PFAS & LAKEWOOD WATER District

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LAKEWOOD WATER DISTRICT

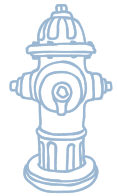
- Lakewood Water District was formed in 1943 governed by elected board of three commissioners
- City of Lakewood, Unincorporated Pierce County, small area of Town of Steilacoom & City of Tacoma - Population served is 66,000
- Wholesale Water provider to 5 utilities
  - Firgrove Mutual Water, Town of Steilacoom, Spanaway Water Co, Summit Water, & Washington Water
  - Population Served 70,000

35 Staff Members
6 Depts.

13 Tanks
28.3 MG storage

31 Active Wells
Capacity to pump
37 mgd

275 Miles of
Transmission Main



2,087
Hydrants

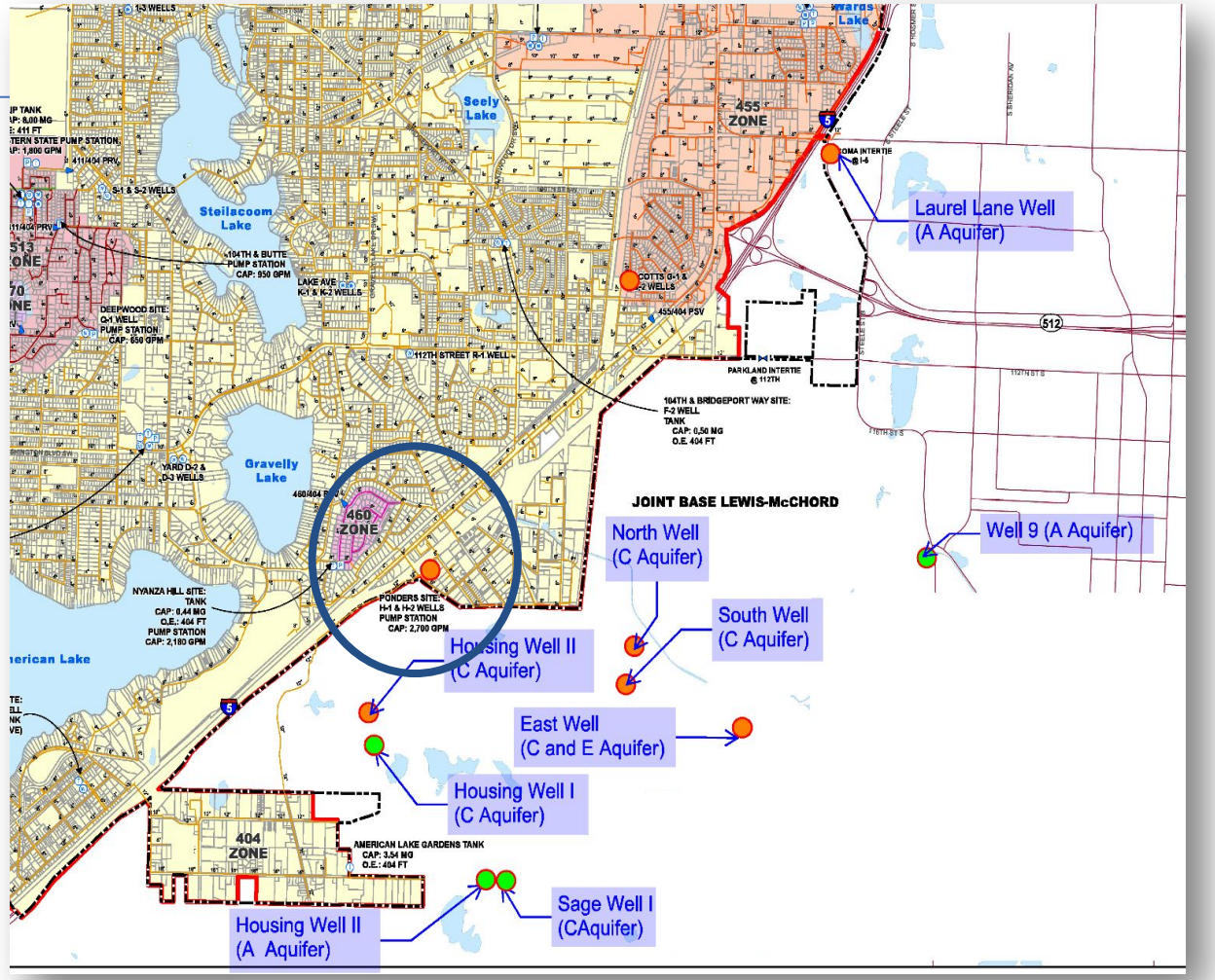
17,193
Svc. Connections

PER- AND POLYFLUOROALKYL SUBSTANCES - PFAS

PFAS in the regional groundwater supply to the District's wells came from firefighting foam used and disposed at Joint Base Lewis McChord.

2017
WHERE IT ALL BEGAN

- Summer of 2017, JBLM press release 5 wells with levels PFAS wells turned off
- 3 wells on McCord
- 2 wells on Ft Lewis
- District sampling in 2016 UCMR 3 low levels Ponders Well site combined 46.5 and 50.5 H-1 & H-2

