



City of Lawrence

WAKARUSA WASTEWATER TREATMENT PLANT AND CONVEYANCE CORRIDOR UPDATE

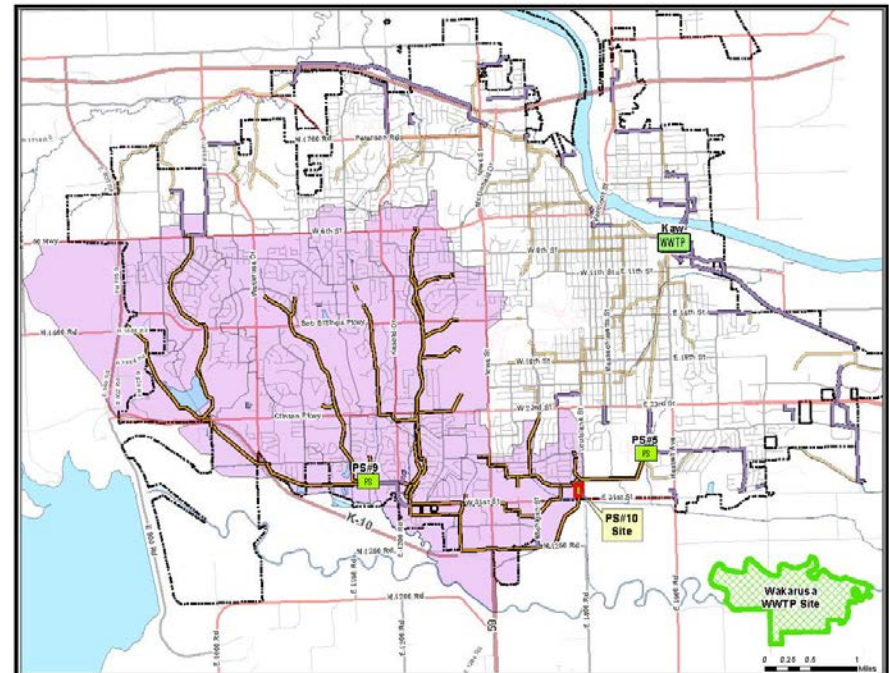
28 April 2015



PROJECT OVERVIEW

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

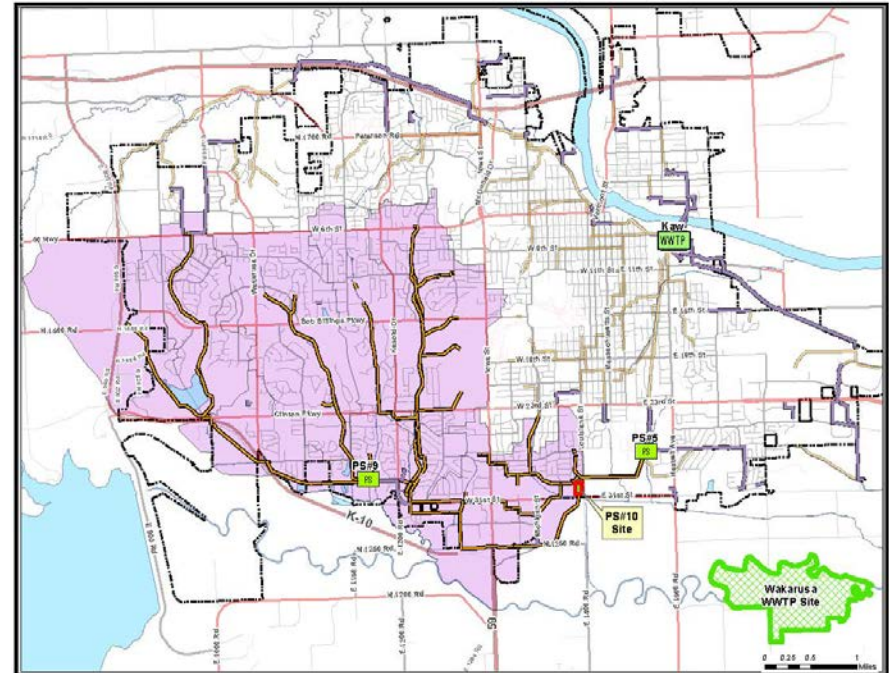
- Mitigate wet weather surcharging of sanitary sewers along the 31st Street Corridor
- Reduce wet weather overloading at the existing WWTP
- Provide 20% additional treatment capacity for future growth of community
- Take the first step in the City's Integrated Plan to meet new environmental regulations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



