



City of Lawrence

**WAKARUSA WASTEWATER TREATMENT PLANT
AND CONVEYANCE CORRIDOR UPDATE
CITY PROJECT UT1304**

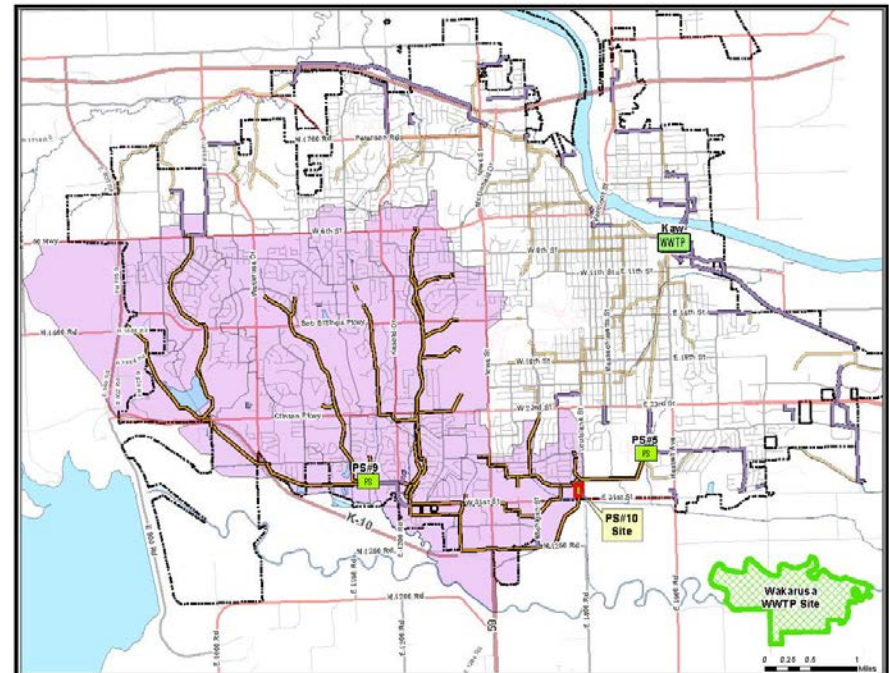
06 January 2015



PROJECT OVERVIEW

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

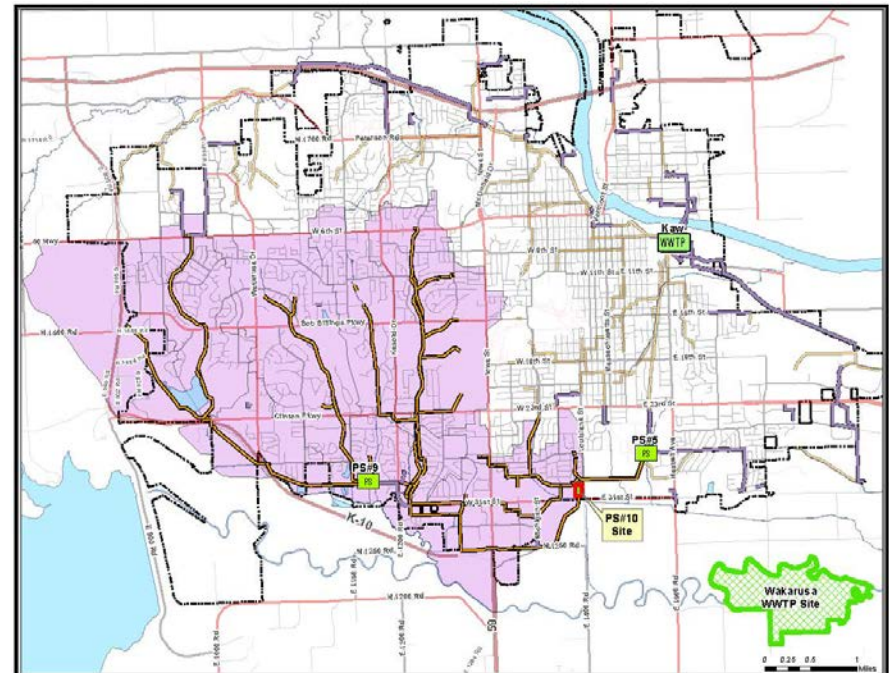
- Mitigate wet weather surcharging of sanitary sewers along the 31st Street Corridor
- Reduce wet weather overloading at the existing WWTP
- Provide 20% additional treatment capacity for future growth of community
- Take the first step in the City's Integrated Plan to meet new environmental regulations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



