqueduct. The plant uses conventional techniques to treat your water. This includes the coagulation process where aluminum sulfate and other chemical additives cling to particles in the water, forming large particles that settle to the bottom of large sedimentation basins. Then, the water flows through coal and sand for filtration. Chloramine (chlorine plus ammonia) disinfection is used to kill remaining microorganisms, such as bacteria, and to keep the water safe as it travels to your tap.

The Water Replenishment District of Southern California (WRD) manages groundwater for nearly four millions residents in 43 cities of Southern Los Angeles County. There is one groundwater source well within the City, Well No. 5, with an approximate production capability of 1,500 gallons per minute (GPM). The City has adjudicated rights to 1,352 acre-feet of groundwater.

Pressure Zone I is located north of PCH to the northern City limit. It is the largest pressure zone, serving approximately 80% of Lomita's population. Zone I is supplied by blending purchased water from WBMWD and groundwater from Well No. 5. The Cypress Water Production Facility (CWPF) treats Well No. 5 for iron, manganese, and color. The treatment process consists of oxidation and precipitation with a mix oxidant solution, filtration of the precipitates through a manganese greensand and anthracite pressure filter, chloramine disinfection to kill the remaining microorganisms, and an ortho/polyphosphate injection to inhibit calcium hardness and minimize corrosion. The treated groundwater is blended with WBMWD purchased water and is monitored to ensure primary water quality standards. Water service connections within the City's remaining Pressure Zones II, III, and IV were supplied with all purchased water from WBMWD in 2015.

In December 2002, MWD completed a source water assessment of its Colorado River and State Water Project supplies. Colorado River water is considered to be most vulnerable to recreation, urban and storm water runoff, increasing urbanization in the watershed, and wastewater. The State Water Project is considered to be most vulnerable to urban and storm water runoff, wildlife, agriculture, recreation, and wastewater. A copy of the assessment can be obtained by contacting MWD at (213) 217-6850. An assessment of the City's groundwater well was completed in 2014. The well is considered vulnerable to various contaminating activities including the following: automobile-repairs, gas stations, dry cleaners, landfills/dumps, and other chemical/industrial activities. A copy of the complete assessment may be viewed at: State Water Resources Control Board, Los Angeles Region, 320 West Fourth Street, Suite 200, Los Angeles, CA 90013 or by phone at (213) 576-6600.

CITY OF
LOMITA



**ANNUAL WATER
QUALITY REPORT**
Water testing performed in 2015

Public Information & Contact Information

Regular City Council Meetings are held on the 1st and 3rd Tuesdays of each month at 6:30 p.m. at Lomita City Hall (24300 Narbonne Avenue, Lomita, CA 90717).

The City of Lomita welcomes your comments and questions about water quality. For questions or comments regarding water quality or this report, please contact the City of Lomita Public Works Department at (310) 325-7110. To view this report on the internet, please visit www.lomita.com/cityhall.

