

KC WATER Blue River Biosolids Facility Project

Outreach Meeting



June 17th, 2019

AGENDA

Matt Bond

- Introductions
- Goals and Objectives

Brent Herring

• Project Overview

Blake Anderson

- Virtual Plant Tour
- Best Value Design Build
- Equipment and Skilled Trades
- Local Participation
- Schedule
- Q&A with WSD staff





INTRODUCTIONS

KC WATER PRIMARY PROJECT PARTICIPANTS



<u>Client Project Leadership</u> Blake Anderson Project Manager



Jeff Martin Project Delivery



Brent Herring WWTD Operations Manager



Executive Leadership Matt Bond Chief Engineering Officer



David Nelsen Wastewater Officer



Terry Leeds KC Water Director







GOALS AND OBJECTIVES



GOALS AND OBJECTIVES

7

DRIVING INNOVATIONS





The Water Infrastructure Finance and Innovation Act (WIFIA) program accelerates investment in our nation's water infrastructure by providing long term, low cost supplement bans for regionally and nationally significant projects

KANSAS CITY MISSOURI WATER SERVICES DEPARTMENT

PROJECT NAME: Blue River Wastewater Treatment Plant (WWTP) Biosoficis Facility Project LOCATION: Kansas City, MO

INVITED WIFIA LOAN AMOUNT: \$51 million

POPULATION SERVED BY THE PROJECT: 631,000

PROJECT TYPE: Wastewater

PROJECT DESCRIPTION: The Blue River WWIP Einsalids facility Project will replace and rehabilitate the existing facility constructed in the 1995. The improvements to the solids management processes will mean attricpande solids capacity, reliability, and replacery requirements through 2005. The purpose of the project is to: [1] improve the overall condition and capacity of the current facilities; [2] comply or the projects to us (a) improvements and present domain and usable of the cument domains, (a) compre-valed new offluer dodinage port milling, vales an anagement requirements, and potential future portuit requirements and level application vite limitations, (f) improve treatment efficiency and reliability, and (a) optimize operational improvements to reduce operation and maintenance costs or provide more reliable and consistent operation.



SEPA United States Environmental Protection

WERSTE: www.eco.gov/with EMAIL: wffa@EPA.gov

- **Approved Financing** ٠
 - Water Infrastructure Financing and Innovations Act (WIFIA) - 2018
 - Clean Water State Revolving Fund (SRF) ٠

KCWATER

Risk Management ٠

- Collaborative Project Delivery (Design/Build)
- Building Information Model (BIM)

UNITED STATED

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Defining KC Water's BIM Program

- 3D based design
- Automated interference detection
- Design and constructability reviews
- Contractor schedule/budget management, phasing scenarios
- <u>Whole-life asset</u> management

KCWATER

 Defined protocols for future BIM



9



PROJECT OVERVIEW





Positive Impacts of Thermal Hydrolysis on Digester Biology, Rheology, Capacity and Up/Downstream Processes



BENEFITS











Elimination of incineration and emissions All solids processed through existing digesters

Class A product, beneficial use of biosolids Energy recovery

Odor reduction



Design Criteria

- Designed to handle Max Month of 93 Dry Tons per Day of Sludge
- Raw Sludge from three (3) Facilities.
 - Blue River WWTP
 - Westside WWTP
 - Birmingham WWTP
- Sludge Screening
- Pre and Post Dewatering with Centrifuges
- THP Treatment System
- Biogas Cleaning
- Boiler System for Steam Production
- Cake Loadout Facility











Plan View of Blue River WWTP



Sludge Screening Building



Isometric View: Sludge Screening Building





Pre and Post THP Feed Pumps



Isometric View – Centrifuge Feed Pumps





Pre-THP Dewatering Centrifuges and THP



Isometric View – Pre THP Centrifuges





Plan View - Pre-THP Centrifuges and THP Skid





Isometric View - THP























Post THP Centrifuges and Conveyance



35

Plan View - Post THP Centrifuges





Isometric View – Centrifuge Feed Pumps





New Cake Storage and Loadout



Isometric View - Centrifuge to Cake Storage







BEST VALUE DESIGN-BUILD

BEST VALUE DESIGN BUILD



BEST VALUE DESIGN BUILD

Traditional Two Step (2 1/2 Step) Selection Process

RFQ – Step 1

- Statement of Qualifications
- Qualification Based Shortlist to three (3) DB Teams RFP
- Confidential Meeting between DB Teams and WSD
- Proposal Submittal
 - Qualitative Scoring of Proposals Step 2
 - Public Opening of Price Proposal Step 2 ¹/₂





EQUIPMENT AND SKILLED TRADES

EQUIPMENT AND TRADES

Equipment

& KCWATER

Boilers Cooling Towers HVAC Electrical MCC and Switchgear Centrifuges Pumps Chemical Feed Odor Control Trades Boilermaker Carpenter Electrician Flatwork Linemen Elevator mechanic Heavy equipment operator Ironworker Programming/ I&C

Laborer Mason Pile driver Plumber Pipefitter Sheet metal worker Painter/Finisher Mechanical Worker







HUMAN RELATIONS DEPARTMENT REQUIREMENTS

- Prevailing Wages
- Workforce Participation
- MBE/WBE Utilization





PROJECT SCHEDULE



QUESTIONS?





THANK YOU.

For more information, contact: Blake Anderson, <u>Blake.W.Anderson@KCMO.org</u> www.blueriverbiosolids.com

