



City of Lawrence

28 April 2015

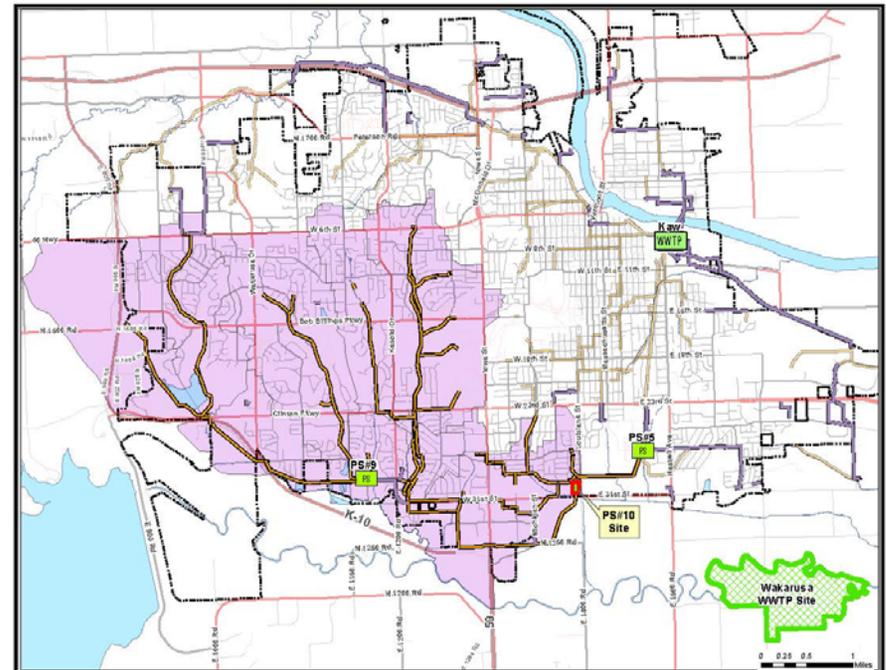
WAKARUSA WASTEWATER TREATMENT PLANT AND CONVEYANCE CORRIDOR UPDATE



PROJECT OVERVIEW

The Wakarusa Wastewater Treatment Plant (WWTP) and Conveyance Corridor facilities will:

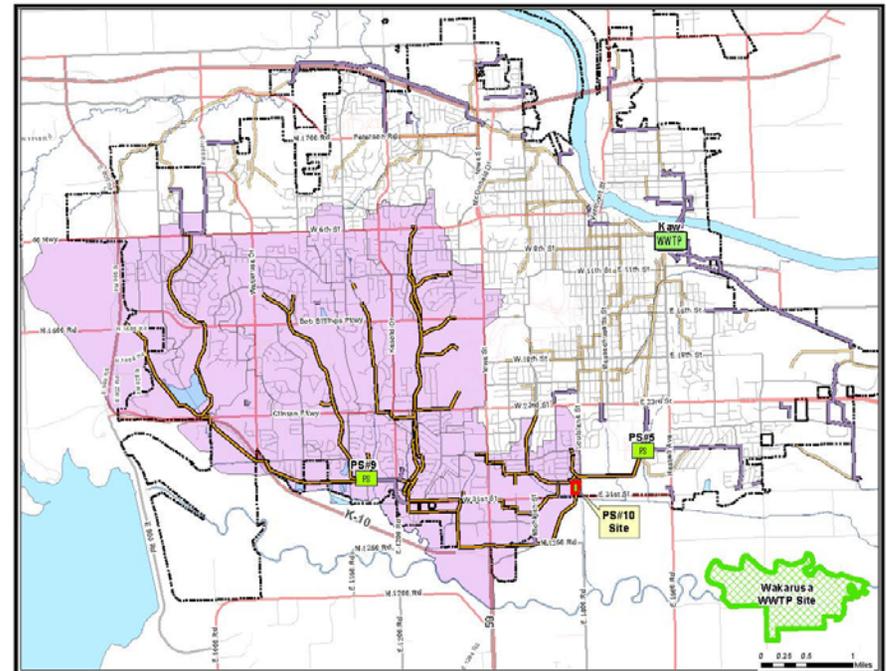
- Mitigate wet weather surcharging of sanitary sewers along the 31st Street Corridor
- Reduce wet weather overloading at the existing WWTP
- Provide 20% additional treatment capacity for future growth of community
- Take the first step in the City's Integrated Plan to meet new environmental regulations for nutrient removal



