Lynnfield Center Water District
Capital Improvement Program

YOUR TURN TO VOTE

May 2021 to May 2023: *What has changed, and why are we asking to borrow $17 million?*

May 2021

The customers of the Lynnfield Center Water District (LCWD) gathered in front of the Lynnfield High School (remember outdoor meetings?) to vote on the Capital Program to address **quantity** and **quality** challenges in the water system. With the positive vote to move the program forward, we have been hard at work designing the Glen Drive water treatment plant and the interconnection with Wakefield, all while moving through all the regulatory processes for joining the Massachusetts Water Resources Authority (MWRA).

Quantity Solution – Construct an interconnection with Wakefield to supply MWRA water to LCWD. This solution requires designing and constructing piping and a meter vault to connect the two systems, and going through the regulatory and legislative process to join the MWRA. Work on the Wakefield pipeline has begun!

Quality Solution – Elevated levels of manganese in water supplied by Station 4 (Glen Drive) has resulted in water quality challenges. The addition of "greensand" filtration treatment will reduce the manganese and iron. Since 2021, we have piloted this technology and determined it is effective!

May 2023

Quantity Solution – The same!

Quality Solution – Again, the same as May 2021, adding granular activated carbon (GAC) contactors for PFAS removal and a pipeline to bring Station 2 to be treated at the same facility. This technology has also been tested and determined to be effective, design of the system is currently at 30%.

So why are we here again?

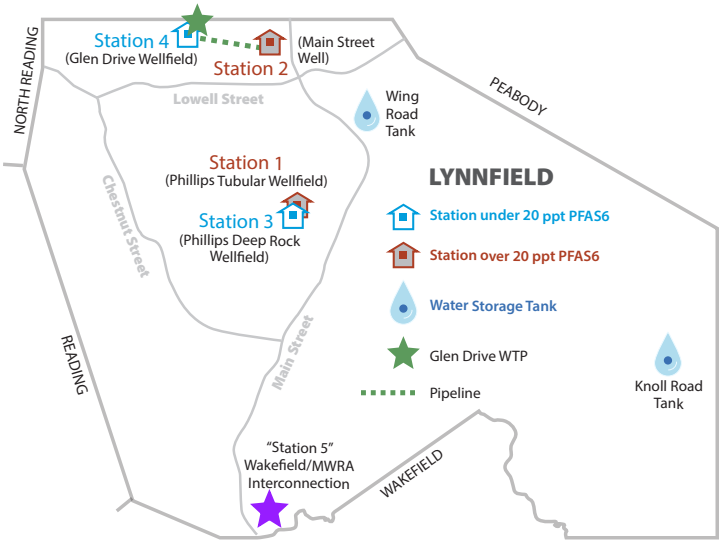
Simply said – PFAS. Known as per- and polyfluoroalkyl substances, PFAS are a group of thousands of man-made chemicals used in many consumers and industrial products, including non-stick coatings and firefighting foams. They do not break down easily, and therefore stay in the environment for a long time.

PFOS+PFOA+PFHxS+PFNA+PFHpA+PFDA = **PFAS6**

Its maximum contaminant level (MCL) is **MCL=20 ppt**

The Massachusetts Department of Environmental Protection (MassDEP) issued regulations setting a drinking water standard for six PFAS added together, with a maximum contaminant level (MCL) of 20 parts per trillion (ppt). September 2021, LCWD began sampling for PFAS, and found two of their four sources had results over 20 ppt. Station 1 only provides around 5% of LCWD's supply, and was turned off. Station 2 (Main Street well) is needed to meet LCWD's demand and has remained online with temporary treatment installed. The treated water at Station 2 is currently testing at non-detect levels (less than 2 ppt) operating under the guidance of a pilot program with the MassDEP.

While there is a limit set at the state level, there has not been one at the federal level. In March 2023 the United States Environmental Protection Agency (EPA) published their draft regulation. Rather than the sum of six PFAS compounds, it proposed an MCL of 4 ppt for PFOA or PFOS (2 of the 6 PFAS6) and a "Hazard Index" that considers the levels of four other PFAS compounds. It is expected that systems will need to be in compliance with these new EPA regulations by 2026.



LCWD had already been considering the need for treating Station 4 with PFAS6 at around 10 ppt, half the state MCL. But as Station 4 has PFOA above the proposed EPA levels, the need became clear.

LCWD has carefully studied the solution that is most effective and cost-efficient to address PFAS in its sources. Pilot testing has been completed to verify effective PFAS treatment design, under the guidance of MassDEP. LCWD has also negotiated an easement with the Sagamore Golf Course to create a path to add piping between Station 2 and Station 4 for combined treatment. The result is to add PFAS treatment to the Glen Drive WTP project, and construct a pipeline from Station 2, treating both sources at the new facility long term.

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So why $17 million?