Water System Sources

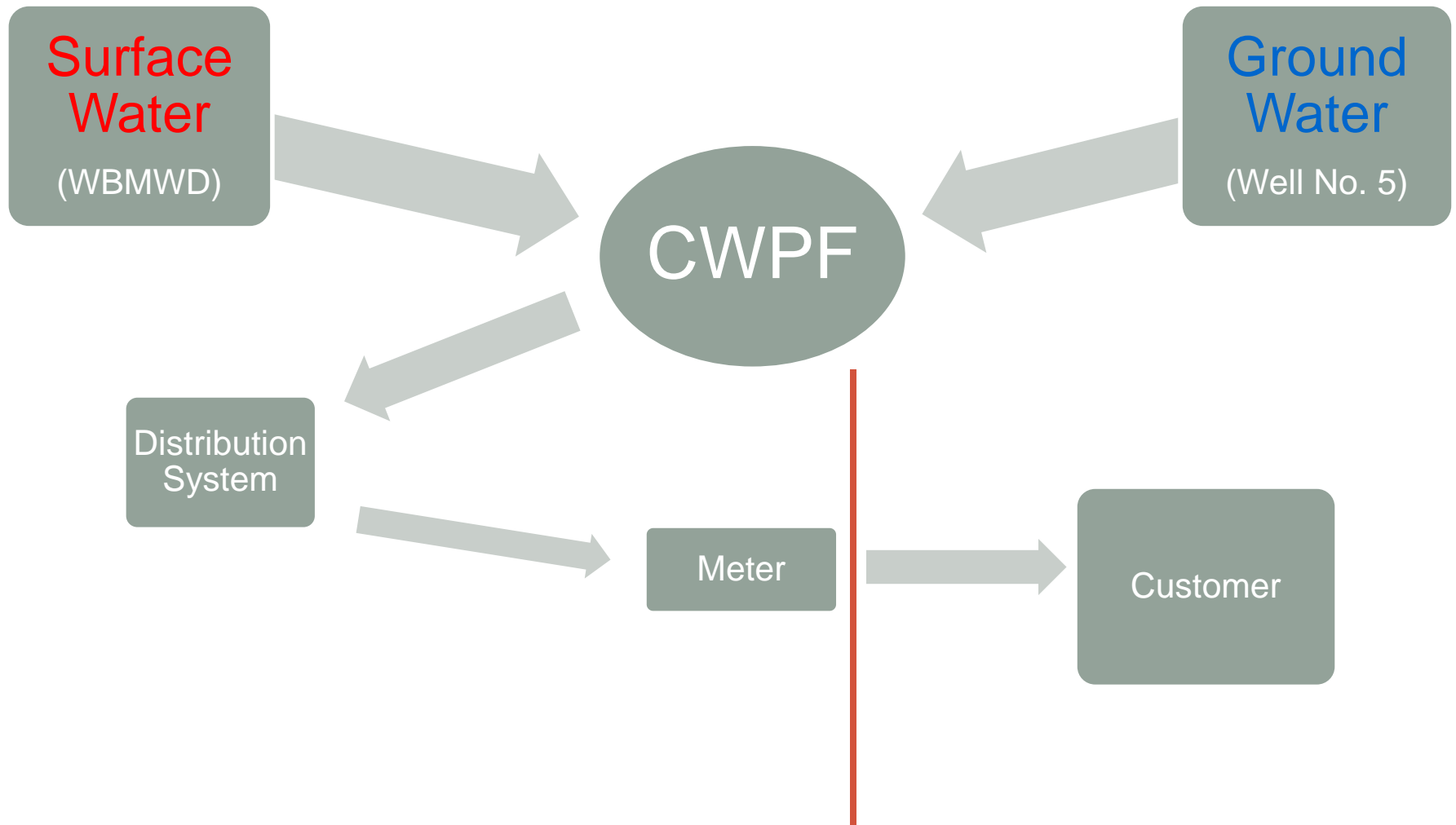
- Imported Surface Water – West Basin Municipal Water District (WBMWD)
- Groundwater
 - West Coast Groundwater Basin
 - Lomita Well No. 5
- Blended Operations
 - North of PCH – generally 50/50 mixture of surface and groundwater
 - South of PCH – generally 100% surface water