PROJECT OVERVIEW

Complete project includes:

- Wakarusa WWTP
- Pump Station 10
- Force Mains
- Kansas River WWTP Improvements
 - Lab expansion
 - Final clarifier equipment



PROJECT MODIFICATIONS SINCE THE 2012 MASTER PLAN CONCEPT

- One 2.5 MGD process train versus two 1 MGD trains
- Flexibility to manage flows at 31st and LA (PS10)
- Selected alternative forcemain route
- Upsized forcemains and space for a future 3rd line
- Replacement of Clarifier equipment at KS River WWTP
- Changed site for compliance lab functions to KS River WWTP
- Added enhancements to Baker Wetlands as part of easement agreement.
- Option for two 2.5 MGD trains (5 MGD total) at Wakarusa WWTP

PROJECT HISTORY

- **2003 Wastewater Utilities Master Plan recommended new WWTP**
 - Recommended 7.0 MGD plant for a projected 2025 population of 150,000
- **2005 – Solicited Proposals for Engineering Services**
 - Site identification, evaluation, and acquisition
- **2006 Wakarusa WWTP Site Investigation Report**
 - Evaluated 7 potential sites
 - Recommended site at 41st & O’Connell (N1175 & E1600)
 - City purchased 538 acres for new WWTP in 2007
- **2007 – Wakarusa WWTP Basis of Design Report**
 - 7.0 MGD plant and Four Seasons Pump Station improvements
 - Applied for and received Kansas Department of Health Environment (KDHE) discharge permit
- **2007 – Adopted Resolution 6717**
 - Construction of new WWTP, pump stations, and other improvements at estimated cost of \$88 million
- **November 2007 – Project placed on hold**
 - Allowed City to reassess all aspects of proposed system

PROJECT HISTORY

- **2012 Wastewater Utilities Master Plan and Capital Improvements Program**
 - Initial size of WWTP facility could be reduced to 2.0 MGD based on a projected 2030 population of 120,000
 - Recommended new location for Pump Station 10
 - Recommended WWTP and conveyance facilities to be online by 2018
 - Estimate of expenditures at \$64 Million over the 5-year CIP
- **2013 – Issued RFP for Engineering Services for the Wakarusa WWTP and Conveyance Corridor Facilities**
 - Selected Design Team - Black & Veatch, PEC, Bartlett & West, and Treanor
 - City purchased site for Pump Station 10
- **2014 – Authorized Final Design Services and Awarded Construction Contracts**
 - Authorized Supplement Agreements to Initial Engineering Services
 - Awarded Force Mains Contract to BRB Contractors
 - Awarded Wakarusa WWTP Site Fill and Access Roads Contract to King's Construction

PROJECT STATUS

- Wakarusa WWTP Site Fill and Access Roads - \$5.1 million
 - Site fill completed in 2014
 - Roads to be completed in June 2015



WAKARUSA WWTP & PUMP STATION 10 BID SUMMARY

Base Bid:

Crossland Heavy Contractors	\$49,353,800.00
Garney Construction	\$47,150,000.00
Engineer's Estimate	\$51,033,550.00

Lowest Bid with recommended alternatives:

Garney Construction	\$45,201,000.00
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PROJECT COST ESTIMATE

Completed & in-progress construction (roads & force mains):	\$ 13.8 million
Property acquisition:	\$ 0.6 million
Professional services to date:	\$ 6.8 million
City purchased materials and equipment:	\$ 1.7 million
Power utility infrastructure:	\$ 1.7 million
Wakarusa WWTP, PS10, & KS River WWTP construction:	\$ 45.2 million
Construction phase services:	<u>\$ 4.5 million</u>
TOTAL	\$74.3 million