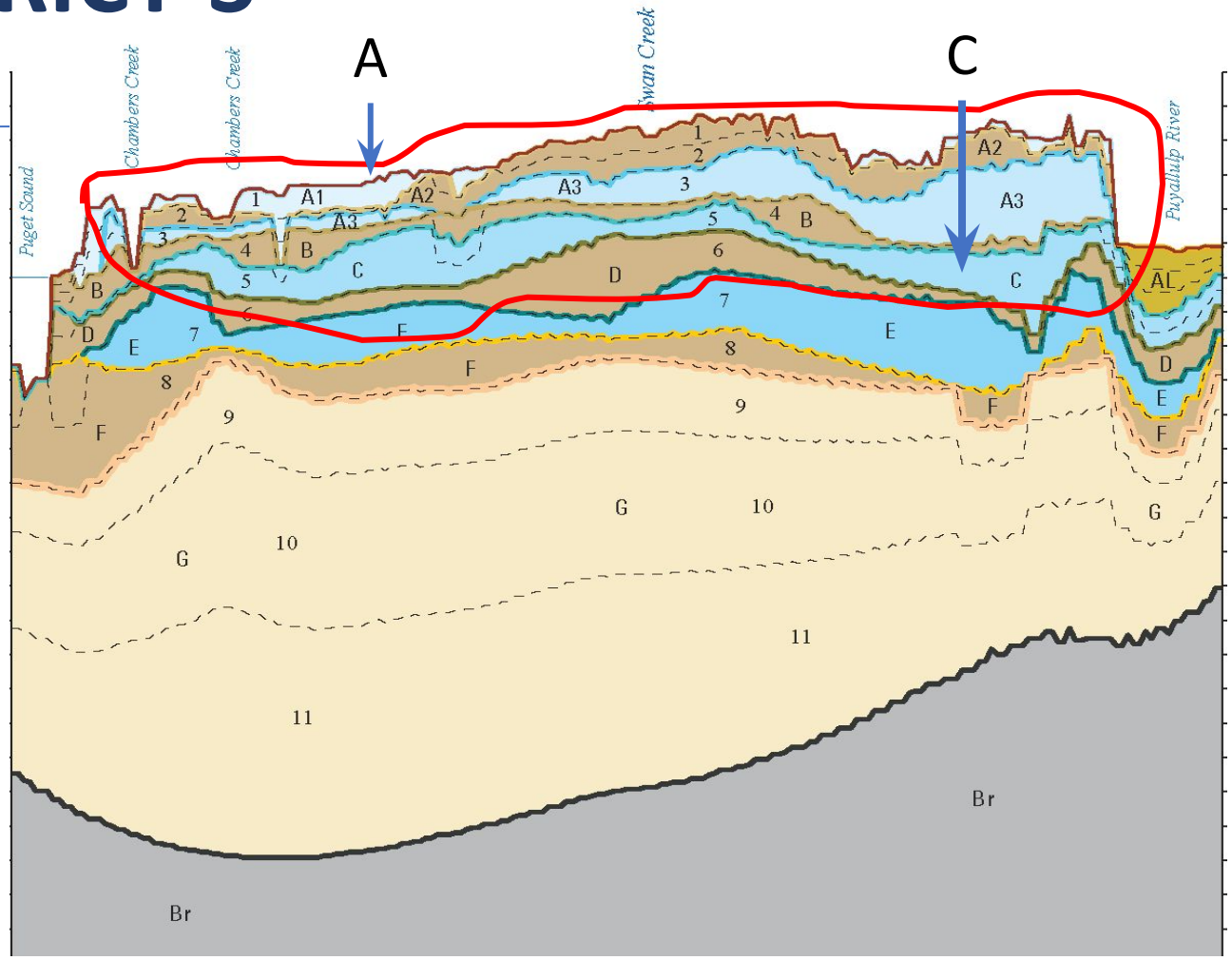


LAKEWOOD WATER DISTRICT'S WATER SOURCES

Lakewood has 31 wells drawing from four aquifers

