BUREAU OF RECLAMATION

24-32-KS-TXVI

Managed Aquifer Recharge Environmental Assessment

City of Dodge City Water Reclamation Reuse Project, Kansas

Oklahoma-Texas Area Office
Interior Region 6: Arkansas-Rio Grande-Texas-Gulf

Applicant Prepared for the Bureau of Reclamation by Burns & McDonnell Engineering Company, Inc.

Mission Statements

The U.S. Department of the Interior protects and manages the Nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated Island Communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Contents

Chapter 1 – Introduction

In conformance with the National Environmental Policy Act (NEPA) (42 U.S.C. §§ 4321 et seq.), and Department of the Interior Regulations (43 CFR Part 46) and Department of the Interior Manual (Department Manual) (516 DM 1), this Environmental Assessment (EA) is prepared to evaluate and disclose potential environmental impacts of the City of Dodge City Water Reclamation & Reuse Project (Project) in Dodge City, Kansas, that is being proposed by the City of Dodge City. Figures 1-1 and 1-2 in Appendix A show the general Project location. If approved, Bureau of Reclamation (Reclamation) would authorize the use of Federal funds (Proposed Action) to construct a new Reuse Wastewater Treatment Plant (Reuse WWTP), new pump station, and force main water pipeline that will connect the new Reuse WWTP to the proposed new outfall structure along the dry Arkansas Riverbed at Dodge City (collectively referred to as the Preferred Alternative .

NEPA requires federal agencies to prepare an EA to identify and evaluate potential effects of proposed actions that do not have a reasonably foreseeable significant effect on the quality of the human environment, or if the significance of such effect is unknown, unless the agency finds that the proposed actions excluded pursuant to an agency's categorical exclusions. If the EA shows no significant impacts associated with implementation of the Proposed Action, then a Finding of No Significant Impact (FONSI) would be issued by Reclamation. Otherwise, an Environmental Impact Statement (EIS) would be necessary prior to implementation of the Proposed Action.

1.1 Background

Addressing a declining aquifer supply is key to sustainability in Dodge City and Southwest Kansas. This Project focuses on the long-term security of the declining groundwater supply. Managed Aquifer Recharge (MAR) is one strategy that will contribute to the sustainable production of water for the community. MAR uses various techniques to intentionally recharge aquifers, supplementing natural recharge processes. These methods can be broadly categorized into gravity-based and injection-based techniques. Gravity-based methods rely on the natural flow of water, while injection-based methods directly inject water into the aquifer. This MAR project uses a gravity-based method and will take water treated by the new Dodge City Reuse WWTP and transmit the treated effluent approximately 12 miles to the dry Arkansas Riverbed on the south side of Dodge City. Functioning as an aquifer recharge basin, the Arkansas Riverbed will filter and transport treated effluent flows back into the Ogallala Aquifer. Water reuse through MAR is a proactive and sustainable way to bolster the aquifer's long-term viability, resiliency, and will replenish groundwater resources at existing city wells. The Project will play a key role in serving the population and industry in Dodge City.

1.2 Purpose and Need for the Proposed Action

As a regional economic hub in southwest Kansas, Dodge City has experienced population and industrial growth over the last several years. With significant declines in the aquifer, along with degrading groundwater quality, Dodge City understands the long-term viability of the city is

dependent on expanding its water portfolio to include wastewater reuse and groundwater recharge.

The Project is needed because groundwater sources in the area are being depleted. Dodge City is a community that relies 100 percent on groundwater as its source for water supply. The agricultural area surrounding the City of Dodge City has some of the highest-intensity groundwater use in Kansas. The Ogallala Aquifer, which the City of Dodge City relies on for groundwater, is critically stressed. There is little surface water supply flowing in the Arkansas River, and most of the water used in Ford County is for irrigation of crops. According to the Kansas Department of Agriculture (KDA) Division of Water Resources (DWR), 84,165 acre-feet of groundwater was diverted for agricultural irrigation of crops in 2017 in Ford County (KDA DWR, 2017). Historic drought, high temperatures, high winds, and a depleting groundwater source are all compounding factors. The purpose of this Project is to recharge the local aquifer.

Chapter 2 - Alternatives

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not provide federal funding to assist in the construction of the City of Dodge City Water Reclamation & Reuse Project and alternate long-range plans would need to be developed to ensure drought resilience and sustainable water supplies are available.

2.2 Proposed Action

Under the Proposed Action, Reclamation would provide $14,250,000 in federal grant funds under the authority of the Title XVI of the Water Infrastructure Improvements for the Nation Act *Water Reclamation and Reuse Projects* for design and construction of the City of Dodge City Water Reclamation & Reuse Project's Preferred Alternative shown in Figures 1-1 and 1-2 in Appendix A. Construction of the Preferred Alternative of the Project is discussed below. The total estimated costs of the Project are estimated to be $79,500,000.

This MAR project will discharge treated wastewater effluent into the dry, Arkansas Riverbed which will recharge the Ogallala Aquifer and replenish groundwater resources at existing city wells. An upgrade of Dodge City's existing wastewater treatment process is necessary to provide an acceptable level of treatment so that treated effluent can be introduced into the aquifer according to MAR guidelines and Kansas Department of Health and Environment (KDHE) regulations. Conceptual treatment alternatives were evaluated for compatibility with existing MAR regulations, and hydrogeologic conditions were evaluated to determine the impact of treated wastewater recharging the aquifer. Preliminary estimates indicated up to approximately 90 percent of the water recharged will be recovered in the geographic area covered by the existing Dodge City wellfield. The Project includes the construction of three main components: 1) Reuse WWTP and new pump station, 2) 18-inch diameter force main water pipeline, and 3 an outfall along the Arkansas River.

