



38<sup>th</sup> Street WWTP Rehabilitation Project

# BCWCID No. 1 for City of Killeen, Texas

November 5, 2024



# Plant Improvements

1. Influent Flow Meter
2. Aeration Basin Influent Structure
3. Aerobic Digesters and Blowers
4. Sand Filter Conversion to Cloth Media Filters
5. Secondary Clarifier Effluent Boxes
6. Chlorine Contact Basin Influent Gate Replacement
7. Effluent Pump Station Modifications
8. Electrical Rehabilitation

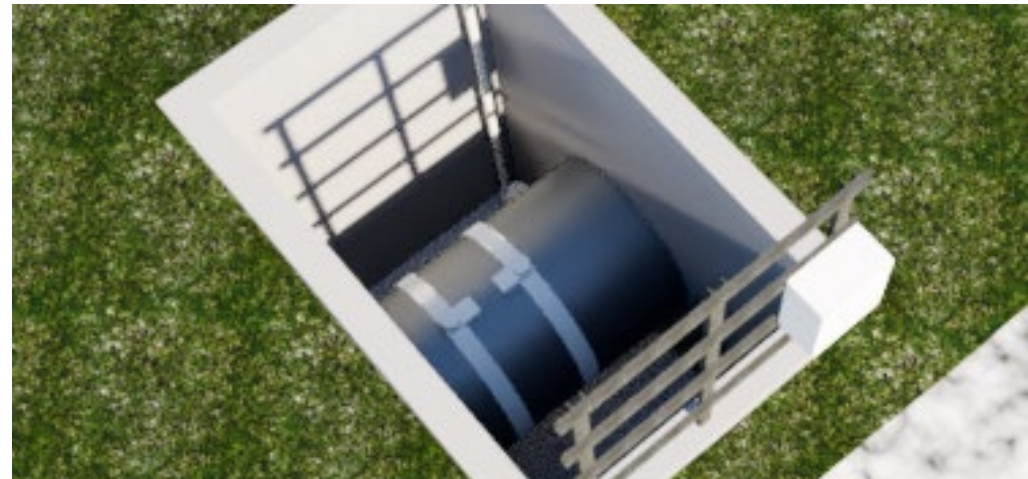
*Improvements will improve water quality, reliability, or enhance safety.*



# Influent Flow Meter



- Add a transit time flow meter in the existing vault on the influent pipe
  - Improve operational control of the WWTP process



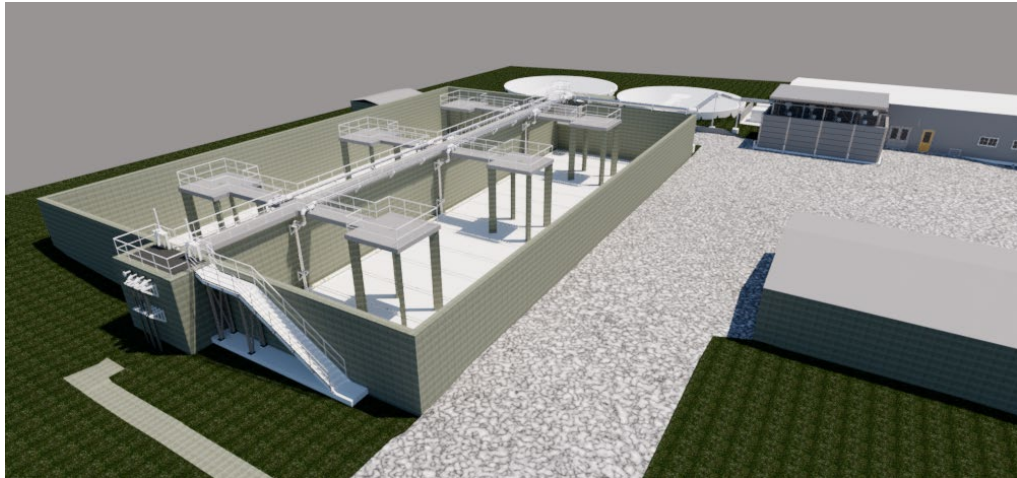
## Aeration Basin Influent Structure



- Install a concrete junction box at the existing headworks
  - Provides better operational control and solids balancing for the return activated sludge flow into the aeration basins.
- Replace corroded grating supports at the existing structure

