CASE STUDY

# CITY OF KAYSVILLE

Kaysville City, Utah Utilizes PAX Mechanical Tank Mixers as Part of a Successful Disinfectant Residual Stability Program


## OVERVIEW

Nestled on the stunning Wasatch Mountain Range north of Salt Lake City, Kaysville City serves about 30,000 residents with over 8,200 water connections across a 11 square mile geography.

Founded in 1850 by Mormon pioneers, Kaysville has become a household name in Utah's agricultural profile, with orchards, dairies, and farms populating the landscape of the surrounding area. Kaysville was also the first city to be incorporated in Davis County as well as the 27th city to be incorporated throughout the entirety of Utah.

As a consecutive system, Kaysville City depends upon water from its wholesaler, Weber Basin Water Conservancy District. Until as recent as 2020, Kaysville had limited control over maintaining disinfectant residual levels in the Kaysville City distribution system. Ensuring adequate residual levels throughout the distribution system has become a priority as it has become more challenging to manage.

## SITUATION

The City staff began the implementation of a program that would allow them to exert more direct control over the disinfectant residual levels in their distribution system.

Staff looked into installing strategically located chlorine boosting points, but quickly realized that their system of six water storage reservoirs would create inefficiencies in the dispersion of the added chlorine disinfectant.

Water storage tanks or reservoirs can rob systems of residual due to water age and the accumulation of organic material, so a mixing strategy was needed to achieve optimal levels of dispersion.

***The City of Kaysville consumes nearly 3,200 acre-feet of water per year, which is equivalent to 26,618 gallons per person.***

# APPROACH

In order to combat this natural disinfectant residual decay in water storage reservoirs, Kaysville City staff examined the use of mechanical tank mixers which can evenly distribute chlorinated water throughout a tank volume and prevent low residuals downstream. Getting the right mixer for the job was key – each of their six tanks had volumes ranging from 1-2 million gallons.

After talking to plant staff from other cities in the state including the City of South Jordan (a current PAX Mixer customer), the Kaysville operations staff decided to invest in six PAX Impeller Mixers - one PAX Impeller Mixer for each their six water storage tanks.

***"We wanted to exert more control over our disinfectant residual levels and were convinced that mixing plus boosting was the answer. After doing our homework with our neighboring cities, we chose the PAX Mixers for our needs – and they worked."***

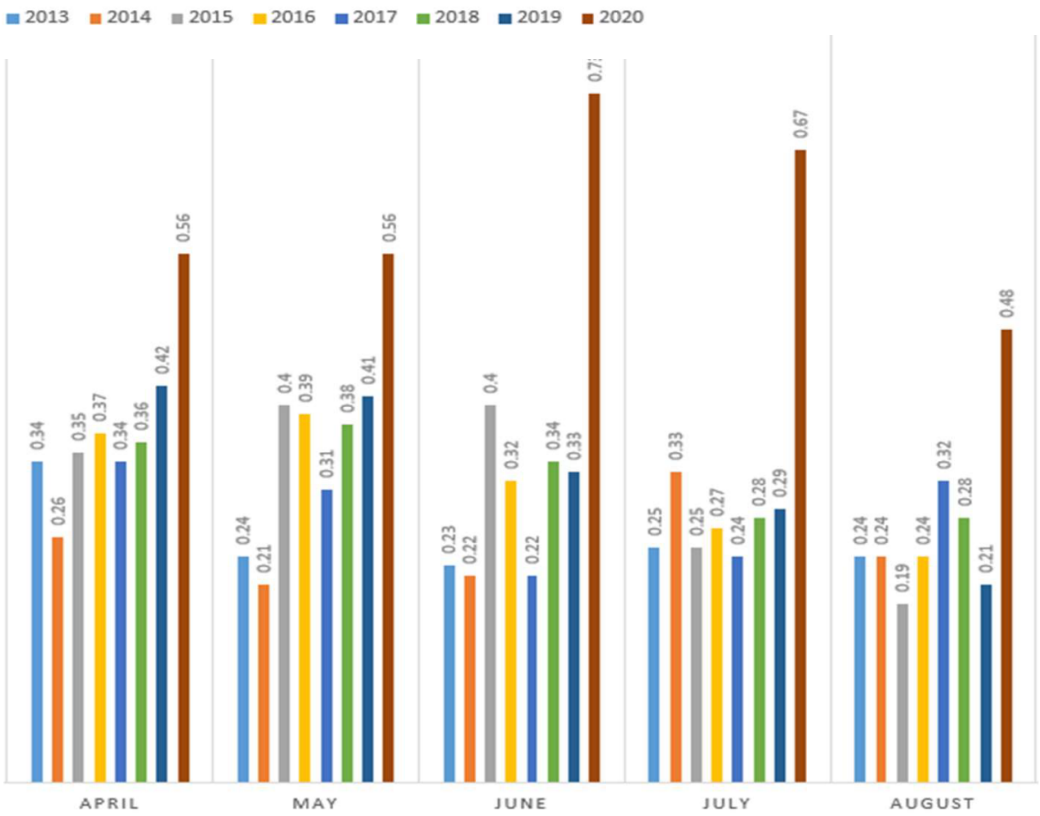
*Jared Tubbs, Water Manager, Kaysville City, Utah*

# RESULTS

- **The introduction of the new mixer doubled the residual levels of their tanks during problematic months where the tanks historically had residual issues on the downstream zone.**
- **The PAX Mixer allowed Kaysville to gain control over their residual levels throughout different areas of the tanks in their system.**
- **This new system can run 24/7/365 with great consistency, allowing the team to worry less about maintenance time and costs .**

# CONCLUSION

Once the team at Kaysville analyzed the results, they knew that they found the perfect system. With the introduction of the PAX Impeller Mixers, the team was able to gain control over their residual levels in all six of their tanks. They were extremely pleased with the results.




This chart shows the differences in residual levels throughout a notoriously difficult time of the year.

PAX Impeller Tank Mixer
PWM-400

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