2.2.1 Pre-Construction Activities

Pre-construction activities have been ongoing for this Project. State agencies, federal agencies, and Native American Tribes were sent letters in February 2025 that included Project information, a Project map, and requested comments or information on potential constraints that should be considered during Project development. A list of the state and federal agencies and Native American Tribes that received letters and a summary of the responses received is provided in Chapter 5. Copies of the letters that were sent and responses received are provided in Appendix B. Additionally, a wetland delineation field survey, protected species habitat assessment field survey, and cultural resources field survey were completed at the site of the Reuse WWTP, along with three alternative layouts of the 18-inch diameter force main water pipeline, and at potential outfall sites along the Arkansas River. The data collected during these field surveys were used to identify potential environmental and design constraints for the Project.

Copies of the wetland delineation field survey report, protected species habitat assessment field survey report, and cultural resources field survey report are provided in Appendices C, D, and E, respectively.

2.2.2 Construction Activities

The new Reuse WWTP will be constructed on an approximately 6-acre site adjacent to Dodge City's existing South WWTP along Warrior Road. To meet KDHE regulations and MAR guidelines, the Reuse WWTP and treatment process will consist of anaerobic-anoxic-aerobic biological nutrient removal, membrane bioreactor MBR), ultraviolet (UV) disinfection, and soil-aquifer treatment. An MBR with UV disinfection followed by greater than 6-months of infiltration time for soil-aquifer treatment is the recommended treatment technology for this MAR project based upon the ability to meet KDHE discharge and MAR regulations.

The Project will also include the installation of a buried 18-inch diameter polyvinyl chloride (PVC) force main water pipeline from the new Reuse WWTP along existing road rights-of-way to the proposed new outfall along the Arkansas River. Three potential force main water pipeline routes are being considered for the Project. Each of the three potential force main water pipeline routes are described below and depicted in Figure 2-1 in Appendix A.

- Alternative force main water pipeline route 1 is approximately 59,700 feet in length and occurs along the north side of Warrior Road, east side of 110 Road, and west side of 14th Avenue (north of U.S. Highway 400) to the proposed site of the outfall structure along the Arkansas River.
- Alternative force main water pipeline route 2 (preferred alignment) is approximately 61,970 feet in length and occurs along the north side of Warrior Road, east side of 110 Road, west side of 14th Avenue (north of U.S. Highway 400), along the north boundary of the Dodge City Business Park, along May Drive, along the north side of West Beeson Road, and along the east side of Lulu Avenue to the proposed site of the outfall structure along the Arkansas River.
- Alternative force main water pipeline route 3 is approximately 64,660 feet in length and occurs along the north side of Warrior Road, east side of 110 Road, north side of U.S. Highway 400, and along 109th Road to the proposed site of the outfall structure along the Arkansas River. Alternative 3 occurs entirely in Ford County and does not occur within the city limits of Dodge City.

The proposed outfall structure that will be constructed along the Arkansas River will have a footprint less than 0.1-acre in size. Rip-rap of appropriately sized rock will be installed in an apron below the outlet of the outfall structure to dissipate the flowing water that will be discharged from the 18-inch diameter PVC force main water pipeline.

Chapter 3 - Affected Environment and Environmental Consequences

This chapter describes the affected environment and discloses reasonably foreseeable environmental effects and reasonably foreseeable adverse effects which cannot be avoided by the No Action and Preferred Alternative. The Study Area that was evaluated for the Project and depicted on the figures in Appendix A included a two-mile buffer around the Reuse WWTP, force main water pipeline route corridors, and outfall along the Arkansas River. The potential impacts are assessed for the delineated Study Area unless indicated otherwise in the following section.

One resource, wild and scenic rivers, was considered for review but eliminated from further analysis because a wild and scenic river does not occur in the Project area and there is no potential effect to the resource. Table 3-1 lists resources that would not be impacted and the rationale for elimination from further analysis.

Table 3-1: Resources Eliminated from Further Analysis

Resource	Rationale for Elimination from Further Analysis
Wild & Scenic Rivers	The Project area does not contain any river or tributary that is a designated component of a Wild and Scenic Rivers System. Therefore, detailed analysis was deemed to be unnecessary.

3.1 Air Quality

Emissions of criteria air pollutants may impact human health and welfare by contributing to the deterioration of ambient air quality. The specific extent that a source of emissions may impact air quality is affected by the regional weather patterns, nearby terrain, and background concentrations, but generally, air quality emissions tend to disperse from their initial source. Thus, the highest concentrations of these pollutants are likely to occur near the emission sources, and the impacts of emissions on human health would be within the areas immediately surrounding an air pollutant source.

3.1.1 Affected Environment

The federal government established the National Ambient Air Quality Standards (NAAQS) under the Clean Air Act to protect public health (including the sensitive populations such as asthmatics, children, and the elderly), safety, and welfare from known or anticipated effects of air pollutants. The state of Kansas has incorporated the NAAQS into the Kansas Air Quality Regulations. The pollutants regulated by the NAAQS and relevant to the Preferred Alternative are briefly summarized below:

- Carbon Monoxide (CO): CO is a colorless, odorless gas primarily produced by incomplete combustion in stationary and mobile sources.