We use the A, C, E & G aquifers

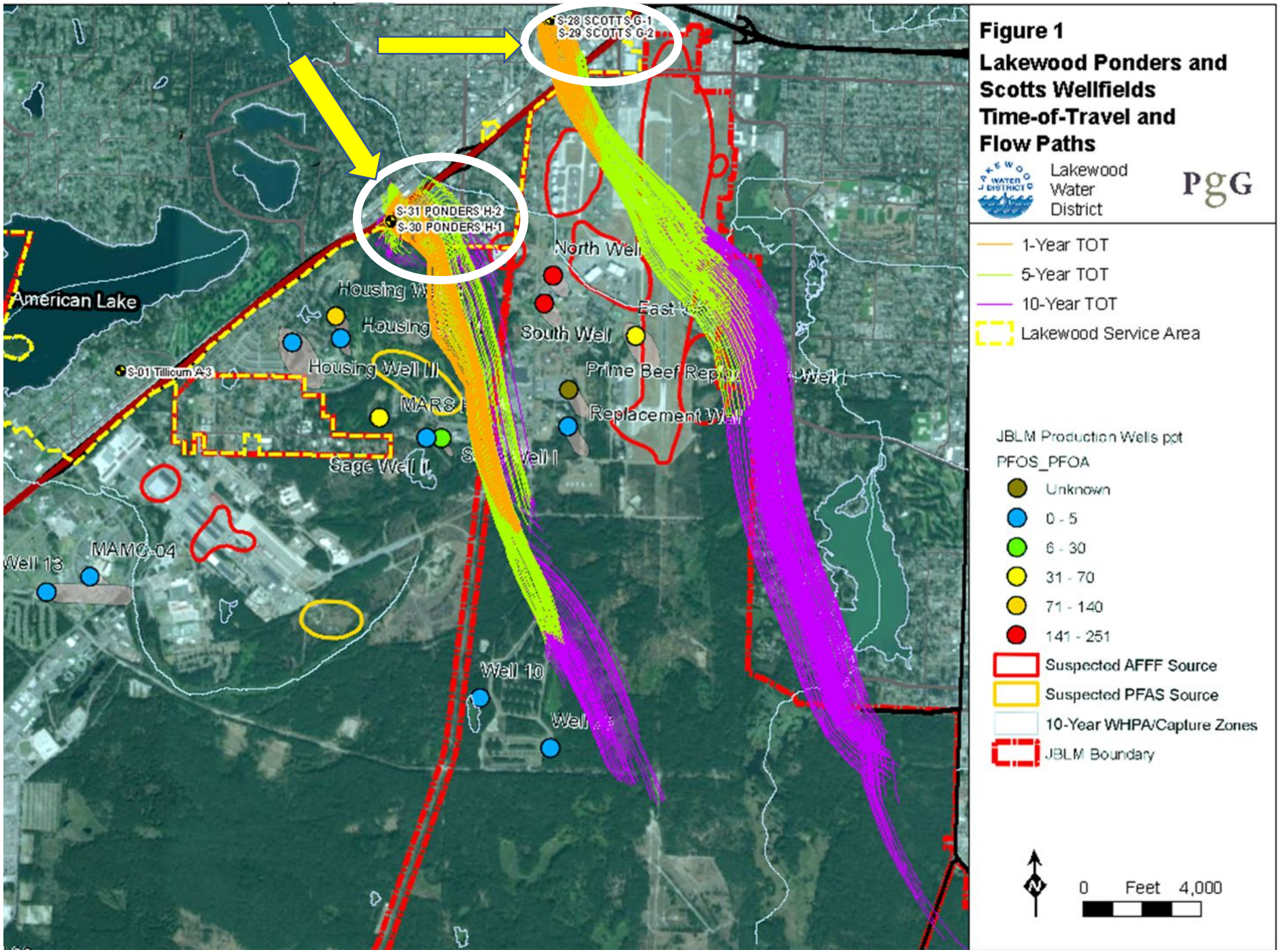
Only the shallowest aquifer is known to contain PFAS—affecting 7 wells