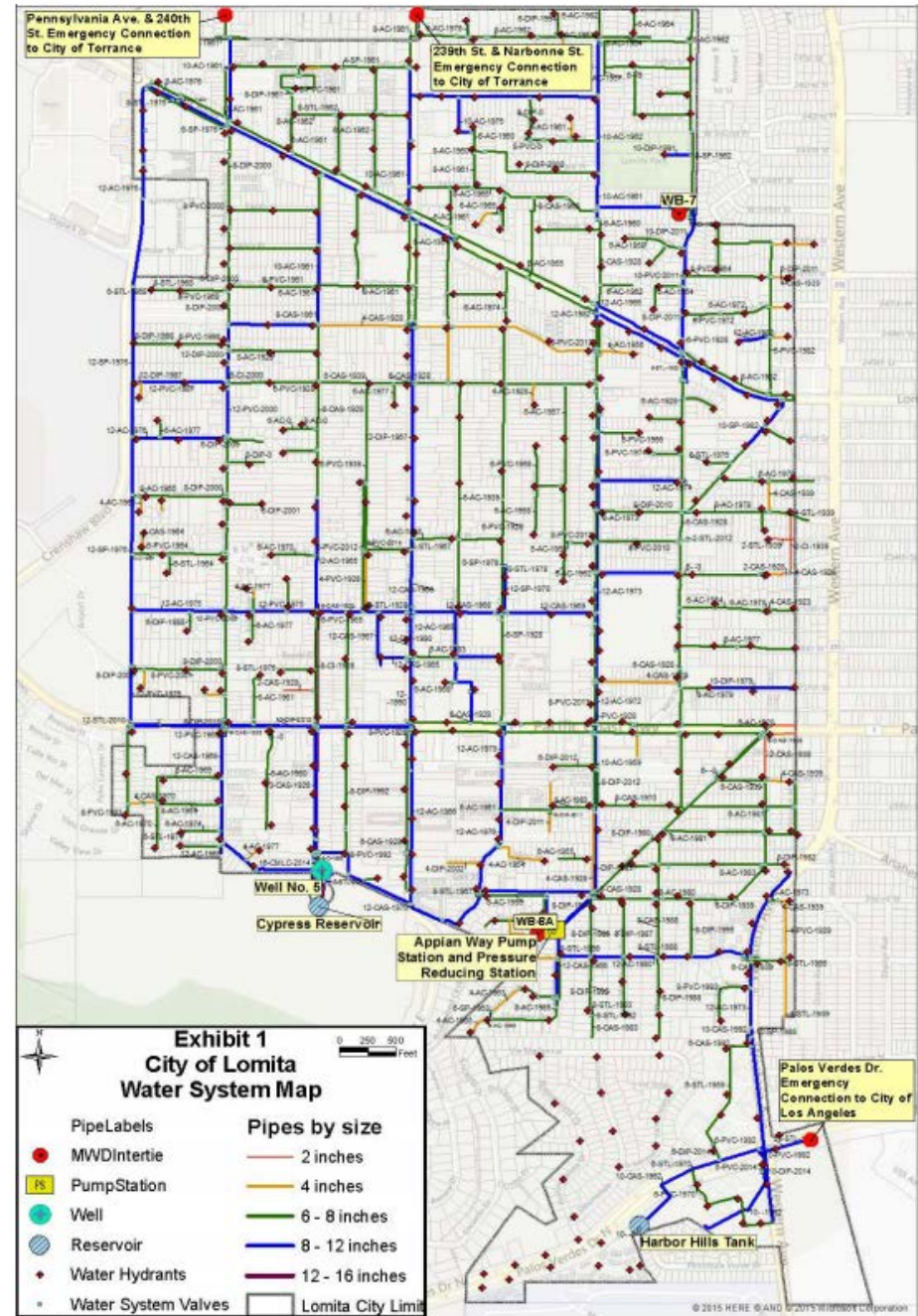
Water System Sources (cont'd)

- City owns 1,352 Acre Feet of Adjudicated Water Rights (allowable pumping) in the West Coast Groundwater Basin.
- One acre feet = 325,851 gallons (enough to serve two to three families per year)
- Maximum Surface Water Allocation (WBMWD) – Upper limit during the 2015-16 fiscal year of 1,663 Acre Feet due to drought allocation
- Annual Citywide Demand – Varies between 2000 and 2400 Acre-Feet (conservation, drought conditions)