- Nitrogen Dioxide (NO_2): NO_2 is a compound primarily produced by the combustion of fossil fuels in stationary and mobile sources. Some oxides of nitrogen (NO_X) convert into NO_2 after being emitted and are thus regulated as precursor pollutants.
- Ozone (O_3): Ozone is rarely directly emitted into the atmosphere from sources. Rather, ozone is formed by chemical reactions between NOx and VOCs in the presence of sunlight. NOx and VOCs are both regulated as precursor pollutants.
- Particulate Matter (PM): Respirable particulate matter with a diameter of less than 10 microns (PM_{10}) and fine particulate matter with a diameter of less than 2.5 microns ($PM_{2.5}$): PM_{10} and $PM_{2.5}$ are emitted from a variety of sources, including agricultural operations, industrial processes, combustion, construction and demolition activities, road dust, windblown dust, and wildfires.
- Sulfur Dioxide (SO_2): SO_2 is a sulfur compound emitted by power plants, industrial facilities, combustion in mobile sources, and natural sources such as volcanoes.

The U.S. Environmental Protection Agency (USEPA) determines if areas of the country are attaining a national ambient air quality standard for a criteria pollutant. If the air quality in a geographic area, typically a county, meets or is cleaner than the national standard, then the area is designated as "attainment." The Project is located in Ford County, Kansas, which is in attainment for all criteria pollutants (USEPA, 2025a).

With respect to impacts to ambient air quality and near-field visibility impacts, the areas near the construction of the Preferred Alternative would experience the highest pollutant concentration increases. Therefore, the affected environment in terms of the assessment of ambient air quality and near-field visibility impacts would be near (less than 50 km from) the Preferred Alternative. Additionally, a memorandum titled "Clarification of Prevention of Significant Deterioration (PSD) Guidance for Modeling Class I Area Impacts" was released by the USEPA Office of Air Quality Planning and Standards in October of 1992. This memorandum states that typically Class I area analyses should be limited to sources that are located withing 100 km of a Class I area. In some cases, large emitters (Title V and/or PSD facilities) outside of that 100 km radius from a Class I area should be analyzed in a Class I analysis. Class I areas are protected more stringently than under the NAAQS. Class I areas include national parks, wilderness areas, and other areas of special national and cultural significance. The nearest Class I areas are the Rocky Mountain National Park in Larimer County, Colorado, approximately 570 km west of the Preferred Alternative and Hercules-Glades Wilderness Area in Taney County, Missouri, approximately 640 km east of the Preferred Alternative. PSD reviews are triggered when a proposed project's operational emissions surpass the emission thresholds set by federal or state permitting agencies. The Preferred Alternative is not expected to trigger these thresholds. Because the distance (greater than 100 km) and the source status of the Preferred Alternative, further analysis of impacts at the nearest Class I area were not evaluated.

EPA also regulates emissions of Hazardous Air Pollutants (HAPs) that are suspected to cause cancer or other serious health effects. Since the establishment of the Clean Air Act (CAA) HAP list (CAA Section 112), the USEPA has periodically modified the list through rulemaking. Currently, 189 pollutants are designated as HAPs (USEPA, 2024). Typically, HAPs associated

with urban or industrial development include formaldehyde, benzene, toluene, ethylbenzene, xylenes, and nhexane. Emissions of these pollutants within the analysis area are mostly associated with tailpipe emissions from mobile sources.

Existing air emission sources in the Project area may include non-industrial primary pollutants, such as particulates (i.e., dust) generated from farming, traffic on unpaved roads, wind erosion, and smoke from burning trash or ground cover. These sources produce pollution that is temporary and intermittent. Other sources of air emissions in the area include existing industrial sources located in Dodge City.

3.1.2 Environmental Consequences

3.1.2.1 Action Alternative

During construction, exhaust emissions, fugitive dust, and other construction-related emissions could occur. However, these increases would be temporary in nature and cease when construction is complete. Because the construction activity will be relatively short-term (i.e., estimated time to complete the Project is approximately 18 months), construction of the Project is not anticipated to have any appreciable effect on air quality.

It is expected that various construction activities would occur at different times over the approximately 18 months of construction. Air emissions generated during construction of the Project will result from several sources and activities. Fugitive dust and fine particulate emissions will be generated from site preparation, earth moving and material handling, and vehicles creating dust by traveling on land. In addition, off-road construction equipment (dozers, compressors, etc.) will release combustion by-products such as NO_X, CO, and VOCs when they operate by combusting fuel. Fugitive dust emissions ($PM/PM_{10}/PM_{2.5}$) will be higher during site preparation and earth moving during active construction periods when there is increased vehicle traffic on the site from mobile equipment.

Combustion equipment expected to be used includes dozers, compressors, backhoes, cranes, skid trucks and excavators which will all emit criteria pollutants during operation. At the beginning of construction, vehicular traffic will occur on unpaved roads and areas of exposed soil. As construction progresses, traffic will travel along paved or gravel roads. Multiple control measures will be implemented during construction to minimize air emissions and potential impacts. After grading, the untraveled or lightly traveled locations will be watered, mulched, overlain with a crushed stone layer, or vegetated to minimize fugitive PM emissions. Activities that potentially generate fugitive PM emissions will be monitored visually by construction personnel. If fugitive emissions become visible, water will be sprayed on the affected areas.

Potential air quality impacts from construction activities will vary depending on the level of activity, the specific operations, site conditions, control measures, and prevailing weather conditions. The maximum impacts due to construction are expected to occur in areas within the immediate vicinity of the construction site. Many of the site preparation and construction operations, such as excavation, filling, and grading, will be intermittent and of short duration. These aspects of the construction activities as well as control measures, will serve to reduce

potential impacts, since better dispersion conditions exist during the daytime as opposed to nighttime. The emissions associated with the construction of the Project are not anticipated to substantially impact the overall air quality in the vicinity of the Project.

