

City of Lago Vista

TEEA 2019 Winner: Technical/Technology

Ground Storage Tank and Trihalomethane Removal Project



The City of Lago Vista has roughly 3,500 water connections through a network of 130 miles of waterlines, serving their 6,750 residents. Since the city has a low population density, the resident water age of the water in storage tanks is higher than normal, increasing the abundance of Trihalomethanes present in the water. To keep the Trihalomethanes in the water below the EPA-mandated maximum contaminant level, the city was having to flush their seven ground storage tanks on a regular basis. The flushings required the city to buy potable drinking water, empty the storage tanks, and refill it with water, wasting thousands of gallons of water each time.

In 2009, the City Utility Department created a task force to reduce the need for numerous flushings by attacking and removing the Trihalomethanes as they formed in the water. In conjunction with converting their water system to high-density polyethylene (HDPE), they added fused pipe mixers into the ground storage tanks, allowing for constant turnover in the tanks. They also pioneered the use of splash pumps in the ground storage tanks to remove the Trihalomethanes. The impact of the splashing dispels the gaseous chemical, resulting in a 61 percent decrease. These results now allow the tank to safely go without flushings for months.

Before the task force was created, the city reported to have a 35 percent water loss in its water distribution system; the industry average is between 10 and 15 percent. With the new technique used in the Lago Vista ground storage tanks, the water loss in their water distribution system is now just 12 percent. Lago Vista no longer purchases water to flush their ground storage tanks, resulting in approximately 6.4 acre-feet of water conserved annually.

In addition, the City of Lago Vista's tank modification project reduced dead-end waterline flushing, because better quality water was being introduced into the farthest reaches of the water distribution

system.

The project has helped save roughly \$8,500 annually through the water conserved and the labor and equipment no longer needed for the flushings.

The city has demonstrated exceptional environmental leadership through this project and hopes to inspire other cities to follow in their footsteps.