PROJECT OVERVIEW

Consequences of not proceeding:

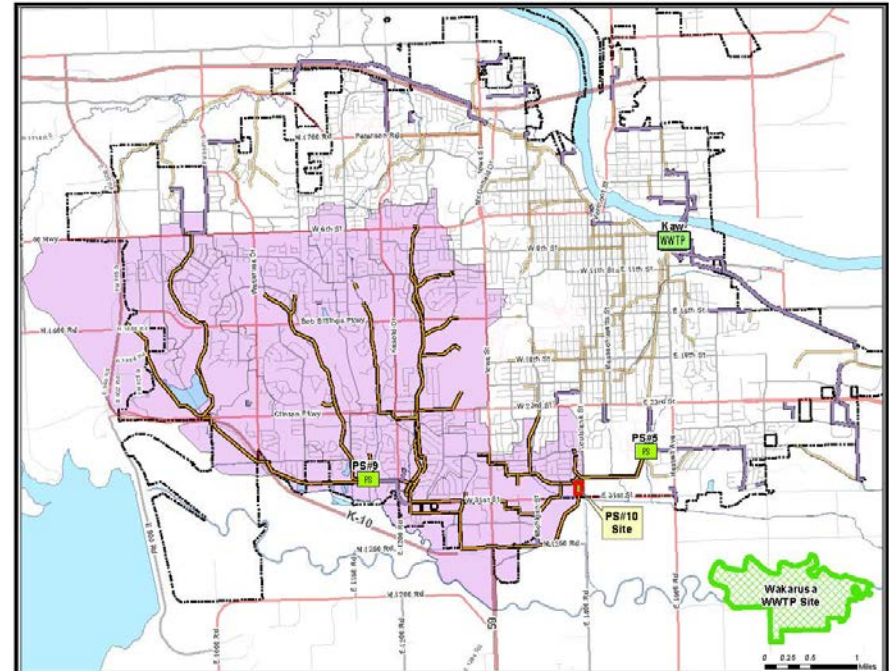
- Limited ability to reliably serve existing customers in the highlighted areas served by the 31st Street collection system
- Wet weather overloading at the existing WWTP will continue and get worse, again decreasing service reliability to current customers.
- Community growth will be limited due to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



PROJECT OVERVIEW

Project UT1304 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
- Option for two 2.5 MGD trains (5 MGD total)
- 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.

