

# WASTEWATER TREATMENT PLANT

FAIRFIELD, IOWA



## PROJECT DESCRIPTION

The City submitted an I/I Reduction Plan, prepared by a local firm in response to a 2008 Administrative Consent order regarding the elimination of sanitary sewer overflows (SSOs), which identified 21 collection system projects totaling \$21.6M to be completed by 2019. Concerns over the political difficulty in implementing the extensive home inspection and footing drain disconnection program outlined in this plan led the City to re-think their approach. Major deficiencies also existed at the Wastewater Treatment Plant (WWTP) due to decades of deferred maintenance. Principal among these is a non-performing preliminary treatment system that is detrimental to downstream treatment processes. Furthermore, due to past operational practices and nonfunctioning equipment, minimal data existed to quantify the true influent flows received at the WWTP during storm events, leading to wide fluctuations in effluent discharge quantity and quality.

McClure worked with the City and Iowa DNR to develop a holistic strategy to quantify the true flows entering the collection system and reaching the WWTP during storm events. The resulting Sanitary System Evaluation Survey established an 8-year Sanitary Transportation and Elimination Program; a phased approach toward the reduction and elimination of SSOs, the reduction or possible elimination of basement sewage back-ups, collection system rehabilitation, and significant WWTP improvements.

## PROJECT HIGHLIGHTS:

- Influent and stormwater pump structure: parallel, two-stage 9-MGD influent Archimedes screw pumps and four, 11-MGD submersible stormwater pumps.
- 20 MG flow equalization basin with flow metering and control structures.
- Headworks building with mechanical screening and vortex grit removal.
- Third oxidation ditch with jet aeration mixing, 70-ft diameter internal clarifier, and RAS pumping.
- Modifications to two existing oxidation ditch/final clarifiers to include jet aeration mixing system.
- UV disinfection and plant water system with vertical UV lamps, non-potable water pumping, and seasonal bypass.
- Second 90-ft diameter aerobic digester with jet aeration mixing system and blower building.
- All ancillary electrical, HVAC, control equipment, and SCADA upgrades.

## COMPLETION DATE

2020

## COST OF SERVICES

\$22.8M

## REFERENCE

Melanie Carlson  
City Engineer  
P 641.472.6193  
mcarlson@fairfieldiowa.gov