Total of \$21.5 million spent and encumbered to date on project

**The Wakarusa WWTP Project can be delivered
without changing the 2013 to 2017 Rate Plan.**

OVERALL PROJECT CONSISTS OF AN INTEGRATED TEAM WITH LOCAL PRESENCE



- Pump Station 10
- Force Mains
- Baker Wetland Enhancements



- Surveying, Permitting, Platting
- WWTP Site Work, Access Roads and Plant Outfall
- WWTP Peak Flow Storage Basin



- Wakarusa Administration and Pump Station 10
- Kansas River WWTP Lab Expansion



- Design, Construction & Programming of Control Systems
- Planning and Development Coordination
- Inspection Services



- Overall Project Coordination
- Wastewater Treatment Plant
- Kansas River WWTP Lab Expansion/Clarifiers

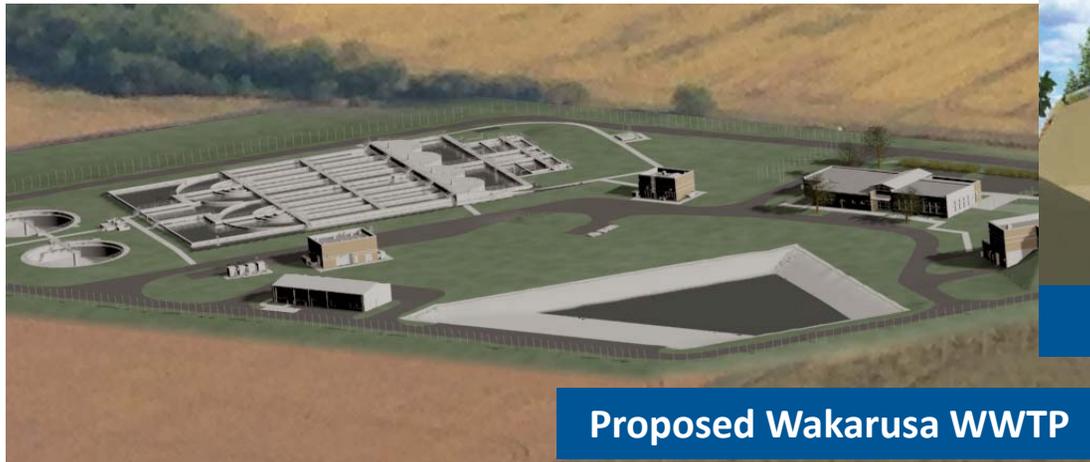
PUMP STATION 10 / WAKARUSA WWTP DESIGN FEATURES



- “Green” roof at Pump Station 10
- LED lighting at all facilities
- Flood mitigation and stormwater retention ponds
- Advanced treatment
- Ultraviolet (UV) light for disinfection
- Treated water will be reused within plant
- Biosolids to be beneficially reused

WAKARUSA WWTP & PUMP STATION 10 CONSTRUCTION SCHEDULE

- April 28, 2015 – Award Project
- June 1, 2015 – Issue Notice to Proceed
- January 2, 2018 – Substantial Completion
- March 2, 2018 – Final Completion





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Total of recommended deductive alternatives: \$1,949,000.00

- Item G – Modify site paving at Pump Station 10 (\$69,000 deduct)
- Item I – Remove LEED certification and documentation requirements for the Wakarusa WWTP Administration Building (\$117,000 deduct)
- Item J – Decrease walkways across the process basin (\$62,000 deduct)
- Item K – Reduce size of sludge storage (\$459,000 deduct)
- Item L – Eliminate Wakarusa WWTP Vehicle Storage and Maintenance Building (\$753,000 deduct)
- Item Q – Eliminate redundant grit pump at Pump Station 10 (\$46,000 deduct)
- Item S – Eliminate redundant processing equipment (\$224,000 deduct)
- Item T – Eliminate surface aerator air test (\$25,000 deduct)
- Item V – Eliminate building perimeter insulation (\$15,000 deduct)
- Item W – Eliminate ribbed form liner on PS 10 retaining walls (\$34,000 deduct)
- Item X – Modify the electrical switchgear enclosure (\$105,000 deduct)
- Item Y – Substitute PVC for interceptor sewer piping