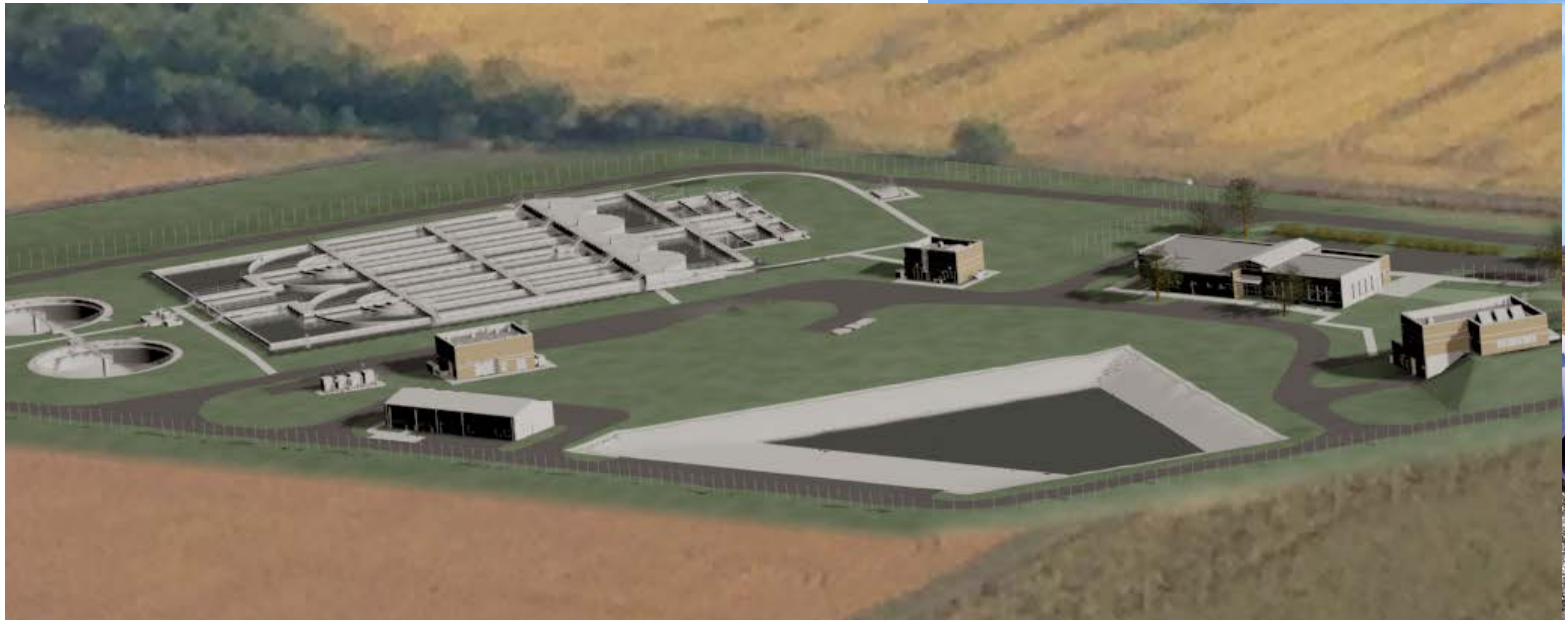
PROJECT HISTORY

- **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 Contracts 1 and 2A (Force Mains)
 - Awarded Contract 3 (Wakarusa WWTP Site Fill and Access Roads)

STATUS OF WAKARUSA WWTP AND CONVEYANCE CORRIDOR CONSTRUCTION CONTRACTS



UT1304-CONTRACT 4 WAKARUSA WWTP AND CONVEYANCE CORRIDOR ADVERTISE, BID, AND AWARD SCHEDULE

- January 13th – Request permission to set bid date
- January 14th – Advertise Project
- January 28th – Pre Bid Meeting at 9:00 am at City Hall
- February 17th – Receive Bids at 2:00 pm at City Hall
- March 10th – Award Project
- March 31st – Issue Notice to Proceed
- May 1st – Approx Construction Start Date

PROJECT FUNDING

2013 to 2017 CIP is \$161 Million

2013-2017 Scenario 5

Typical Customer (4,000 gallons Water & Sewer)

Total Increase	\$15.56
Average Yearly Increase	\$3.11
Total Additional Cost Over the 5 Year Period	\$519.24

Scenario 1 - 2015 T&O Phase I (including PS04 Force Main, and Emergency Sewer Repair)

Typical Customer (4,000 gallons Water & Sewer)

Total Increase	15.97
Average Yearly Increase	3.19
Total Additional Cost Over the 5 Year Period	519.84

* Using actual rates for 2013 and 2014.

PROJECT FUNDING

2013 to 2017 CIP is \$161 Million

Wakarusa WWTP Total Project is \$65 to \$70 Million
(Estimated Project Cost)

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Wakarusa WWTP Total Project is \$65 to \$70 Million
(Estimated Project Cost)

2013 to 2017 CIP – Funds the Wakarusa Base Bid

PROJECT FUNDING

2013 to 2017 CIP is \$161 Million

Wakarusa WWTP Total Project is \$65 to \$70 Million
(Estimated Project Funded by 2013 to 2017 CIP)

