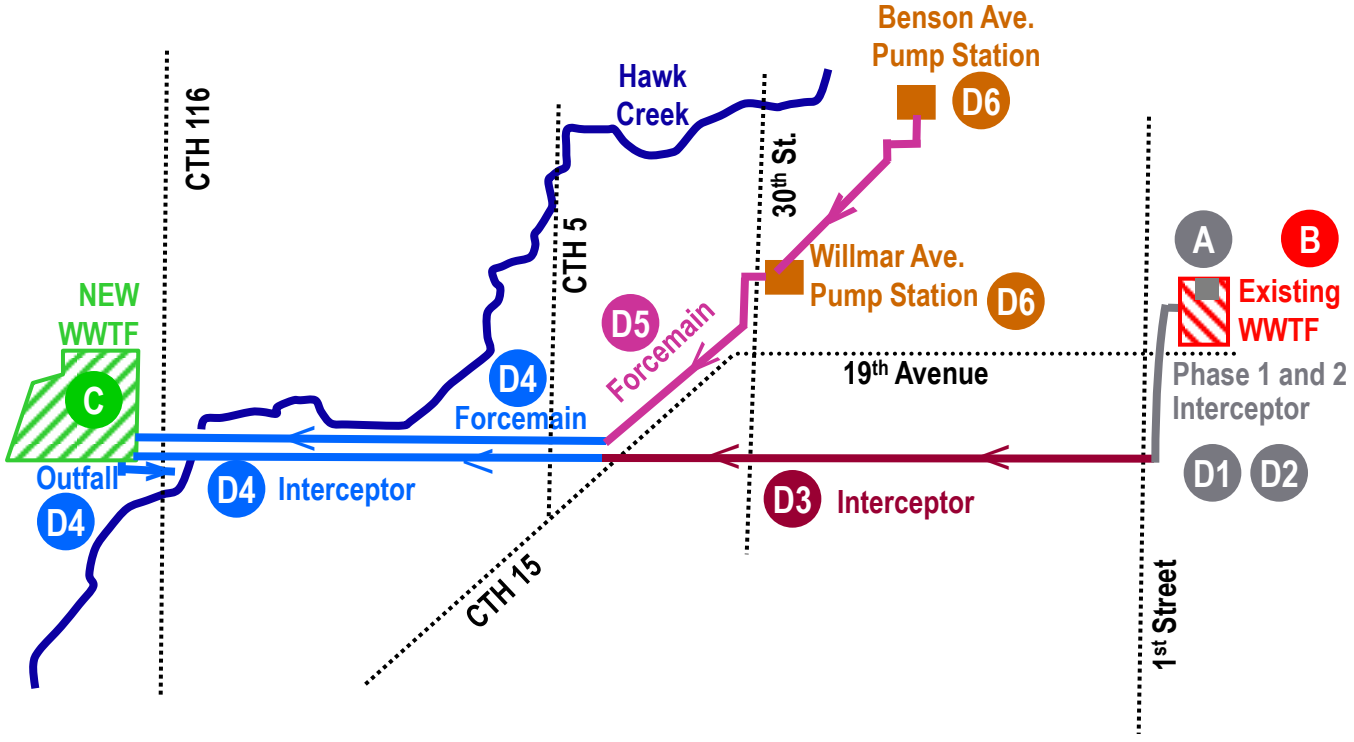


WASTEWATER PROGRAM PROJECT PLAN



Fun Facts

- Plant moved 5.8 miles
- 37,000 ft. of 36-, 48- and 54-in. interceptor sewer
- Falls 18 ft. from existing WWTF to new WWTF
- Eliminates two existing and one pump station with future connection
- Open excavation, tunneling and directional drilling
- Deepest excavation – 42 ft.
- Two pump stations
- 30,000 ft. of 8- and 16-in. diameter force main
- 2,800 ft. of outfall to Hawk Creek

- | | | |
|--|---|---|
| <p>CONTRACT A Excess Flow Pump Station</p> <p>CONTRACT B Decommissioning</p> <p>CONTRACT C New WWTF</p> | <p>CONTRACT D1 Interceptor – Phase 1</p> <p>CONTRACT D2 Interceptor – Phase 2</p> <p>CONTRACT D3 Interceptor – Phase 3</p> | <p>CONTRACT D4 Interceptor, Force main, Outfall</p> <p>CONTRACT D5 & D5c Force main</p> <p>CONTRACT D6 Pump Stations</p> |
|--|---|---|



City of Willmar Wastewater Collection and Treatment Facilities Improvements

Project Purpose

In September 2004, the Willmar City Council passed a resolution to relocate its Wastewater Treatment Plant and improve its conveyance system.