FLOW PATH FROM JBLM

Ponders:
H-1 & H-2

Scotts:
G-1 & G-2



2017 THRU 2019

2017 - present Transparency and facts to our customers supported by Commissioners. Continued transparency with Customers, Speaking to Community Service Groups. Quarterly newsletter, annual report, website.

2017 EPA LHAL 70 ppt - UCMR 3 results **below** PPT Ponders H-1 & H-2

2017 Increase testing H-1 & H-2 and wells closest to JBLM

2017-2019 DOH support and worked together messaging QA & QC

2018 JBLM starts with the CERCLA Process (10-12 years). Still no communication with JBLM

2018 PFAS Sampling of sources varied, monthly, quarterly, and annually. Increase of levels, Board policy of 65 ppt shutoff well.

2018 Ponders Wellsite H-1 & H-2 were at 63 ppt Board of Commissioners decided to turn wells of at 65 ppt. Due to the levels nearing 65 ppt District would install a GAC treatment system.

2019 Scotts Wellsite PFAS levels were fluctuating.

2019 Scotts Wellsite G-3 new well

LAKEWOOD WATER DISTRICT

PONDERS WELLSITE

Ponders was the first wellsite to approach EPA lifetime health advisory levels

- The well was immediately turned off and removed from service May 2018
- It took around 18 months to design and install a granular activated carbon (GAC) treatment system—the project was completed in November 2019, online 2020.
- GAC is a highly effective treatment—there is no detectable PFAS left in GAC-treated water at Ponders.