**Wakarusa WWTP Total Project plus Alternatives
is \$72 to \$77 Million**
(May or May Not be Funded by 2013 to 2017 CIP)

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

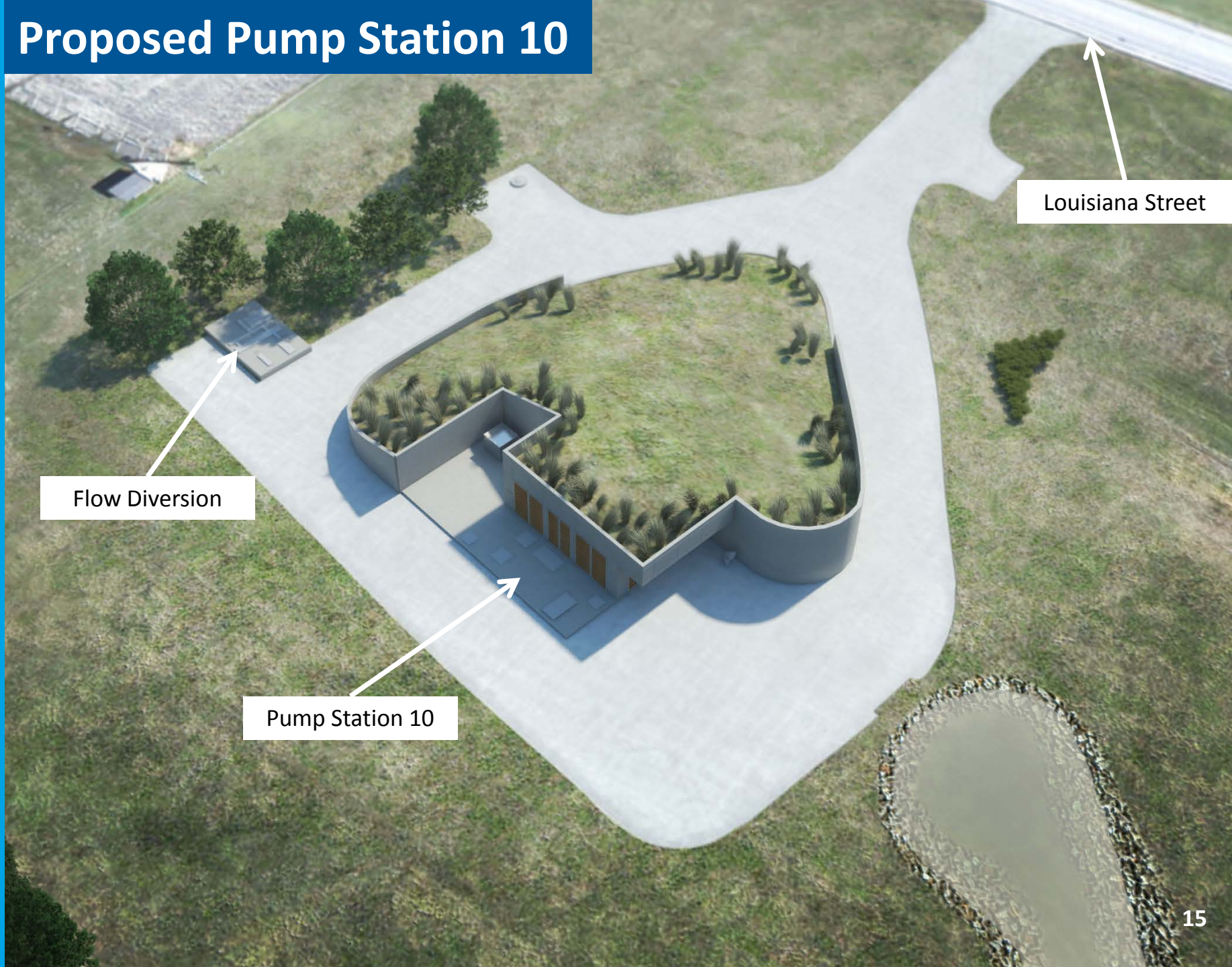


- Design, Construction & Programming of Control Systems
- Planning and Development Coordination
- LEED Administration