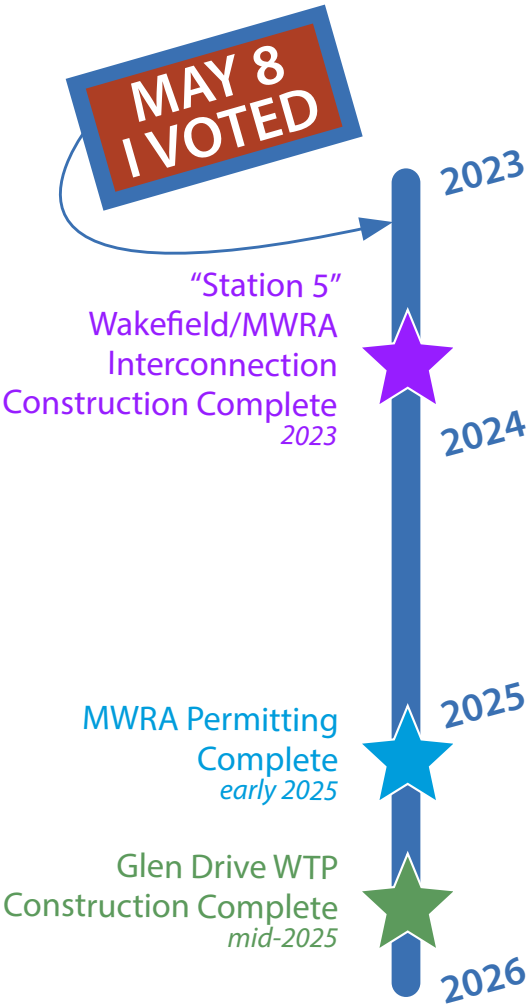
LCWD has been aggressively pursuing funding opportunities. In addition to a $100,000 earmark for PFAS design and a $147,000 grant for the interconnection, the Glen Drive WTP project also competitively qualified for a 0% interest loan (up to $18.98 million) from the Massachusetts State Revolving Fund (SRF) program. Over the life of the 20 year loan, the 0% interest rate as compared to a 4% market rate loan will save customers $7 million.

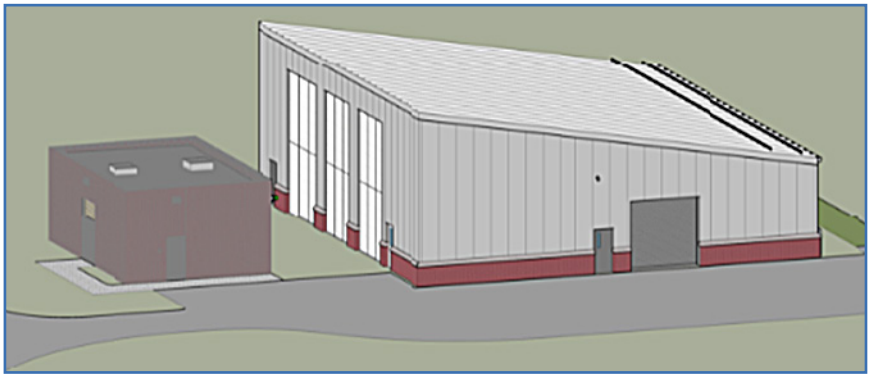
Through the progression of the capital program, and cost efficiencies on all aspects of the program, LCWD is not seeking to borrow the full $18.98 million, but is asking the District customers to vote to approve to borrow up to $17 million.

What is being built – and when?

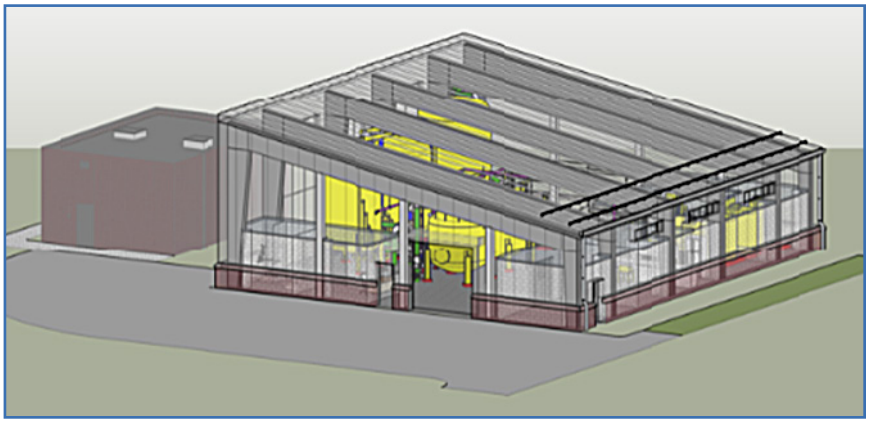
1. The interconnection with Wakefield will be a below-ground vault at the intersection of Bay State Road and Main Street, housing a flow meter and control valve. Wakefield will be extending it's piping system to this junction. The work will be completed by this winter.

2. A new building will be built behind the existing Glen Drive pumping station, housing two sets of vessels, one set with greensand for iron and manganese removal, and a second set with GAC for PFAS removal. The building will also have a tank to store and supply water to wash the filters as material builds up. Having a dedicated storage tank means the water does not need to flow back from the distribution system, which can stir up material and cause discolored water. Space is provided for the operators, treatment chemical storage, and equipment necessary to power and condition the building. Work on the new facility will start this winter and it will be online by the spring of 2026.





Rendering of the existing chemical feed and pump station building (at left) next to the new Glen Drive WTP with iron, manganese and PFAS treatment (southeast view).



Glen Drive WTP showing internal equipment, viewed from the northeast.