

# Kimberly Well 1A PFAS Water Treatment Plant

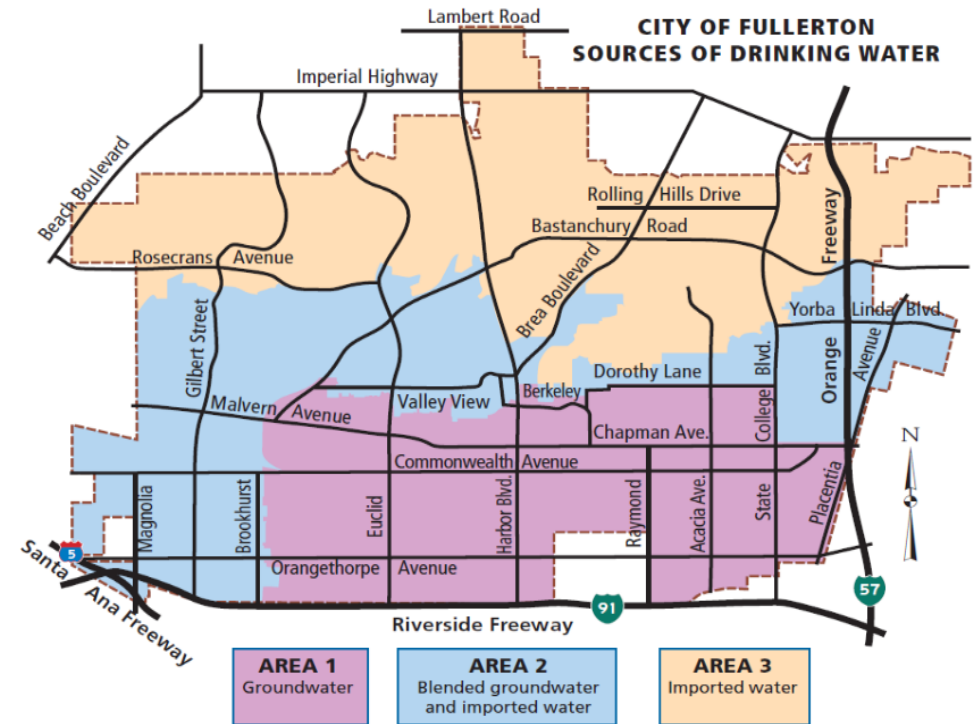
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July 20, 2021



# Fullerton's Sources of Water

- The City relies on a combination of imported water and local groundwater to meet its water needs.
  - 75% groundwater
  - 25% imported
- The City partners with two primary agencies
  - Orange County Water District (OCWD) – Groundwater
  - Metropolitan Water District of Southern California (MWD) – Import Water
- Goal is to provide a safe and reliable water supply that will continue to serve the community in periods of drought and shortage.
- Groundwater is local, reliable, and least expensive source of water





# PFAS – “Forever Chemical”

PFAS = Per- and Polyfluoroalkyl Substances (family of 1000s of chemicals)

PFOA = Perfluorooctanoic Acid ( $C_8HF_{15}O_2$ )

PFOS = Perfluorooctane Sulfonate ( $C_8HF_{17}O_3S$ )

PFBS = Perfluorobutanesulfonic acid ( $C_4HF_9O_3S$ )



PFAS are a group of man made chemicals. Since the 1940's, PFAS have been manufactured and used in various industries worldwide. PFOA and PFOS have been extensively tested and found to be persistent in the environment and human body.





# Kimberly Well 1A

- Produces 8% to 16% of City's total water supply (1,900 – 2,800 afy)

Chemical	NL (ppt)	RL (ppt)	Average Test Result (ppt)*
PFOA	5.1	10	9.5
PFOS	6.5	40	22
PFBS	500	5000	4.2

\*Apr 2020 – Oct 2020



**Response Level** = threshold at which state recommends water not served to the public w/o treatment or blending.



## OCWD Partnership

- Per Agreement, Orange County Water District (OCWD) led the planning, designing, and construction efforts of new treatment facility
- Per Agreement, City of Fullerton will assume ownership and operation and maintenance of new plant upon completion for a 30-year period
- OCWD funded the construction and will fund a portion of future maintenance
  - Ultimately paid for by OCWD agencies, including Fullerton, through groundwater replenishment rates



# Design

- May – September 2020
- Selected treatment was ion exchange (IX) preceded by bag filters due to cost, effectiveness, and space requirements
- Ion exchange treatment will reduce PFOA and PFOS levels to non-detect ( $\leq 2$  ppt)

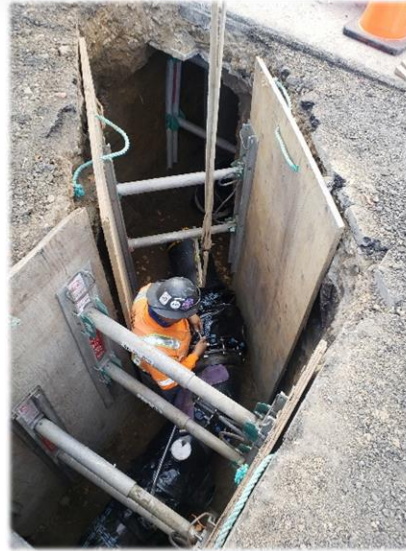






# Construction

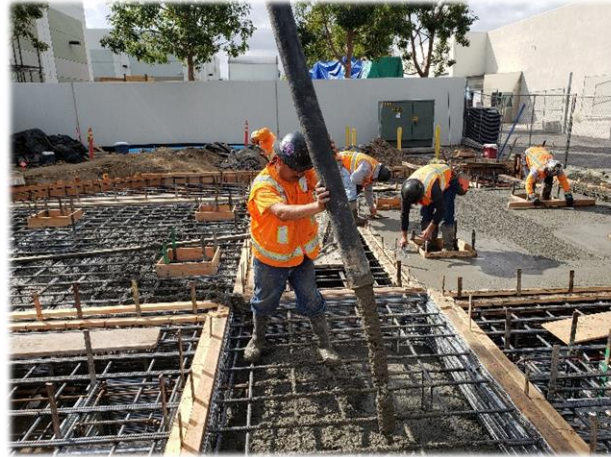
- Began November 2020
- Treatment Plant went online on June 30, 2021
- IX Effluent tested non-detect for PFAS
- Orange County's first wellhead treatment plant to remove PFOA and PFOS







# Construction (Cont'd)







# Construction (Cont'd)







# Construction (Cont'd)







# PFAS – Websites

- <https://www.cityoffullerton.com/government/departments/public-works/water-system/water-quality/understanding-pfas>

<https://www.ocwd.com/what-we-do/water-quality/pfoapfos/>

- [https://www.waterboards.ca.gov/drinking\\_water/certlic/drinkingwater/PFOA\\_PFS](https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/PFOA_PFS)



# Questions?

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