

McBaine Water Treatment Plant Improvements

BeHeardCoMo

Questions and Answers

Why is this project needed, and why now?

The McBaine WTP was built in 1970, with substantial upgrades and/or expansions in 1994 and 2007. Some equipment in the facility is nearing the end of its useful life and must be replaced. While the McBaine WTP has a rated capacity of 32 million gallons per day (MGD), it only has the ability to reliably treat 24 MGD. Additionally, the City's 2015 [Long Range Water System Study opens pdf file\(External link\)](#) found that there is insufficient treatment capacity at the McBaine WTP to meet anticipated future demands within the study planning horizon (2033). This project will restore treatment capacity to meet current demands more reliably and accommodate anticipated demand within a planning horizon to be established with routine tracking of demand trends.

What is the current water treatment process, and how will it change with the McBaine WTP Improvement Project?

When water arrives at the McBaine WTP, the water withdrawn from the Missouri River alluvial aquifer is exposed to air to oxidize it, which reduces levels of iron, carbon dioxide and hydrogen sulfide, which are naturally found in groundwater supplies. Next, water is softened by adding lime to the oxidized waters. Water softening removes about 50% of hardness-causing minerals from the water, which reduces scale formed in water heaters and pipes and allows you to use less laundry detergent. Once softening has occurred, water goes through a filtration process to remove particles that carry over from the softening process. Finally, our water is treated through disinfection to prevent disease-causing microorganisms. Once our water has gone through these four steps, it's ready for you to drink! [Click here for more detailed information about the current water treatment process\(External link\)](#).

This initial phase of the McBaine WTP Improvement Project will not fundamentally change the current water treatment process, but the rehabilitation and replacement of key equipment and facilities will provide much greater operational controls and efficiencies, enhance treatment performance and reliability and provide higher-quality water for Columbia Water & Light customers.

What is Columbia's current water quality?

Since the 1970s, the City's groundwater supply and the McBaine WTP have provided citizens of Columbia abundant and affordable drinking water that meets all federal [Safe Drinking Water Act requirements\(External link\)](#). Columbia's water is tested more frequently and thoroughly than is required by law. The well water is monitored for the possibility of contamination, and many recommendations from the 2013 Source Water Protection Plan have been implemented. More than 4,000 tests are run each year on samples at the McBaine WTP and from more than 30 locations throughout the City's water system. Columbia's drinking water meets or exceeds all quality standards set by the U.S. Environmental Protection Agency and the Missouri Department of Natural Resources. As part of the McBaine WTP Improvement Project, the

Columbia Water & Light team will evaluate alternative treatment processes and practices to understand the costs and benefits of going beyond current regulatory requirements to reach higher water-quality goals in the future. During this evaluation, Columbia Water & Light will consider enhanced treatment to remove currently unregulated contaminants while meeting Columbia's targets for currently regulated contaminants.

For detailed information, please see the City of Columbia [2020 Annual Water Quality Report\(External link\)](#) and the 2013 Source Water Protection Plan. You can also view the City of Columbia 2020 Water Quality Report on the [Department of Natural Resources\(External link\)](#) website.

How is this project funded and how much will it cost?

The City works hard to keep water rates affordable. In August 2018, Columbia voters approved Proposition 1, which funds capital improvements for the water system, so Columbia will continue to provide quality water service. The 2018 bond issue provides the funding necessary to make the McBaine WTP Improvements as well as several water distribution improvements, including the West Ash Pump Station Improvements, establishment of a new Southeast Pressure Zone, Southwest Elevated Storage, and various water main replacements and relocations. Revenue bonds are the fastest way to make improvements with the least impact on rates. This funding strategy allows user payments to be spread over an extended period. Additionally, future users who benefit from the improvements will help pay for them through future water revenues. Proposition 1 authorized the City to bond nearly \$43 million to fund these important projects. Of that amount, approximately \$23 million was dedicated to the McBaine WTP Improvement Project.

What previous studies have been done for the Columbia water system and the McBaine WTP?

Columbia Water & Light has conducted several studies over the last decade to evaluate water supply, McBaine WTP rehabilitation needs and potential upgrades, potential enhanced treatment alternatives and systemwide needs. These studies will provide the foundation for the McBaine WTP Improvement Project and alternative treatment analysis. These studies include:

- [2012 Final McBaine WTP Preliminary Design Report\(External link\)](#) (2018 Update)
- [2013 Source Water Protection Plan\(External link\)](#)
- [2015 Long Range Water System Study\(External link\)](#)
- [2016 McBaine WTP Condition Assessment\(External link\)](#)
- [2017 Integrated Water Resource Plan](#)

Project Videos

- [McBaine WTP Virtual Presentation 08230202](#)
- [McBaine WTP Proposed Upgrades Video 02172022](#)
- [McBaine WTP Proposed Upgrades Video Part 2 02172022](#)