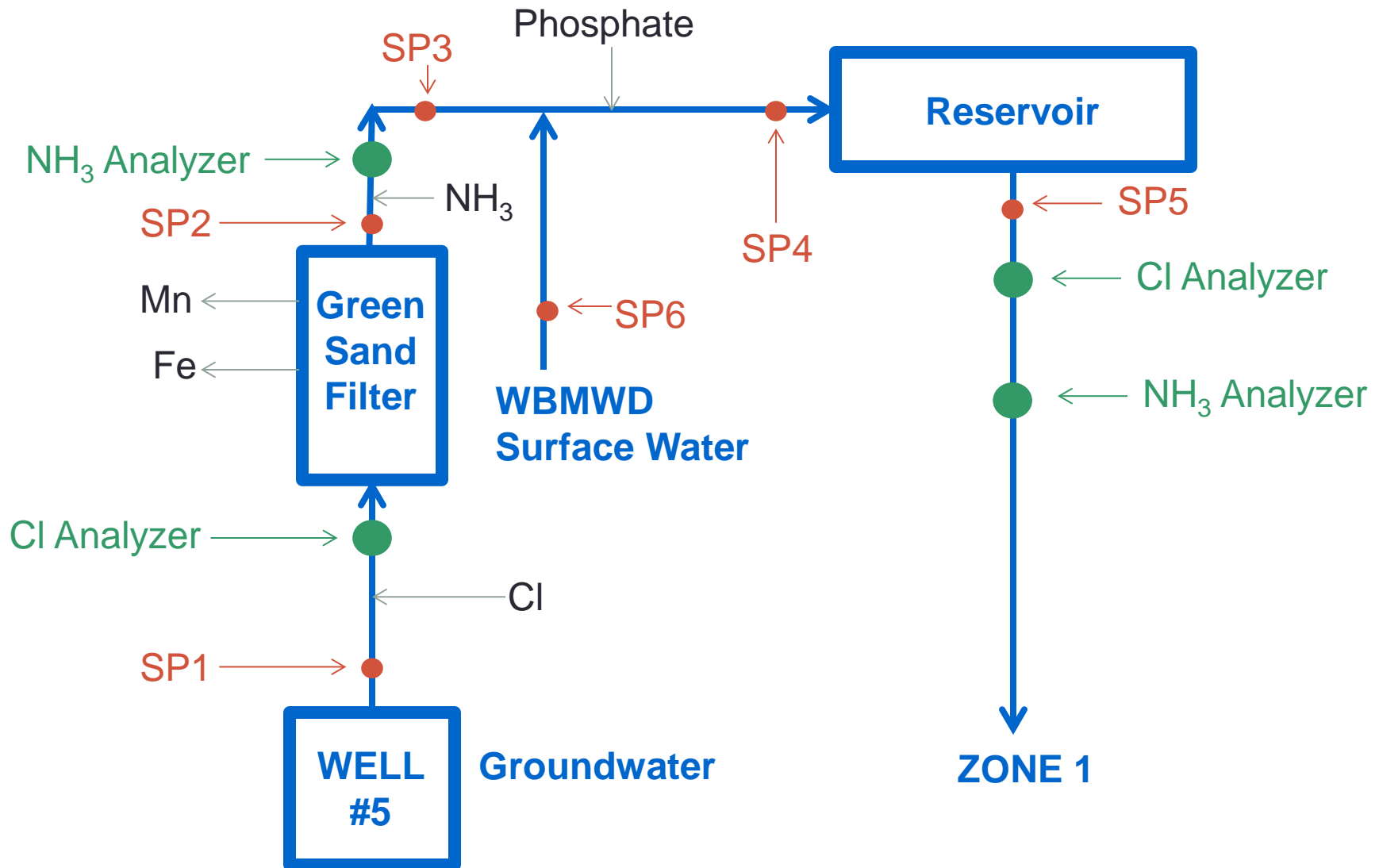
From Source to Tap



System Map



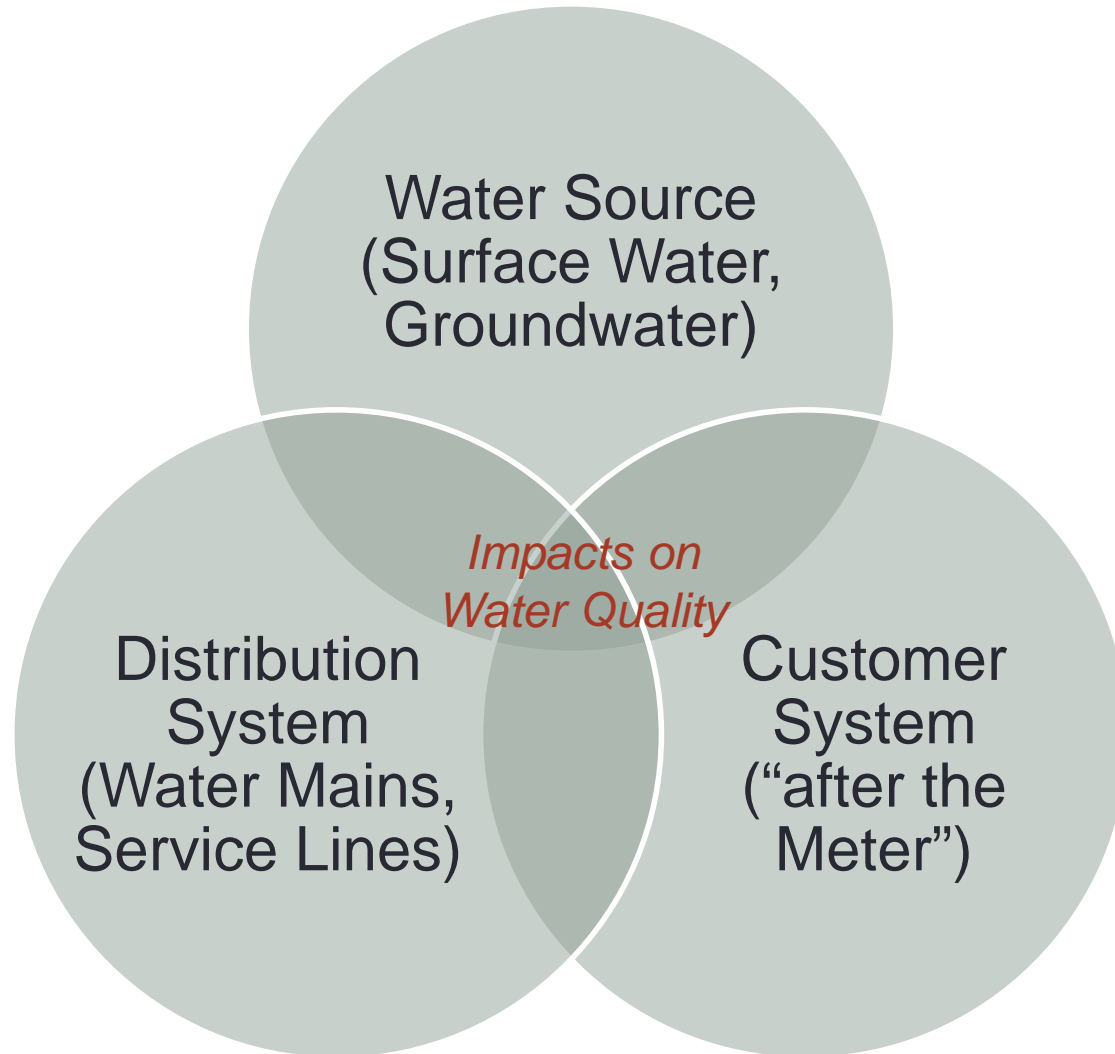
Cypress Water Production Facility



Common Water Quality Concerns

- Odor
 - “Sulfur” or “Earthy”
 - “Rotten Egg”
 - “Chlorine”
- Taste
 - Metallic
 - Other
- Color
 - Orange, Rust
 - Sediment (Black/Brown)
 - Cloudy
- Total Dissolved Solids (TDS)
 - Minerals and Salts
 - 500 vs 1000 vs 1500
- Hardness
 - White Film / White Spots
 - Groundwater vs Surface Water
- Chlorine Residual
 - High Residual vs. Low Residual
- Flushing
- Aquifer/ Groundwater Quality

Impacts on Water Quality– 3 Factors



Impacts on Water Quality (cont'd)

- Customer System (“after the meter”)
 - Plumbing Issues: Older piping may leak, cause taste and odor issues, old galvanized or lead piping
 - Fixtures/Appliances: Hot water heaters should be drained/serviced annually, filtration systems should be serviced and filters should be changed regularly/more often
 - Water softening systems – treats *hardness* only

Recent Improvements and Future Plans

- Water Source
 - CWPB Modifications and Upgrades – Recent and Planned
 - Hazen and Sawyer Water Quality Work – Future Projects
- Distribution System
 - Recently Completed New Water Mains
 - Oak St, Eshelman Ave, PCH – City limits to Narbonne, Feijoa Ave, 254th St
 - Water Master Plan – FY 2016/17
 - Forrester Dr, 253rd Place Area, PCH – Narbonne to Eshelman, Walnut St, Reed St
 - SCADA System Upgrades
- Customer Systems
 - Dependent on You!



Hazen and Sawyer Scope of Work

- **Task 1** - Chlorine demand characterization at CWPF
- **Task 2** - Assessment of a treatment technology for removing the organic sulfides (secondary MCLs) from groundwater
- **Task 3** - Assessment of additional treatment processes that may help improve the secondary MCLs of various blends of water
- **Task 4** - Revision of design at CWPF to accommodate any changes and modifications
- **Task 5** - Development of pipeline alignment design and cross section in Chevron property for license agreement to bring in WBMWD water to new blending location