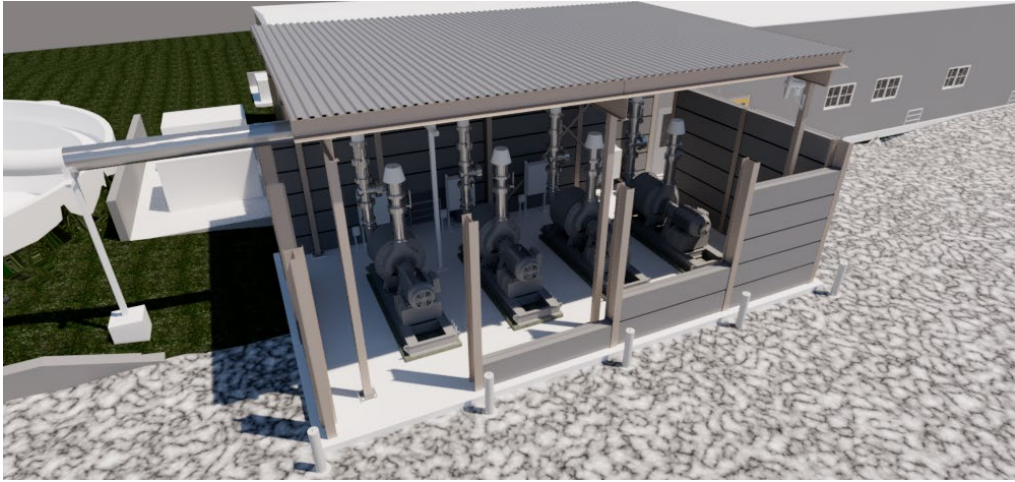


# Aerobic Digesters



- Convert digesters from surface aerators to submerged membrane diffusers.
  - Surface aerators have reached the end of their useful life.
  - Provides improved efficiency, improved solids digestion, and better operational control.
  - Adding blowers on west side of electrical building.
- Will competitively bid turbo blowers vs. multi-stage centrifugal blowers.

# Blowers – Two Options



- Multistage Centrifugal Blowers (Base Bid)
  - Proven technology with a long history of service; less expensive option.
  - Loud; sound abatement walls needed.
  - Air flow rate cannot be adjusted.