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

Proposed Pump Station 10

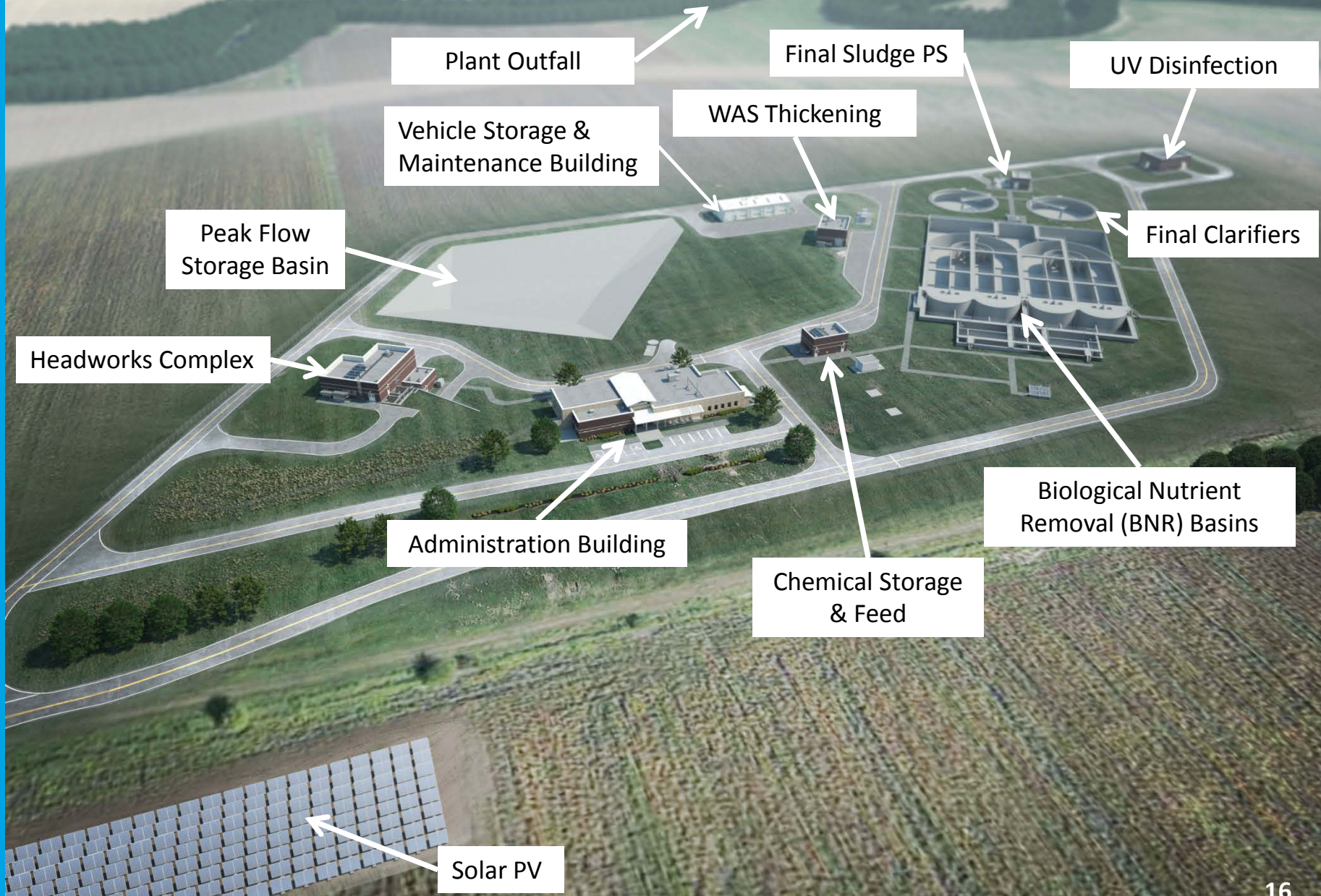


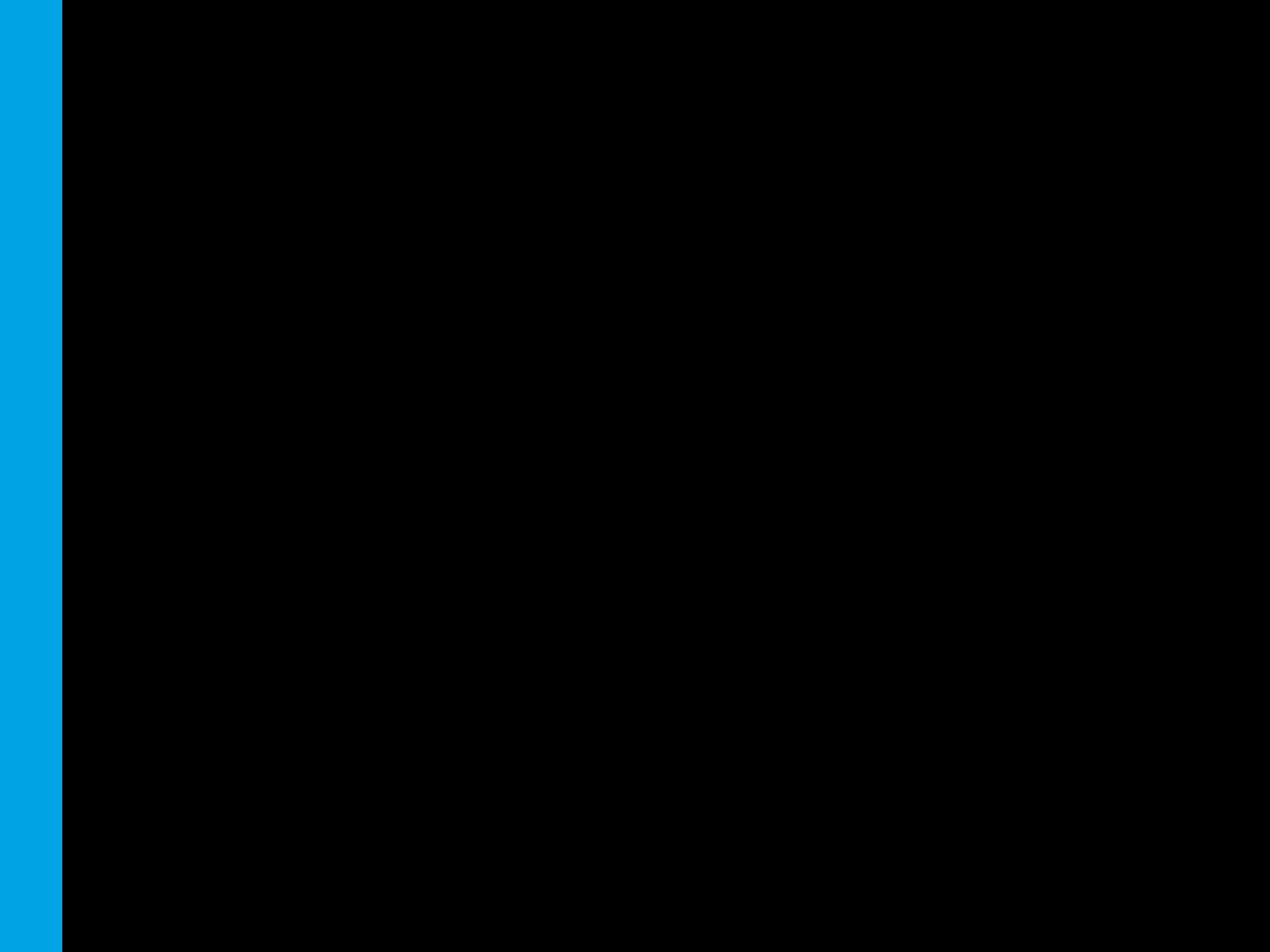
Louisiana Street

Flow Diversion

Pump Station 10

Proposed Wakarusa WWTP





PUMP STATION 10 / WAKARUSA WWTP DESIGN FEATURES



- “Green” roof at Pump Station 10
- LED lighting will be provided at all facilities
- Flood mitigation and stormwater retention ponds
- Ground-mount up to 200 kW solar photovoltaic system for on-site renewable energy

PUMP STATION 10 / WAKARUSA WWTP DESIGN FEATURES

- Advanced treatment will be provided
- Ultraviolet (UV) light for disinfection
- Treated water will be reused within plant
- Biosolids to be land applied
- Wakarusa WWTP Administration Building will be LEED certified



