



Water Treatment Plant Expansion Project Frequently Asked Questions

Q. Does the City of Brandon really have a water shortage?

A. Currently the capacity of the wells and treatment systems adequately supply and treat the peak daily water demand for the City, but conservation of this precious resource during high demand periods, such as summer months, is vital in the protection and longevity of the water supply.

Q. Why is the water treatment plant expansion project needed?

A. The City of Brandon's water treatment plant (WTP) is nearing full capacity. The City conducted multiple water studies between 2013 and 2021, and completed a facility plan to improve Brandon's water treatment and capacity. Expanding the existing WTP is the most economical and efficient way to gain the capacity needed to meet our growing community's water demands.

Q. Why are we not connecting to Lewis & Clark Regional Water System and/or Minnehaha Community Water Corporation? When is the Lewis and Clark #2 system expansion happening?

A. In 1993 when members were being added to the Lewis & Clark system, the Brandon City Council decided not to connect to Lewis & Clark. In 2019, AE2S completed a Water Supply Evaluation for the City of Brandon and revisited the option of connecting to Lewis & Clark, but all the Lewis & Clark water allocations were reserved for their current members. During the Source Water Study the option for connection was also discussed with Minnehaha Community Water Corporation, but they could not guarantee long term water supply to the City or the quantity the City would need for the growing population. Lewis & Clark is planning an expansion that is estimated to be completed by year 2032.

Q. How much capacity will the expanded WTP be able to deliver?

A. The WTP expansion will double the maximum treatment capacity from approximately 2,000 gallons per minute (gpm) to approximately 4,000 gpm.

Q. How much will the reverse osmosis WTP expansion cost and how is the project funded?

A. The bid for the reverse osmosis (RO) water treatment plant expansion came in at \$24,973,800. Of that amount, \$8,030,000 is the cost to include RO treatment. To help pay for the project, the City of Brandon applied for and was granted \$7,467,900 in American Rescue Plan Act (ARPA) funding from the South Dakota Department of Agriculture and Natural Resources. The ARPA funding will pay for the inclusion of RO treatment in the WTP expansion project. The City of Brandon will also utilize financing from a 30-year bond that will be repaid using revenue from a monthly surcharge on water users' utility bills. The surcharge will go into effect in January 2023.

Q. What does "RO" stand for?

A. RO stands for Reverse Osmosis, which is a treatment process where water is pressurized and pushed through a very thin membrane which allows the water through but holds back the dissolved minerals and contaminants within the water. RO is an advanced treatment technology that will ensure the City of Brandon's water meets and overwhelmingly exceeds water quality standards set forth by U.S. Environmental Protection Agency. RO is a non-chemical treatment method that provides high quality water with reduced hardness.

Q. What makes water "hard"?

A. Calcium and magnesium mineral levels in the water are what is referred to as "hardness" in drinking water. The RO treatment system will reduce the hardness of the City's water from approximately 24 grains of hardness down to approximately 12 grains. Hard water is tough on appliances and fixtures. The treated water from the RO WTP will be much softer than Brandon's current water, which should reduce calcium buildup on appliances and fixtures.

Q. When the RO WTP expansion is complete in November 2024, how will the City of Brandon's water softness compare with Sioux Falls and Minnehaha Community Water Corporation's water?

A. Once operational, the Brandon WTP will supply water with a hardness level range similar to Sioux Falls and Minnehaha Community Water Corporation (approximately 200 mg/L of hardness compared to the current level of 400 mg/L).

Q. Can I still utilize my water softener when the RO WTP expansion project is complete?

A. Yes, water softeners can continue to be utilized, and the level of softening is up to personal preference. Adjustments can be made to water softener settings after the project is complete to account for the reduced hardness coming out of the WTP. RO treatment may also allow homeowners to reduce the amount of salt used in their water softeners, which should result in an annual cost savings and a reduced amount of salt being discharged into the environment from home water softeners.

Q. Will RO change the water pressure at my home or business?

A. The RO system at the Brandon WTP will have no effect on the final water pressure in the City. The water pressure for the City is provided by the High Pressure Pumps, after the water has been treated through the WTP (which includes the RO system) and the pressure is maintained throughout the City by the elevation of the water towers.

Q. Why not use 100% RO water?

A. Pure RO water can be aggressive and deteriorate some pipe materials as well as increase the cost to treat the water. Treating a portion of the water allows for the targeted hardness reduction while keeping some level of beneficial minerals in the water.

Q. How will RO treat radium in the water?

A. Split Rock Creek Aquifer has higher levels of radionuclide concentrations. The maximum contaminant level (MCL) of radium set by the EPA is 5 pCi/L (picocurie per liter). The existing treatment process removes radium from the water to below the detection limit of 1 pCi/L, well below the EPA limit, and the RO treatment process will provide additional radium removal as well.

Q. What are the ongoing maintenance costs of the RO system?

A. General maintenance of an RO system includes periodic cleaning of the membranes and membrane replacement every 7 to 10 years. The annual maintenance cost will depend on the frequency of cleaning and the useful life of the membranes. Maintenance cost is estimated to be approximately \$150,000 per year.

Q. Are RO systems wasteful?

A. RO systems do have a waste stream as the minerals that are removed are concentrated and disposed of. However, RO treatment at the water treatment plant is more efficient than in-home water softening systems.

Q. How much will the monthly surcharge add to my water bill?

A. The following table includes the monthly surcharges that will be implemented as of January 1, 2023. The average home in Brandon has a meter size of 1 inch or less, which means the surcharge on water bills for most homeowners is projected to be about \$28.20 per month.

METER SIZE	MONTHLY SURCHARGE
1" or less	\$28.20
1.5"	\$56.40
2"	\$112.80
3"	\$253.80
4"	\$451.20
6"	\$922.68

Q. If the WTP expansion project won't be completed until November 2024, why is the monthly surcharge going into effect in January 2023?

A. The costs for construction of the WTP expansion begin at the start of construction in the fall of 2022, which means the City of Brandon must be able to pay for the project during construction. Therefore, the City has secured a 30-year bond and loan payments start February 2023.