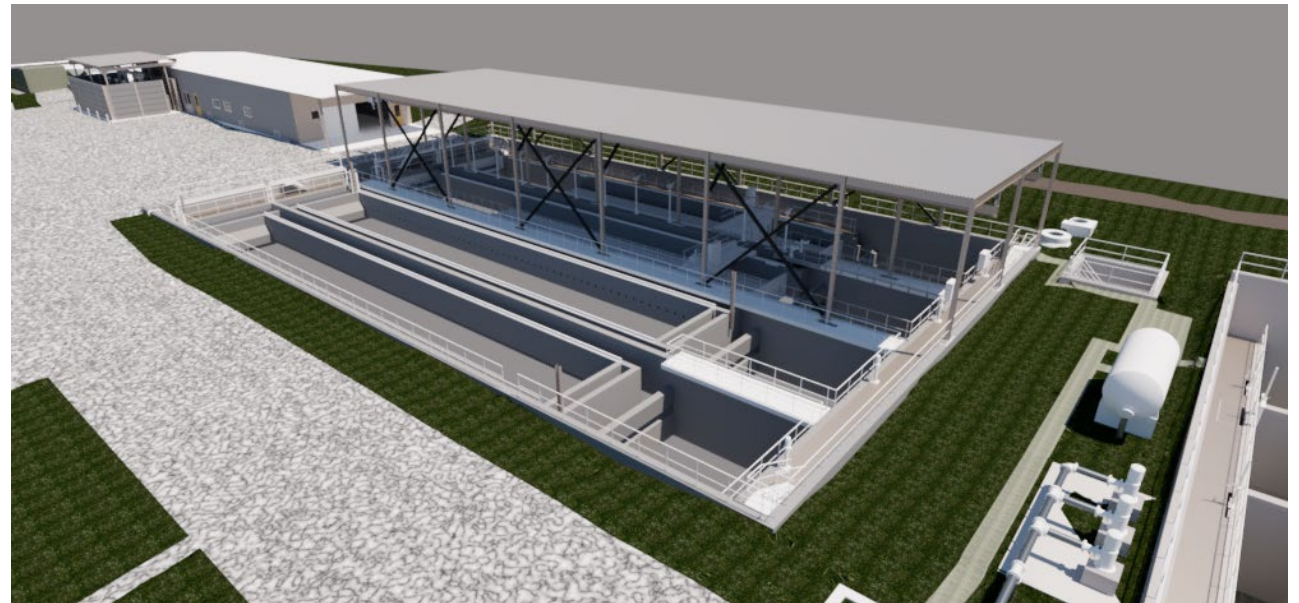


- High Speed Turbo Blowers (Add. Alt.)
  - Newer technology (~15 years); much quieter in operation and flows can be adjusted.
  - More expensive (~\$750,000 more for 4)
  - Metal building needed to protect blowers.

# Filters



- Convert two sand filters to cloth filters
  - Improve flow throughput and solids removal in the effluent for permit compliance
  - Two sand filters will remain



# Effluent Pump Station



- Install Piping in the wet well and relocate slide gate
  - Correct flow patterns in the pump station to aid in regulatory sampling and compliance.

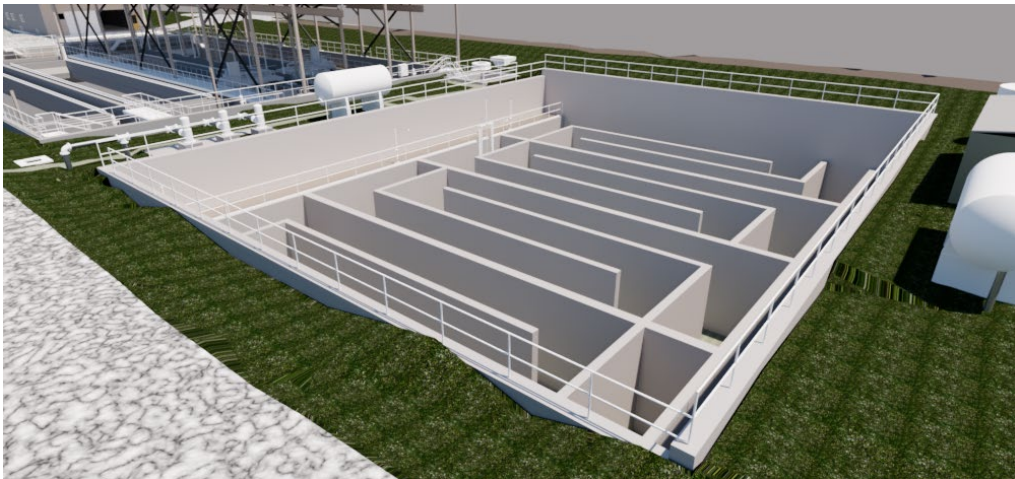




# Miscellaneous



- Install a concrete effluent box at each secondary clarifier
  - Allows for lowering the water level in each clarifier so the effluent troughs and weirs can be cleaned.



- Replace inoperable slide gate at Chorine Contact Basin No. 3
  - Basin currently cannot be isolated for maintenance.

# Electrical Improvements



- Electrical gear is almost 50 years old and is no longer reliable (or safe)
  - Replacing all equipment in the electrical room and adding transformers.



# Opinion of Probable Construction Cost

Area	Cost	
Influent Meter Station	\$40,000	
Aeration Basin Influent Structure	\$320,000	
Digesters and MSC Blower	\$2,290,000	(Base Bid)
Filters	\$6,840,000	
Secondary Clarifier Effluent Boxes	\$180,000	
Chlorine Contact Basin	\$370,000	
Plant Effluent Pump Station	\$600,000	
Allowance for Bypass Pumping	\$640,000	
Electrical Improvements	\$11,000,000	
Contingencies @ 15%	\$3,340,500	
<b>Total Base Bid</b>	<b>\$25,700,000</b>	
Added cost for High-Speed Turbo Blowers	\$750,000	(Add Alt.)
<b>Total Alternate Bid</b>	<b>\$26,450,000</b>	

# Schedule

- Design is 90% complete.
- Construction documents will be 100% complete in December.
- Ready to bid in 1Q 2025 pending funding.
- Construction is anticipated to be complete by EOY 2026.



# Questions?

Thank you!