This project will relocate the 70-year-old Willmar Wastewater Treatment Facility to meet the needs of the changing water quality standards and replace aging equipment. This project involves a complete Wastewater Treatment Plant (WWTP) relocation and the construction of associated Wastewater Conveyance System facilities because of the following issues:

1. Inability of the existing treatment process to meet the City's regulatory requirements
2. Continued aging of outdated and failed treatment technology
3. Continued City growth resulting in increased flows and loadings
4. Upcoming regulatory requirements

The new WWTP will provide for new and expanded treatment capabilities, including the following:

1. Increasing treatment capacity from 4.0 mgd to 7.5 mgd
2. Reducing phosphorus loadings by 90 percent – the WWTP is currently the largest contributor
3. Meeting more stringent ammonia requirements to improve water quality
4. Eliminating sewer surcharging and overflows
5. Providing treatment capacity for failing septic systems to be connected
6. Providing the wastewater conveyance backbone for the next 50 years of service

Future Service Area

The proposed planning and future service areas represent the area that is anticipated to be serviced within the next 50 years. Primary collection system components are sized to accommodate flows from the planning area. The future service area is anticipated to be serviced by the end of the facilities planning period (2030). Wastewater treatment system components are sized to accommodate flows and loadings from the future service area.

The population used to develop current and future flows and loadings is 19,449 (this includes Eagle Lake Sanitary District) and 27,236 (this includes Eagle Lake Sanitary District and Rural Service Area). The Recommended Plan was designed to accommodate this future population.

Recommended Plan

This Plan was developed to accommodate growth within the City of Willmar's sewer service area until 2030 or beyond and eliminate the conditions that have historically produced objectionable wastewater-related odors.

1. Construct a new wastewater treatment facility at the site of the existing Sludge Transfer and Storage Facilities. This facility would be operational in late 2010 and treat all wastewater generated within the City of Willmar's sewer service area. Municipal wastewater and production-related wastewater from Jennie-O Turkey Store (JOTS) will be treated in separate treatment processes.

2. Implement minor upgrades to the existing wastewater treatment facility with the purpose of maintaining compliance until the proposed new wastewater treatment facility is operational in late 2010.
3. Construct two pump stations and forcemains to convey production-related wastewater from the industrial (JOTS) production facilities to the proposed new wastewater treatment facility.
4. Construct a large diameter gravity interceptor to convey all municipal wastewater to the proposed new wastewater treatment facility.
5. Connect at the site of the existing wastewater treatment facility the proposed new large-diameter gravity interceptor. Abandon and/or demolish structures at the existing wastewater treatment facility that are no longer necessary or useful.

Process - Extended Aerobic

The municipal treatment train will consist of raw wastewater pumping, fine screens with screenings washing/compacting, selector basins, oxidation ditches with extended aeration, secondary clarification, ultraviolet disinfection and effluent aeration.

The industrial treatment train will consist of pumping, selector basins, extended aeration activated sludge in oxidation ditches, secondary clarification, and will then join the municipal waste stream for ultraviolet disinfection and effluent aeration.

Biosolids thickening and storage are also part of this project.