No air permits are anticipated to be required to construct or operate the facility. During operation, biosolids may produce odors due to the treatment process. According to the USEPA, the odorous compounds produced are most often ammonia, amines, and reduced sulfur-containing compounds (USEPA, 2023). The presence of these odors does not mean that biosolids pose a threat to human health and the environment (USEPA, 2023). The odor may, however, travel downwind and be detectable. The existing South WWTP facility does not currently implement any odor controls for existing operations. Operation of the Project is not anticipated to result in a significant increase in odors.

3.1.2.2 No Action Alternative

The No Action Alternative would have no short- or long-term impacts to air quality as a result of no construction. If the Project is not built, the City of Dodge City will need to develop additional well fields or water treatment facilities to meet its water needs. Air quality could be impacted through the continued contribution to vehicular emissions from the trucks and equipment needed to construct and maintain additional infrastructure.

3.1.3 Environmental Commitment

Multiple control measures will be implemented during construction to minimize air emissions and potential impacts. Construction equipment would be maintained in good working order to minimize exhaust emissions from equipment. To minimize particulate matter from soil disturbance, preventative measures would be implemented during times when exposed soil is susceptible to wind erosion. In areas where bare soil is exposed, water or other dust palliatives would be applied to the soil to limit wind erosion. Measures will be implemented so that areas do not get overwatered and eroded from the application of the water. In addition, appropriate speed limits would be established on the Project construction corridor to limit the generation of fugitive dust.

3.2 Water Resources

Dodge City is located in Groundwater Management District 3 (GMD3) of Kansas. Groundwater Management Districts are part of the Kansas government system, established in Kansas law, and with the goal to establish proper management of the groundwater resources of the state, for the conservation of groundwater resources, and for the prevention of economic deterioration. The mission of GMD3 is to act on a shared commitment to conserve and develop water supply to grow the social, economic, and natural resources well-being of the District for current members and future generations in the public interest.

3.2.1 Affected Environment

The entire Project footprint occurs in GMD3 and over the Ogallala Aquifer. The Project is located in the Concord Cemetery-Mulberry Creek 110300040102), City of Dodge City-

Arkansas River (110300040106), and City of South Dodge-Arkansas River (110300030305) watersheds (USEPA, 2025b). The major streams in the Project area include the Arkansas River at the north end of the Project and Mulberry Creek at the south end of the Project. Mulberry Creek is a tributary to the Arkansas River.

Before agricultural development and irrigation in Kansas and Colorado, the Arkansas River was a gaining stream as it transected Ford County. Fresh water from the alluvial system would discharge to the river, where the quality of water was assumed to be high. After agricultural development, river flow from Colorado to Kansas decreased in volume and became more saline. High flow events originating in Colorado flushed saline rich waters from ditch-irrigated areas resulting in saline-rich water infiltrating the alluvium. Evapotranspiration likely further concentrated salinity and dissolved solids deposits in the alluvial aquifer as water levels declined due to increased groundwater usage in the two states.

As the Ogallala Aquifer continues to be depleted, degradation in water quality is also occurring. The portions of the Arkansas River and Mulberry Creek in the Project area are included on the KDHE Section 303(d) list for impairment (KDHE, 2024). Mulberry Creek has impairments for total suspended solids and dissolved oxygen. The Arkansas River has impairments for dissolved oxygen, fluoride, gross alpha radiation, selenium, *E. coli*, and sulfate.

3.2.2 Environmental Consequences

3.2.2.1 Action Alternative

The site of the Reuse WWTP occurs in the Concord Cemetery-Mulberry Creek watershed but is not anticipated to result in an adverse effect on the watershed. The force main water pipeline route alternatives cross Concord Cemetery-Mulberry Creek, City of Dodge City-Arkansas River, and City of South Dodge-Arkansas River watersheds. Similarly, the construction of the force main water pipeline is not anticipated to result in an adverse effect on the watersheds crossed. Appropriate Best Management Practices BMPs) would be implemented during construction to intercept any construction site stormwater runoff that may be carrying sediments before it impacts area streams and water resources. All areas temporarily disturbed by construction activities would be restored and revegetated.

Construction of the Project will also include a new outfall structure along the Arkansas River. The potential sites of the outfall structures all occur in the City of South Dodge-Arkansas River watershed; however, construction of the outfall structure is not anticipated to have an adverse effect on the Arkansas River, the Ogallala Aquifer, or water resources in the Project vicinity. Appropriate BMPs would be implemented and all areas temporarily disturbed by construction activities would be restored and revegetated.

Operation of the Project is also not anticipated to have an adverse effect on the Arkansas River, the Ogallala Aquifer, or water resources in the Project vicinity. The water discharged at the outfall will be treated reuse water from the Reuse WWTP and will meet KDHE water quality standards for discharge.

3.2.2.2 No Action Alternative

Under the No Action Alternative, no water would be returned to the Arkansas River and the Ogallala Aquifer. This alternative would have no short- or long-term positive impacts on water quality or availability because no construction would occur. Existing water quality and aquifer levels would remain or continue to decline.

3.2.3 Environmental Commitment

Construction will conform to all KDHE construction standards. Runoff will be minimized through the implementation of a Stormwater Pollution Prevention Plan (SWP2) developed in accordance with the Nationwide Storm Water Permit for Construction Activities. Appropriate BMPs, including but not limited to silt fence, would be implemented during Project construction to intercept sediment that may be carried by stormwater runoff. Strict adherence to erosion control and the SWP2 will be maintained by the City of Dodge City and its construction contractors through final site grading and vegetation establishment to avoid degrading water quality adjacent to the Project site. The operation of the Project is also not anticipated to have an adverse effect on the Arkansas River, Ogallala Aquifer, water quality in the area, or existing watershed management plans.