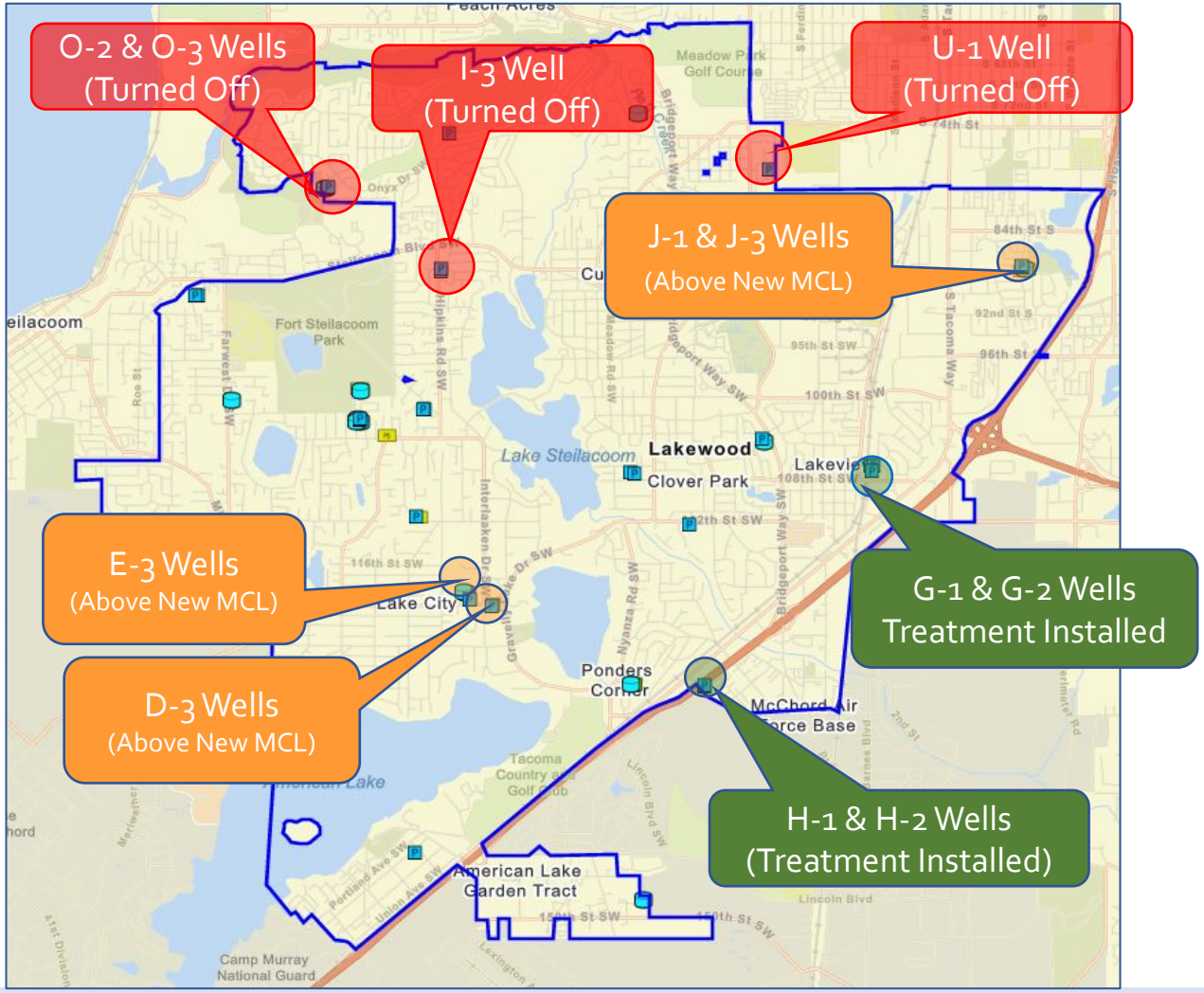
PFAS TESTING EXPANDED EPA LTHAL 2018-2022*

2018-2019
EPA LTHAL of 70 ppt for PFOA + PFOS; 14 Wells Tested; 9 with PFAS Detection, increasing concentrations in some wells.

