



1.0 Description of Alternatives

1.1 Introduction

This section summarizes the comparison of wastewater collection and treatment alternatives, based on wastewater treatment plant location, and recommends the best collection and treatment configuration for final basis of the Wastewater Master Plan. Three wastewater treatment plant (WWTP) locations were considered for this evaluation to determine the recommended wastewater system configuration. The evaluation was based on design year 2025 population and land use projections and includes all projected wastewater flows for the study area. Treatment systems were based on anticipated future regulatory requirements obtained from the Kansas Department of Health and Environment (KDHE).

Alternative 1 consists of routing all wastewater flow for the study area to the existing Kansas River WWTP. Alternative 2 is based on dividing the study area and conveying part of the flow to the existing Kansas River WWTP and the remaining flow to a proposed Wakarusa River WWTP (Site A). Alternative 3 is similar to Alternative 2, however, a different site (Site B) was used for the proposed Wakarusa River WWTP. The selection of two Wakarusa WWTP sites was made to allow consideration of differing project costs due to site location, however, a Wakarusa WWTP could be located in many different locations along the Wakarusa River.

1.2 Alternative 1 – All Flow to Existing Kansas River WWTP

Alternative 1 consists of collecting and routing all wastewater flow to the existing Kansas River WWTP. Wastewater flow for west Lawrence would continue to be conveyed to Wakarusa Pumping Stations 5A and 5B and routed north through the Haskell Avenue corridor to the Kansas River WWTP. West Lawrence wastewater flow would be comprised of flow from the following subbasins: Part of Baldwin Creek (via new pumping stations BC-01 and BC-02), Yankee Tank, and Wakarusa River. East Lawrence flow would also be conveyed to the Wakarusa Pumping Stations and routed through a force main in the Haskell Avenue corridor. All existing and future growth areas south of the Wakarusa River would require wastewater flow to be collected and pumped directly to the Kansas River WWTP through a force main in the Haskell Avenue corridor. The remaining flow for central Lawrence, north Baldwin Creek, and all Kansas River Subbasins would be conveyed to the Kansas River WWTP through existing interceptor sewers.

The existing Kansas River WWTP would need to be upgraded and expanded to treat flow for the entire study area and meet all anticipated future regulatory requirements.



1.3 Alternative 2 – Wakarusa River WWTP (Site A) & Kansas River WWTP

Alternative 2 consists of dividing the study area and routing wastewater flow to both the existing Kansas River WWTP and a proposed Wakarusa River WWTP (Site A). Wastewater flow for west Lawrence would be pumped from the Four Seasons Pumping Station at south Kasold Street directly to a new interceptor sewer located south of the Wakarusa River. This west Lawrence flow includes flow from the following subbasins: Part of Baldwin Creek (via the new pumping stations BC-01 and BC-02), Yankee Tank, and Wakarusa River Subbasin 2. Flow for the Wakarusa South Subbasins and flow from the Four Seasons Pumping Station would be collected in an interceptor sewer located south and parallel to the Wakarusa River and pumped to a new Wakarusa River WWTP (Site A) through a large pumping station located near Louisiana Street. The new Wakarusa WWTP (Site A) would be located south of the Wakarusa River in the Coal Creek watershed. The remaining flow for central Lawrence, north Baldwin Creek, and all Kansas River Subbasins would be conveyed to the Kansas River WWTP through existing interceptor sewers.

The existing Kansas River WWTP would need to be upgraded to meet all anticipated future regulatory requirements. The Wakarusa River WWTP would meet all anticipated future regulatory requirements and account for all growth capacity in the study area that could not be handled by the existing Kansas River WWTP.

1.4 Alternative 3 – Wakarusa River WWTP (Site B) & Kansas River WWTP

Alternative 3 would consist of routing wastewater flow to both the existing Kansas River WWTP and a proposed Wakarusa River WWTP (Site B). Wastewater flow for west Lawrence would be pumped from the Four Seasons Pumping Station at south Kasold Street directly to a new Wakarusa River WWTP (Site B) located south of the Wakarusa River in the Highway 59 watershed. The west Lawrence area flow pumped from Four Seasons would be from the same subbasins described in Alternative 2. The Wakarusa South Subbasins flow would be collected in an interceptor sewer located south and parallel to the Wakarusa River and conveyed to a new Wakarusa River WWTP. The remaining flow for central Lawrence, north Baldwin Creek, and all Kansas River Subbasins would be conveyed to the Kansas River WWTP through existing interceptor sewers.

The existing Kansas River WWTP would need to be upgraded to meet all anticipated future regulatory requirements. The Wakarusa River WWTP would meet all anticipated future regulatory requirements and account for all growth capacity in the study area that could not be handled by the existing Kansas River WWTP.