3.3 Water Rights

The Kansas Water Appropriation Act protects both the people's right to use Kansas water and the state's supplies of groundwater and surface water for the future. Prior to development, the Arkansas River in Dodge City was a gaining stream, where fresh water within the alluvium and Ogallala Formation would discharge to the river. As development occurred and water levels dropped in both the Arkansas River alluvium and the Ogallala, the river became a losing stream with surface water percolating down as a source of recharge for the alluvium and Ogallala.

As the occurrence of any notable flow ceases along the Arkansas River, the rate of water level decline increases in wells screened within the Ogallala and alluvial aquifers in and around Dodge City. In general, high flow conditions from flood events rarely travel east of Garden City, located approximately 40 miles west of Dodge City and the Project. Surface water in the Arkansas River at Dodge City is non-existent. Annual mean streamflow above zero at Dodge City is reflective of years with the most significant precipitation events. A positive streamflow value indicates that water is present in the stream channel and moving downstream. This is a fundamental indicator of a healthy and functioning aquatic ecosystem. All indications based on historic data are that the Arkansas River will likely remain dry for the predictable future.

3.3.1 Affected Environment

The source of water for Dodge City is the Ogallala Aquifer. Kansas Geological Survey (KGS) water level data has documented that the aquifer is in a consistent state of decline from over appropriation of water rights which has resulted in groundwater withdrawals exceeding aquifer recharge. The total decline in groundwater level in the Ogallala region in GMD3 since predevelopment to the average water levels during 2021-2023 is 103-feet Whittemore et al., 2023). These declines represent a loss in aquifer thickness of 45 percent. Water level declines

have reached as much as 30 feet in the vicinity of the City of Dodge City's water supply wells.

Based on the City of Dodge City's existing groundwater rights, the City has an annual groundwater pumping limit of 6.29 MGD. As the City of Dodge City has expanded over the past 15 years, the City has acquired a limited number of irrigation water rights. These water rights have not yet been developed for municipal use as most of the groundwater rights are in areas of high nitrates from historic agricultural practices. The City has also received approval for water rights change applications totaling 223 acre-feet per year, which will help reduce the overall projected water supply deficit.

In 2028, the City of Dodge City's projected potable water demand is 6.93 MGD. With a net water supply availability of 6.29 MGD, a net deficit of 0.64 MGD is expected. This deficit is exasperated as water demands increase over time. Declining groundwater levels and over appropriation have caused the Kansas Department of Agriculture - Division of Water Resources DWR) to close the Ogallala Aquifer to new water right applications. The closure has required that the City of Dodge City develop many of its water supply wells through direct purchase of existing irrigation rights. The City has also provided some area farmers with wastewater from its water reclamation center in exchange for converting irrigation water rights to municipal use. The City has been actively seeking acquisition of irrigation water rights with limited success due to many factors including willing sellers, poor groundwater quality, declining groundwater levels, and development cost.

3.3.2 Environmental Consequences

3.3.2.1 Action Alternative

The construction and operation of the Project will not adversely affect any existing water rights in Ford County. To protect the City of Dodge City's existing and future municipal rights, the City will continue to acquire water rights as they become available if the cost, water quality, and well production capacity meet the needs of the City; however, this Project will reuse and replenish/recharge the groundwater table along the Arkansas River and the Ogallala Aquifer that the City of Dodge City relies upon for drinking water. This Project is deemed the most feasible option available to the City to secure long-term water supplies. By implementing the Project, the City will be able to secure a clean and sustainable source of water for the foreseeable future. The Project will allow the City to meet their potable water needs, allow for economic growth, and restore the Ogallala Aquifer in Ford County.

3.3.2.2 No Action Alternative

Under the No Action Alternative, the City of Dodge City will be required to obtain additional existing irrigation water rights, install well infrastructure (wells, well housings, chemical feed systems, and electrical service), install treatment removal of nitrates, radionuclides, hardness, salt, sulfate, etc.), and install conveyance piping. The cost of all this is significant, and it does nothing to secure water supply for the future when the Ogallala Aquifer is nearly depleted.

3.3.3 Environmental Commitment

No mitigation measures are proposed or required for water rights.

3.4 Wetlands and other Waters of the U.S. and Aquatic Habitats

Waters of the U.S. include streams and wetlands and other water bodies that are part of a larger system of waters that have a connection to traditional navigable waterways important for interstate or foreign commerce. In the southwest region of Kansas, wetlands and streams also play crucial roles in overall ecosystem health and provide aquatic habitats and water resources for both livestock and wildlife. They act as natural buffers, filter pollutants, and provide vital habitat for diverse wildlife, including many birds, reptiles, amphibians, and invertebrates. These areas also contribute to groundwater recharge, reduce flood damage, and stabilize stream banks.

3.4.1 Affected Environment

Wetlands consist of various freshwater emergent wetlands and ponds, riverine, and lakes scattered across the area. The National Hydrography Database (NHD) identified Mulberry Creek and the Arkansas River as the two larger waterways in the area. U.S. Fish and Wildlife Service (USFWS), National Wetland Inventory (NWI) data indicates three palustrine emergent (PEM) wetlands and four riverine wetlands, including the Arkansas River, Mulberry Creek, and two unnamed tributaries to Mulberry Creek, cross the Project area (Figure 3-1, Appendix A). The Arkansas River flows west to east through parts of Colorado, Kansas, Oklahoma, and Arkansas. It is located south of Dodge City and north of the force main water pipeline route. Mulberry Creek is a tributary of the Arkansas River. The creek flows west to east and crosses the southern portion of the force main water pipeline route.