2020-2021
EPA LTHAL of 70 ppt for PFOA + PFOS; 26 Wells Tested; 12 with PFAS Detection, increasing concentrations in some wells – **DESIGN BEGINS G-1/G-2 & TREATMENT INSTALLED H-1/H-2.**

2022
DOH SAL for 5 Compounds, Reduced Levels for PFOA and PFOS; 26 Wells Tested; 12 with PFAS Detections – **TURNED OFF I-3, U-1, O-2/O-3. TREAMENT INSTALLED G-1/G-2**

2023*
New MCL were announced – 4.0 ppt – **4 WELLS AFFECTED D-3, E-3, J-1/J-3.**



2020-2022

2020 Since 2016 JBLM no cooperation/minimal communication with the District

2020 Engaged **Senator Murray** and Cantwell, state legislators in the 28th and 29th

2020 Lawsuit filed in July of 2020 against the Federal Government and 13 AFFF Manufactures.

2020 Public out reached campaign. Board letter to Customers. Notice to the press.

2021 Senator Murry sponsored $2.0 million for 2 replacement wells through the Direct Appropriation

2022 WA SAL went into effect on January 1, 2022

STRATEGIES

Protec Your Health

Your water continues to be safe to drink. The water delivered to customers' taps meets all State and federal drinking water regulations to protect public health.

Reduce Cost

The District is seeking every avenue of funding to help pay for water quality protection projects necessary to respond to PFAS.

Ensure a Reliable Water Future

Future reliable water supply options are being evaluated by a team of engineers. The most cost-effective measures will be pursued.

Find Long-Term Solutions

District leadership is working closely with the State of Washington and others on new rules for water treatment and long-term cleanup of PFAS sites.