Project Cost

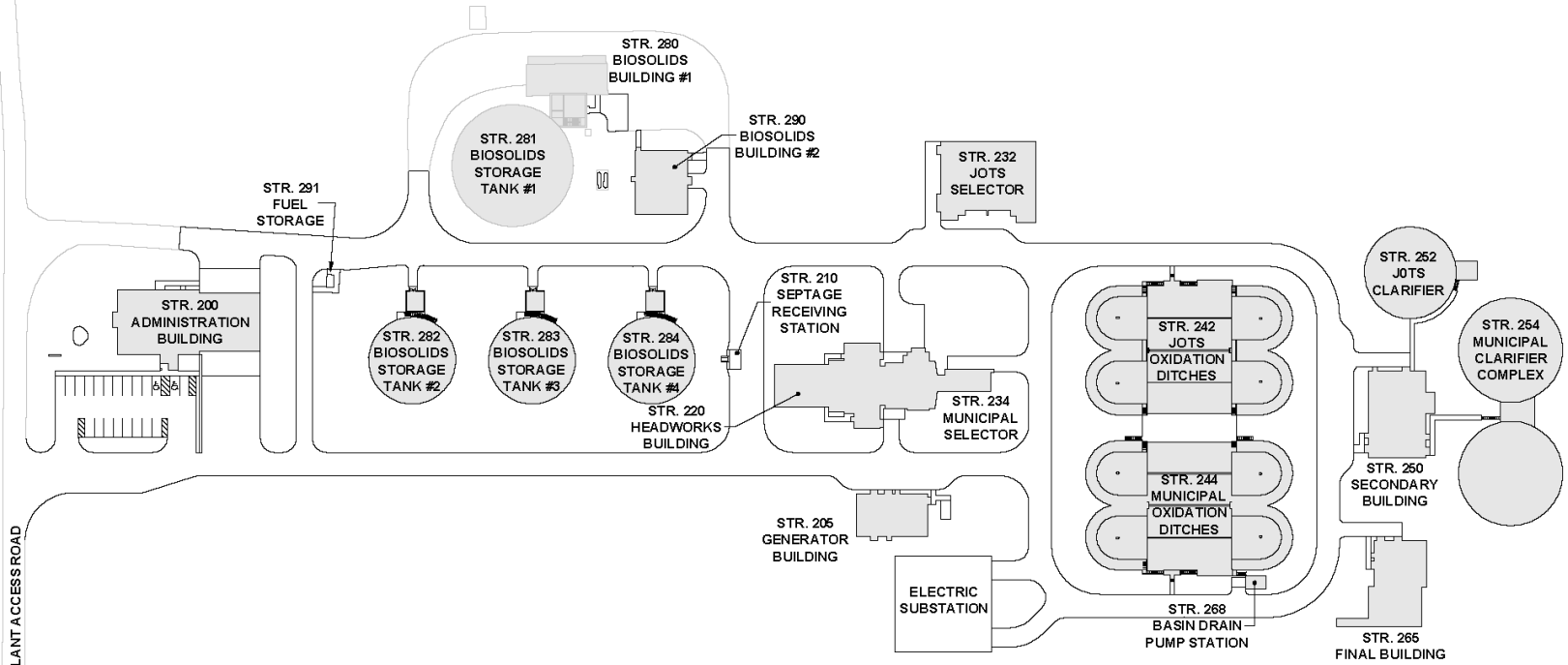
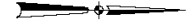
The project costs for each segment of construction for the Willmar Program are as follows:

Interceptor Phase I (Project 0609)	\$ 429,371
WWTP Interim Modifications (Project 0713)	\$ 149,032
Interceptor Phase II (Project 0715)	\$ 415,320
Treatment Facility (Project 0812-C)	\$ 49,100,000
Interceptor (Project 0813-D3)	\$ 6,300,000
Interceptor (Project 0814-D4)	\$ 6,269,000
Forcemain (Project 0815-D5)	\$ 1,300,000
Forcemain (Project D5c)	\$ 197,947
Pump Stations (Project 0816-D6)	\$ 2,179,000
Decommissioning WWTP (Project B)	\$ 2,906,586

Project Financing

The total program cost for the Willmar Wastewater Treatment Project is \$86.2 million of which \$477,900 is from a 2006 EPA STAG appropriation grant, \$291,000 from a 2009 EPA STAG appropriation grant, \$75 million from the Clean Water Revolving Fund (CWRF) loan, \$7 million from the Wastewater Infrastructure Fund (WIF), \$447,000 ARRA funds, \$2.69 million TMDL, and the remaining balance from the City's Wastewater Treatment Plant Reserves.