3.4.2 Environmental Consequences

3.4.2.1 Action Alternative

A Burns & McDonnell wetland scientist completed the onsite wetland delineation on March 31, 2025 (Appendix C). The delineation was completed following the 1987 Corps of Engineers Wetlands Delineation Manual (1987 Manual) and the 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region – Version 2.0 (Regional Supplement). One palustrine emergent (PEM) wetland and two streams were identified during the wetland delineation. The PEM wetland was 0.34 acre in size and occurred along a storm ditch on the north side of West Beeson Road. A total of two streams, the Arkansas River and an ephemeral stream tributary to the Arkansas River, were identified during the wetland delineation. The Arkansas River occurs at the north end of the force main water pipeline and adjacent to the proposed outfall structure. The ephemeral stream tributary to the Arkansas River occurs along 110 Road. Mulberry Creek was not apparent along 110 Road during the delineation. Center pivot irrigated crop fields occur along the Mulberry Creek stream channel, as indicated by NWI and NHD stream line data, and likely have altered the stream and impacted its flow.

Construction of the Project is not anticipated to result in significant adverse effects to wetland and stream resources. The Reuse WWTP footprint is entirely within uplands and is not anticipated to result in any temporary or permanent adverse impacts to streams or wetlands. It is anticipated that construction of the outfall structure and placement of rip-rap along the Arkansas

River would result in less than 0.1 acre of permanent impact along the Arkansas River. Construction of the force main water pipeline using an open-cut trench construction method would result in temporary impacts to the ephemeral stream tributary to the Arkansas River and the PEM wetland in the storm ditch on the north side of West Beeson Road. All areas that will be temporarily impacted by construction will be restored to original contours and revegetated per the SWP2.

Operation of the Project is anticipated to result in a benefit to the Arkansas River; however, it is not anticipated to restore aquatic habitat to the dry Arkansas River alluvium or riparian habitat. Discharged water will first encounter the dry Arkansas River alluvium, which is approximately 50 feet thick near the discharge location. The alluvium is comprised of coarse sands, gravel, silt with an intermittent clay layer near transition of the alluvium to the Ogallala. Due to the unsaturated nature and relatively high permeability of the alluvial sands, infiltration of treated reuse water will be rapid, and is likely to occur within the first few hundred yards from the discharge location. Percolation will primarily be vertical until the discharge water reaches the water table, roughly 50 feet below ground surface (bgs) near the discharge location.

3.4.2.2 No Action Alternative

The No Action Alternative would have no impacts on wetlands, riparian areas, and aquatic habitats because no construction would occur.

3.4.3 Environmental Commitment

All Project impacts associated with construction of the force main water pipeline would be temporary. No ponds, streams or wetlands would be permanently impacted by construction of the Reuse WWTP or force main water pipeline. Construction of the proposed outfall and placement of rip-rap is anticipated to result in a permanent impact that is less than 0.1 acre along the bank of the Arkansas River. A Pre-Construction Notification (PCN) may need to be submitted to the USACE after the final design of the outfall structure and placement of rip-rap along the Arkansas River is determined and if permanent wetland impacts are greater than 0.1 acre in size. It is anticipated that this Project would qualify for authorization under USACE Nationwide Permit 58 for Utility Line Activities for Water and Other Substances. It is also anticipated that compensatory wetland mitigation would not be required for this Project.

3.5 Floodplains and Riparian Areas

Floodplains Executive Order (EO) 11988 requires federal agencies to avoid to all extents possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative (OFR, 2016). The Federal Emergency Management Agency (FEMA procedures for implementing EO 11988 include an eight-step process that decision-makers must use when considering projects that have potential impacts to or within a floodplain (eCFR “Title 44" 2022).

3.5.1 Affected Environment

According to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the Project vicinity, floodplains occur along the Arkansas River and its tributaries and Mulberry Creek and its tributaries (Figure 3-2, Appendix A). Additionally, a regulatory floodway occurs along the Arkansas River. A levee, operated by the City of Dodge City, occurs on the south side of the Arkansas River. The levee extends approximately 2.6 miles along the curvature of the Arkansas River from a point approximately 0.3 mile west of North 14th Avenue, eastward to a point approximately 1 mile east of South 2nd Avenue.

The areas south of the Arkansas River include agricultural fields, sand quarries, a levee, retail businesses, and residences. The riparian areas along the Arkansas River at Dodge City and in the vicinity of the Project have been previously disturbed through development or because of recreational ATV use.

3.5.2 Environmental Consequences

3.5.2.1 Action Alternative

Construction of the Reuse WWTP does not occur within a floodplain and is anticipated to have no effect on floodplains in the area. Operation of the Reuse WWTP and the anticipated daily discharge from the proposed outfall structure is also not anticipated to change the base flood elevations for the Arkansas River at or below the proposed outfall structure.

The three force main water pipeline route alternatives cross floodplains associated with the Arkansas River, Mulberry Creek and their tributaries. Additionally, all three force main water pipeline route alternatives will require construction within a regulatory floodway to install the force main water pipeline connection to the proposed outfall structure. Construction of the proposed force main water pipeline is not anticipated to result in any impacts to floodplains. All areas of soil disturbance within the proposed temporary construction corridor will be restored to pre-construction topographic contours. The Project will not result in a rise of the floodplain elevation.

Alternative force main water pipeline route 1 crosses approximately 2,070 feet of Special Flood Hazard Areas that are identified as regulatory floodways, Zone AE floodplains, or Zone A floodplains. The crossing lengths and locations are described below.