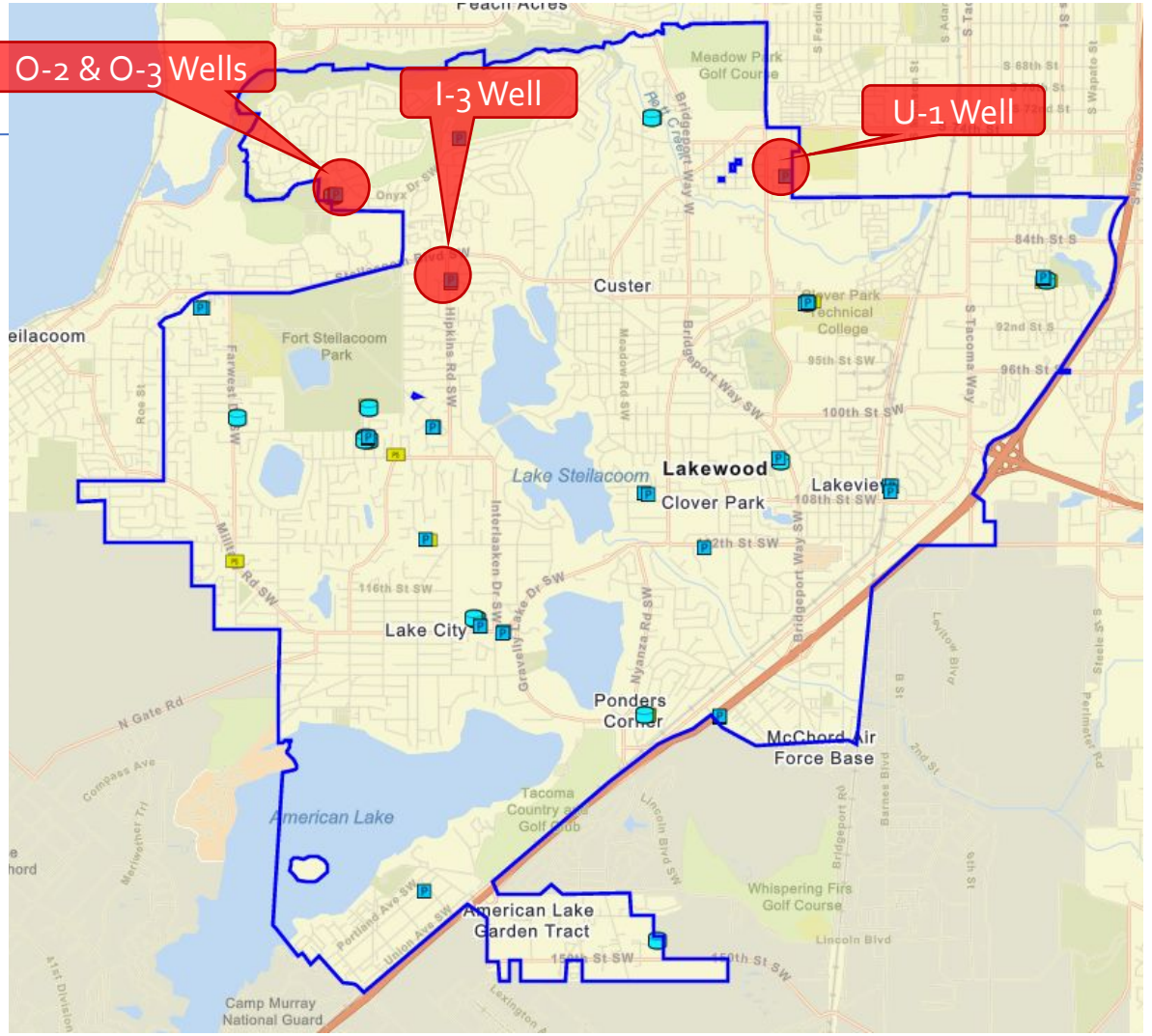
LAKEWOOD WATER DISTRICT

REVIEW – SOURCES IMPACTED STRATEGIES

- Three Water Quality Policies Considered By Board of Commissioners.
  1. EPA, Lifetime Health Advisory Level
  2. WDOH Proposed SAL
  3. Non-detect PFAS

***Board chose to adopt WDOH SAL - Turn off any sources at or above the SAL.**

U-1, O-2 & O-3, and I-3 wells were turned off **December 31, 2021, due to SAL levels.**



PROBLEM DEFINITION –SUMMARY

- An EPA HAL Policy does not create supply shortfalls near and long-term.
- A WDOH SAL Policy creates a risk of Maximum Day Demand supply shortfall of about 4.8 MGD or about 3,300 GPM by about year 2042.
- A Non-detect Policy creates a risk of supply/demand equilibrium by 2022 and a risk of Maximum Day Demand supply shortfall of about 9.2 MGD or about 6,400 GPM by about year 2042.
- GAC filtration was installed at four wells and source blending was implemented at one site to help offset impacts. This creates a maximum supply capacity surplus of 2.8 MGD or about 1,900 gpm by 2042.*