PROJECT OVERVIEW

Consequences of not proceeding:

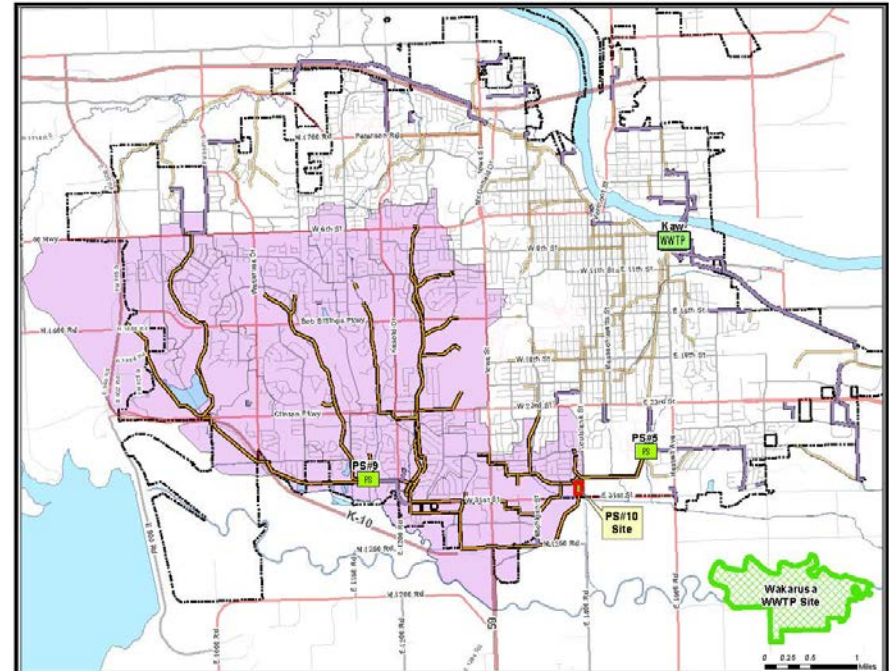
- Limited ability to reliably serve existing customers in the highlighted areas served by the 31st Street collection system
- Wet weather overloading at the existing WWTP will continue and get worse, again decreasing service reliability to current customers.
- Community growth will be limited due to a lack of treatment and wet weather handling capacity.
- Increased possibility of formal and aggressive regulatory actions mandating system expansion and improvement.



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



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



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

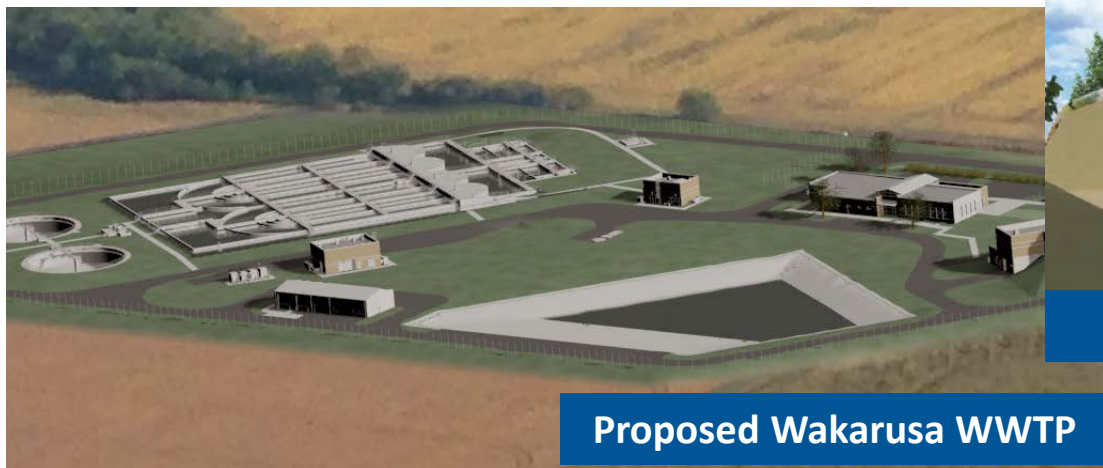
PUMP STATION 10 / WAKARUSA WWTP DESIGN FEATURES



- “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



Proposed Wakarusa WWTP



Proposed Pump Station 10



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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