- 610 feet of Special Flood Hazard Area Zone A floodplain associated with an unnamed tributary to Mulberry Creek while paralleling the east side of 110 Road just north of Warrior Road
- 1,010 feet of Special Flood Hazard Area Zone A floodplain associated with Mulberry Creek while paralleling the east side of 110 Road between Warrior Road and Upland Road
- 350 feet of Special Flood Hazard Area Zone A floodplain associated with an unnamed tributary to the Arkansas River while paralleling the east side of 110 Road between Quaker Road and Primrose Road
- 100 feet of the regulatory floodway along the Arkansas River

Alternative force main water pipeline route 1 also crosses approximately 1,710 feet of an area that is protected by a levee with a 0.2 percent annual chance of flooding or a 1 percent annual chance of flooding with average depths less than 1 foot. This area is crossed where alternative force main water pipeline route 1 parallels the west side of South 14th Avenue. Alternative force main water pipeline route 1 will require an authorization from the USACE 408 Civil Works Review) to cross the levee.

Alternative force main water pipeline route 2 (preferred alignment route) crosses approximately 4,400 feet of Special Flood Hazard Areas that are identified as regulatory floodways, Zone AE floodplains, or Zone A floodplains. The crossing lengths and locations are described below.

- 610 feet of Special Flood Hazard Area Zone A floodplain associated with an unnamed tributary to Mulberry Creek while paralleling the east side of 110 Road just north of Warrior Road
- 1,010 feet of Special Flood Hazard Area Zone A floodplain associated with Mulberry Creek while paralleling the east side of 110 Road between Warrior Road and Upland Road
- 350 feet of Special Flood Hazard Area Zone A floodplain associated with an unnamed tributary to the Arkansas River while paralleling the east side of 110 Road between Quaker Road and Primrose Road
- 2,400 feet of Special Flood Hazard Area Zone AE floodplain associated with the Arkansas River while paralleling the west side of Lulu Avenue and the north side of West Beeson Road
- 30 feet of the regulatory floodway along the Arkansas River

Alternative force main water pipeline route 3 crosses approximately 6,370 feet of Special Flood Hazard Areas that are identified as regulatory floodways, Zone AE floodplains, or Zone A floodplains. The crossing lengths and locations are described below.

- 610 feet of Special Flood Hazard Area Zone A floodplain associated with an unnamed tributary to Mulberry Creek while paralleling the east side of 110 Road just north of Warrior Road
- 1,010 feet of Special Flood Hazard Area Zone A floodplain associated with Mulberry Creek while paralleling the east side of 110 Road between Warrior Road and Upland Road
- 350 feet of Special Flood Hazard Area Zone A floodplain associated with an unnamed tributary to the Arkansas River while paralleling the east side of 110 Road between Quaker Road and Primrose Road
- 270 feet of Special Flood Hazard Area Zone A floodplain associated with an unnamed tributary to the Arkansas River while paralleling the north side of U.S. Highway 400
- 2,230 feet of Special Flood Hazard Area Zone A floodplain also associated with the Arkansas River while paralleling Jane Avenue and 109 Road
- 1,470 feet of Special Flood Hazard Area Zone AE floodplain associated with the Arkansas River while paralleling Jane Avenue, north of West Beeson Road
- 430 feet of the regulatory floodway along the Arkansas River

Construction of the outfall structure and placement of rip-rap along the bank of the Arkansas River will occur within a regulatory floodway. If required, a no-rise certification and a permit application to construct within a floodplain will be submitted to the local floodplain administrator to obtain permission to construct the proposed outfall structure and place rip-rap within a regulatory floodway. It is anticipated that the placement of the outfall structure and rip-rap will not result in a rise in the base flood elevation of the regulatory floodway that occurs along the Arkansas River.

3.5.2.2 No Action Alternative

The No Action Alternative would have no impacts on floodplains, riparian areas, and aquatic habitats because no construction would occur.

3.5.3 Environmental Commitment

No mitigation measures are anticipated, proposed, or required for impacts to floodplains riparian areas, and aquatic habitats. A Construction Within a Floodplain permit would be obtained from the floodplain administrator prior to the start of construction.

3.6 Vegetation & Habitat

The Project occurs where the Western High Plains and Central Great Plains ecoregions meet (Chapman et. al. 2001). These ecoregions once included grassland, dominated by mixed grass prairie and sand sage prairie.

3.6.1 Affected Environment

The mixed grass prairie vegetation community in the Project area typically includes shortgrass species such as buffalo grass (*Buchloe dactyloides*) and blue grama (*Bouteloua gracilis* on the shallow soils of the uplands; tallgrass species such as big bluestem (*Andropogon gerardii* , Indian grass (*Sorghastrum nutans*), and switchgrass (*Panicum virgatum*), in moist areas; and midsized grasses such as little bluestem (*Schizachyrium scoparium*), tall dropseed (*Sporobolus asper*), and side-oats grama (*Bouteloua curtipendula*), and woody species such as hackberry *Celtis occidentalis*), sand plum (*Prunus angustifolia* , and smooth sumac (*Rhus glabra* on slopes (Rohweder, 2022 . Common vegetation in sandsage prairie community includes sand sagebrush (*Artemisia filifolia* , sand bluestem (*Andropogon hallii* , giant sandreed (*Calamovilfa gigantea*), and sand lovegrass (*Eragrostis trichodes*).

Currently, the Project area consists of a mosaic of rangeland, agriculture fields, and center pivot irrigated cropland (Figure 3-3, Appendix A). The dominant vegetation in the upland areas in the Project area include common and weedy species such as big bluestem, switchgrass, smooth brome (*Bromus inermis*), and Virginia wildrye (*Elymus virginicus*). Wetlands in the Project area are restricted to emergent wetlands located along roadside drainage ditches and include common and weedy species such as reed canary grass (*Phalaris arundinacea*), great ragweed (*Ambrosia trifida*), rough cockleburr (*Xanthium strumarium*), and fox-tail barley (*Hordeum jubatum* . Common vegetation along the banks of the Arkansas River and the intermittent streams crossed by the Project includes big bluestem, smooth brome, switchgrass, white heath aster

Symphyotrichum ericoides , Russian thistle (*Salsola tragus*), and amur honeysuckle (*Lonicera maackii*).

