DOWL TETRA TECH SWALLING GENERAL CONTRACTORS CITY OF KOTZEBUE "Gateway to the Arctic"

KOTZEBUE WATER TREATMENT PLANT

OVERVIEW OF THE PROJECT

The City of Kotzebue's (City) old water treatment plant was constructed in the 1960s and was unable to treat water to current drinking water standards.

In 2012, the City began planning for the new water treatment plant. Funding was secured through EPA and IHS grants and included nearly $25 million. Design commenced in 2018 and construction March of 2020.

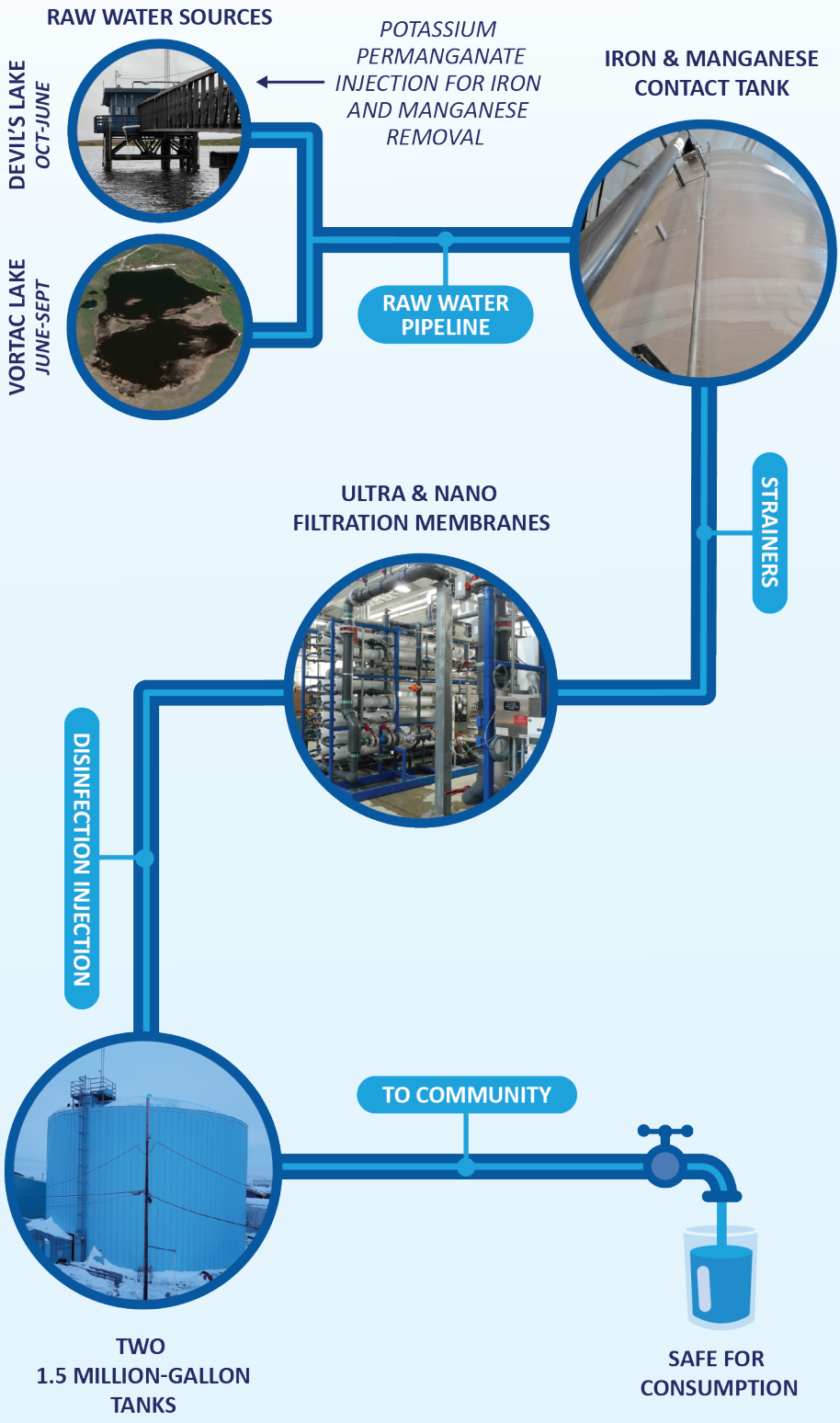
The new water treatment system, once operating as intended, will be able to meet the community's demand and produce water of significantly better quality.

The start-up has been complicated by erratic raw water quality, and other unforeseen challenges. The City, design team, and construction contractors are actively working to make the plant resilient to fluctuations in raw water quality.

Currently, the plant is receiving more than twice the amount of Iron (Fe) and Manganese (Mn) than it was designed to treat, which is creating water coloration issues. The design and construction team and the City has an action plan to improve the treatment process to treat this unusual amount of iron and manganese.

WATER TREATMENT PLANT PROCESS

This figure shows how the system works and where and when water is taken from various sources.



KOTZEBUE WATER TREATMENT PLANT

FREQUENTLY ASKED QUESTIONS

1 Why is the water brown?
The new treatment plant currently struggles to remove iron and manganese, which occur naturally in the City's water sources. The raw water feeding the plant has more than twice the amount of manganese as expected during the design.

2 Are there times of year when the coloration is better/worse? Why?
Late winter into early spring is the worst time for discoloration due to the source water being ice-covered, starving it for oxygen, thereby keeping the Iron and Manganese from being properly oxidized, thereby remaining in suspension. When the ice melts, Oxygen is reintroduced into the water, causing the Iron and Manganese to settle out properly.

3 Will the water coloration improve as spring turns to summer?
Yes. History tells us that March to early June are the worst times for raw water quality (high Fe and Mn). We are already seeing improved raw water quality and thus treated water quality. But given the size of the storage tanks it takes time (days or weeks) to wash out of the system.

4 What is the City doing about this problem?
The City greatly appreciates all of our residents' patience as we work to address the complex problems. The City met with the designers and contractors in Kotzebue on May 29 to devise a plan for addressing treatment of lower quality raw water. Tetra Tech, the engineer of record, is working on a design to add a new filtration step to the plant, and Swalling General Contractors, the construction contractor, is working on a cost to complete the work. The City is working with capital projects staff to identify funding. Regardless of where funding comes from, the City will move forward with design and construction.

In near term, the design engineer and City operations staff implemented changes to the process in May that reduced the manganese in the treated water by over 70% to below the health advisory level by the end of the month.

5 Why do residents have to pay for more water and sewer, even if the water is inferior now?
Simultaneous to the water plant construction, the City worked with a consultant to assess the current utility rates which had not been raised in 5 years. Even without the new water plant, rates must be increased to make ends meet with the utility. It is unfortunate that these rates were not raised as the cost to operate have increased in recent years. In fact, the cost of chemicals, heat, power, and staffing have increased significantly over this period.

NEXT STEPS