PROJECT COST ESTIMATES

- Wakarusa WWTP, PS10, and KS River WWTP Improvements Base Bid: \$40-45 Million
- Construction Phase Engineering Services: \$5-6 Million
- Total Project Estimate, w/o Alternatives: \$65-70 Million
- Total Project with all Additive Alternatives: \$72-77 Million
 - 2.5 to 5.0 MGD Flow Increase
 - Solar Panels - 100 or 200 kW
 - Meeting space

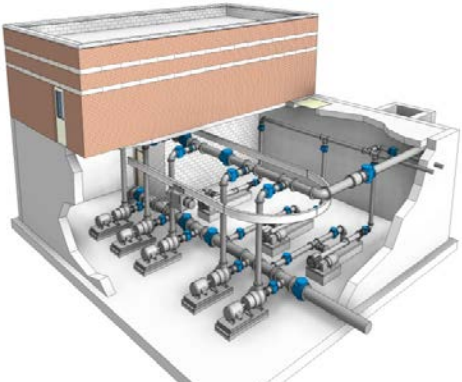
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WAKARUSA WWTP AND CONVEYANCE CORRIDOR FACILITIES



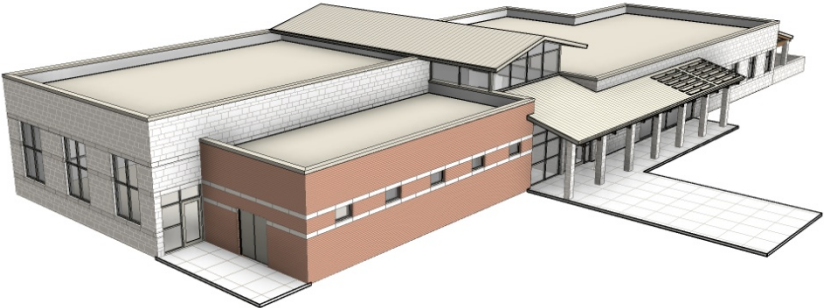
Proposed Pump Station 10



Proposed Sludge PS



Proposed Wakarusa WWTP



Proposed Administration Building



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