**based on 24 hrs. of pumping*

LAKEWOOD WATER DISTRICT

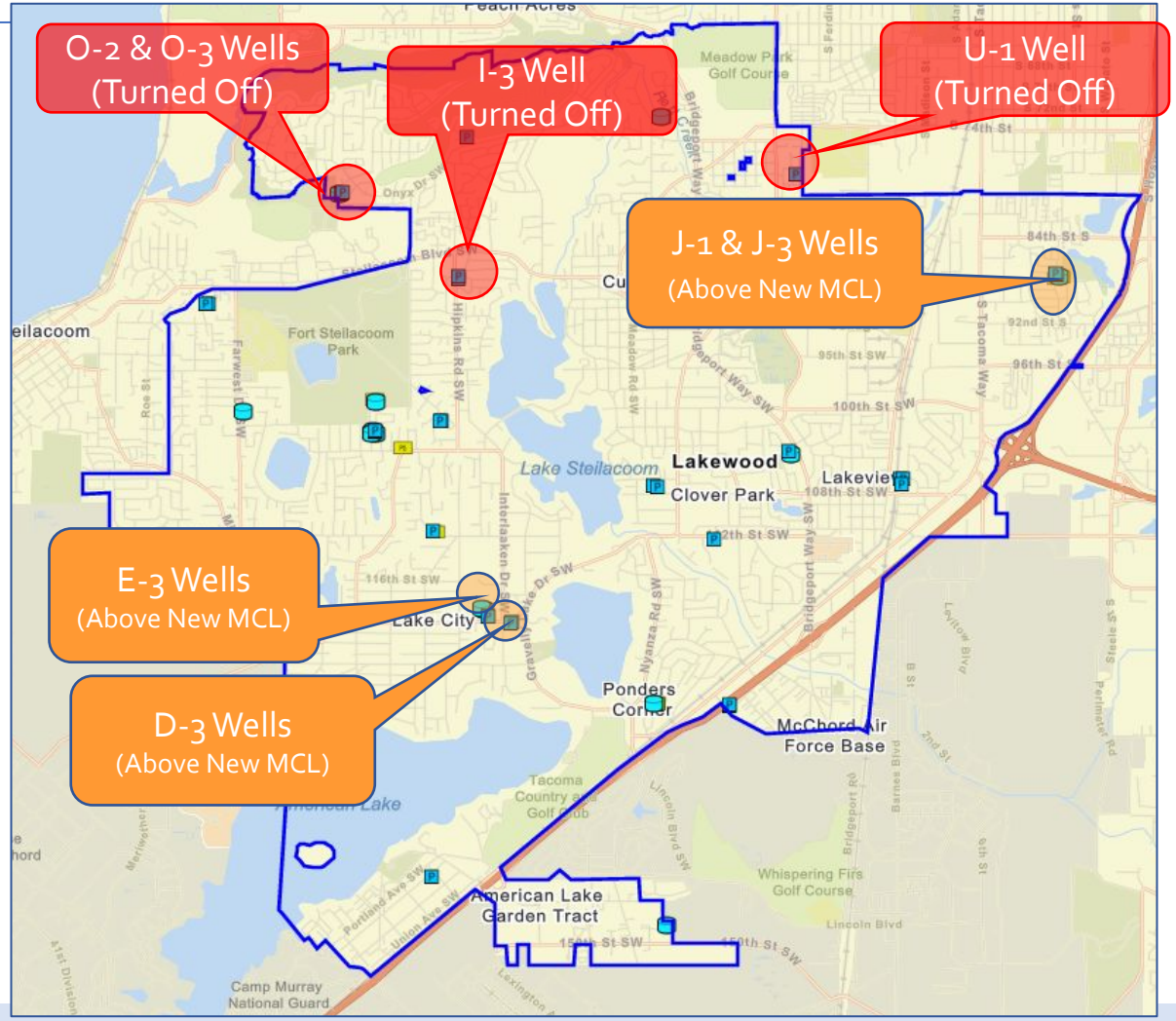
SCOTTS WELLSITE

Second GAC System, one well with PFAS levels above one below EPA's lifetime health advisory levels.

- An additional new well was drilled in the hopes of increasing capacity of the wellfield with non-PFAS impacted water.
- $5.56M received in funding from State budget.
- New well has no PFAS but has elevated levels of iron and manganese.

LOOKING AHEAD

- Drilling replacement wells. Senator Murry funding for G-4 and K-3. (***2023***)
- Complete remaining Existing Well withdrawal. (***2023***)
- Moving from the A/C aquifer to the E aquifer O-2, I-3. (***2023-2025***)
- Risks Iron/Maganeses treatment.
- No water or not enough water.
- Applying for grant funding and or loans for O-3 and U-1. (***2023***) Rep. Marilyn Strickland Community Project Funding.
- New EPA MCL 4.0 ppt (PFOA, PFOS) – Effects 4 more wells D-3, E-3, J-1 & J-3



RECAP “WHAT WE HAVE LEARNED”

COMMUNICATION – Staff – Board – Customers

TRANSPARENCY – Factual and clear information, when, how, and what you are doing.

ACTIONS AND PLANS (DOH) - Be consistent with messaging – Customers, staff, Board

TRUST AND CONFIDENCE – More information is better than less, PFAS is highly publicized and possible health risks.

“Which message do you want to have your ratepayers remember – from you or media?”

What everyone wants:
Public confidence in safe and reliable drinking water your utility provides.

QUESTIONS