



CITY OF
Otsego
MINNESOTA

Otsego West Wastewater Treatment Facility Improvements

In 2018 the City of Otsego adopted a Wastewater Master Plan to proactively plan for the service needs of our growing community. A key recommendation that came from the plan includes expansion of the treatment capacity at the the Otsego West Wastewater Treatment Facility. The City also identified the desire to reduce odors, traffic, and noise due to the WWTF being located adjacent to a residential area. The result includes design and construction of a new membrane bioreactor treatment process, indoor waste loading, an administration building, and changing access to the facility.

With the completion of this project, the City of Otsego is positioned to meet the needs of the growing population and expanding economic development. The improvements will also set the foundation to meet state and federal wastewater regulations for many years to come.

BENEFITS OF THE WWTF IMPROVEMENTS

- Increased treatment capacity for continued residential, commercial, and industrial development
- Enclosed treatment facilities that will reduce noise and odors
- Improved quality of water discharged from the facility through the addition of new treatment methods. This will in turn protect the water quality of Otsego Creek and other downstream waters
- New administration building will improve customer service capabilities and operating efficiency.





Preliminary Treatment Building 1

The current preliminary treatment building will be renovated to allow for greater wastewater flows. The incoming wastewater will be sent through a rotating drum screen with 6mm holes to catch larger items. This will protect equipment further downstream. The existing grit removal system will be utilized until more capacity is needed in later phases.

Fine Screen Building 2

With the new membrane treatment downstream, the incoming wastewater will need to be screened again to catch any small items or particles that may damage the membranes. Two large rotating drum screens will be placed into flow channels to filter the wastewater as it flows through.

Secondary Biological Treatment 3

A four stage biological treatment system, which uses microbial processes to break down nutrients in the waste. The system is designed to operate with little odor production, and low noise due to the aeration and mixing methods.

Blower Building 4

The blower building houses the aeration and mixing equipment necessary for secondary biological treatment. Aeration is performed using multiple small diffusers set at the bottom the treatment tanks. Mixing is achieved using a coarse bubble system, which releases large pulses of air from the bottom of the tanks, which mixes the water as it floats to the top.

Membrane Treatment Building 5

After secondary biological treatment, the water is pumped through ultra-filtration membranes. This new treatment method will improve the overall quality of the water released from the WWTF to maintain compliance with state and federal requirements. From there the water is sent through UV treatment vessels for disinfection.

Effluent Aeration 6

The city is required to release water at a dissolved oxygen level sufficient for aquatic life in the downstream waters. As the water flows down the cascade aerator, the water mixes and aerates. The system requires no energy other than gravity forces, resulting in energy savings over other systems.

Administration Building and Garage 7

The new building will house offices and testing facilities, as well as spaces for operator use and potential public meeting space. The garage will house City vehicles.

TWAS Loading Bay 8

The solids waste produced at the facility will be transported by truck to the East WWTF for further processing. To limit both noise and odors, the waste will be loaded inside the TWAS loading bay.

West Access Driveway 9

A separate project will provide a new access to the facility from the west once land acquisition, permitting, and design are complete that will remove facility traffic from Beaudry Meadows Park and residential neighborhoods.

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