Shaded structures are currently under construction.

WILLMAR TRAP CLUB





City of Willmar Wastewater Collection and Treatment Facilities Improvements

Construction Milestones

Site Work Began: September 29, 2008
Ground Breaking Ceremony: October 28, 2008
First Concrete Pour: November 20, 2008
Final Completion: July 19, 2011

Construction Statistics

Graham has over 50 subcontractors and vendors performing work or supplying material to the site.

To date there have been as many as 100 construction workers on site on a given day and about 200 total different personnel through the project thus far. It is anticipated that by the end of the project there will have been over 300 personnel total.

Reiner Contracting will install 23,000 LF of yard piping ranging in size from 1/2" chemical lines to 54" influent/effluent pipe.

Design Electric will install over two miles of duct bank and 596,000 miles of wire and cable (excluding phone cable) which is enough to run from the new site to downtown Minneapolis.

To date, Graham has placed an estimated 20,000 CY of concrete. Including duct bank and other miscellaneous items, there will be about 25,000 CY of concrete placed in total for the project.

One Oxidation Ditch Structure has the capacity to hold about 3.1 MG of water. All of the site concrete would fill one and one-half Oxidation Ditches.

There are 1,700 tons of rebar to be placed on the project. In addition to structural and miscellaneous steel, there will be about 2,600 tons of steel on site after completion which is enough to build 1,200 Ford F-150s.

Engineering America installed three 90' diameter by 30' tall "Aquastore" sludge storage tanks. ESPC also manufactures the "Harvestore" silos. There are enough panels on site to build seven standard 20x80 Harvestore silos. The exterior coating has been in use since 1949 on Harvestore silos.

As this is one of the largest extended aeration plants in the Midwest, much of the equipment is the largest produced for these applications.

Building Statistics

Upon completion of the project the site will house the following 20 structures:

- **Str. 200 Administration Building:** Roughly 70' by 150' with structural steel frame.
- **Str. 205 Generator Building:** Houses two 1750 kw standby generators.

- **Str. 210 Septage Receiving Station:** Will accept waste brought in from off-site.
- **Str. 220 Headworks Building:** From bottom of lowest slab to top of highest wall is an elevation difference of 74.75'. The structure houses three 84" diameter by 75' long screw pumps. These are Archimedean screws named after Archimedes from the 3rd century BC.
- **Str. 232 Industrial Selector:** Introduces the RAS flow to the industrial waste stream.
- **Str. 234 Municipal Selector:** An extension of the Headworks where the RAS flow is introduced to the municipal waste stream.
- **Str. 242/244 Industrial and Municipal Oxidation Ditches:** There are two bays per structure with each bay 213' by 65' inside dimension; roughly the size of a hockey rink. Each structure contains four 200 hp Westech aerators each with a 10' diameter impellers.
- **Str. 250 Secondary Building:** Contains five RAS pumps as well as FeCl tanks used for removing phosphorous from the waste.
- **Str. 252 Industrial Clarifier:** 96' diameter basin with 21' sidewall.
- **Str. 254 Municipal Clarifier Complex:** Consists of two 106' diameter basins and a connecting structure. The three combined basins have about the same capacity, 3 MG, as one Oxidation Ditch structure.
- **Str. 265 Final Building:** Houses two UV bays for 100 percent removal of bacteria prior to discharging plant effluent.
- **Str. 268 Basin Drain:** A sump basin capable of draining each structure and sending waste back to the head of the plant.
- **Str. 280 Biosolids Building 1:** Existing structure currently receiving wastes trucked in from existing plant.
- **Str. 281 Biosolids Storage Tank 1:** Existing tank used by the City for additional sludge storage needs.
- **Str. 282/283/284 Biosolids Storage Tanks 2/3/4:** Glass-lined tanks with 1.5 MG capacity and adjoining mixing room. Provides for thorough mixing of waste sludge.
- **Str. 290 Biosolids Building 2:** Will house two Ashbrook Gravity Belt Thickeners for the thickening of the waste sludge.
- **Str. 291 Fuel Storage:** Smallest "structure" on site. Will hold the gas and diesel storage tank.