Several plant species that are known to be invasive were observed in the Project area (e.g., smooth brome, reed canary grass, Russian thistle, and amur honeysuckle); however, none of the species included on the Kansas Noxious Weed List were observed within or adjacent to the Project footprint.

3.6.2 Environmental Consequences

3.6.2.1 Action Alternative

Construction of the Reuse WWTP, force main water pipeline and outfall would result in permanent and temporary impacts to existing vegetation at and in the vicinity of the Reuse WWTP site, force main water pipeline route along existing public road rights-of-way, and to vegetation along the bank of the Arkansas River at the site of the proposed outfall. All areas temporarily disturbed by construction would be restored and revegetated according to the SWP2.

3.6.2.2 No Action Alternative

Under the No Action Alternative, vegetation would likely remain similar to existing conditions.

3.6.3 Environmental Commitment

It is anticipated that the temporary and permanent impacts to vegetation communities that would occur in the vicinity of the force main water pipeline and outfall structure along the Arkansas River would be mitigated through restoration and revegetation activities using native vegetation, where applicable.

3.7 Wildlife & Fisheries

Large game wildlife species, such as white-tailed deer, mule deer, elk and pronghorn antelope, are economically important species in Kansas for hunting and recreation (Schmidt et al., 2021). The Kansas Department of Wildlife and Parks (KDWP) manages several State Fishing Lakes in Ford County that are stocked with recreational fish species. The State Fishing Lakes are small; however, some also provide waterfowl hunting opportunities. No large reservoirs are present in the Project vicinity or surrounding counties that are a travel destination for fishing.

3.7.1 Affected Environment

The Project area overlaps the ranges of four large game species. The Project area is also located within the overall range for wild turkey. White-tailed deer and mule deer are seen most frequently in shrublands and areas containing some vegetative cover. Pronghorn antelope are less common in the Project area and elk are typically only seen along the western border of Kansas with Colorado.

The Project area does not include any suitable aquatic habitat to provide fishing opportunities. The Arkansas River in Dodge City is a dry riverbed that is frequented by ATVs. The primary

fishing lake in Ford County is Ford County Lake at Ford County Lake State Park. This 45-acre lake, located about 5 miles northeast of Dodge City and 8 miles northeast of the Project area, is stocked with largemouth bass, channel catfish, and bluegill (KDWP, 2012a). Additionally, Lake Charles and Hain State Fishing Lake are other options in the area. Lake Charles is a 1.8-acre recreational lake located on the Dodge City Community College Campus, approximately 2 miles north of the Project area, and is stocked with channel catfish, largemouth bass, and trout (KDWP, 2012b). Hain State Fishing Lake is a shallow lake that is stocked only when water levels and conditions are sufficient to provide fishing opportunity (KDWP, 2012c). Hain State Fishing Lake is located approximately 12 miles northeast of the Project Area.

3.7.2 Environmental Consequences

3.7.2.1 Action Alternative

The Preferred Alternative would likely result in some limited temporary displacement impacts on deer, elk, and pronghorn antelope that may occur in the Project area. Because of the Project's proximity to existing development and roads, it is likely the temporary effects from construction would have no long-term adverse effects on large game species. Similarly, it is also anticipated that the operation of the Project facility would have no long-term adverse effects on large game species. The ranges of large game animals are quite extensive, and the overall effects on habitat would be negligible because of the size of the ranges and the abundance of available habitat in the surrounding areas.

The Preferred Alternative would have no effect on lake levels or fishing opportunities at Ford County Lake, Lake Charles, or Hain State Fishing Lake.

3.7.2.2 No Action Alternative

The No Action Alternative would have no direct effects on the overall ranges of large game, wildlife or fisheries.

3.7.3 Environmental Commitment

No mitigation is proposed or needed for large game, wildlife and fisheries.

3.8 Threatened & Endangered Species

The USFWS Information for Planning and Consultation (IPaC) tool and the Kansas Department of Wildlife and Parks (KDWP) County List of Threatened and Endangered Species for Ford County, Kansas, were accessed to identify federally and state-protected species that may occur within the Project area. These species are protected under the jurisdiction of the USFWS and KDWP by the Endangered Species Act (ESA), Migratory Bird Treaty Act (MBTA), Bald and Golden Eagle Protection Act (BGEPA), and Kansas Nongame and Endangered Species Conservation Act.

3.8.1 Affected Environment

Burns & McDonnell conducted a protected species habitat assessment field survey to evaluate

the potential for the Project to impact state and federally protected species and designated critical habitats (Appendix D). A total of four (4) species were listed on the IPaC as potentially occurring in the Project vicinity. These four (4) species include the federally listed as endangered whooping crane (*Grus americana*) and peppered chub (*Macrhybopsis tetranema*), the federally listed as threatened lesser prairie-chicken *Tympanuchus pallidicinctus* , and the monarch butterfly (*Danaus plexippus*), a species that is federally proposed for listing as endangered Table 3-2).

A total of four (4) Kansas state-listed threatened species and two (2) Kansas state-listed endangered species were identified by the KDWP as possibly occurring in the area of the Project. The Project was also reviewed for potential effects on the bald eagle *Haliaeetus leucocephalus* and golden eagle (*Aquila chrysaetos*), which are federally protected by the BGEPA and the MBTA.

Table 3-2: Threatened & Endangered Species

Common Name	Scientific Name	Status[1]	Habitat Requirements	Potential Habitat within Project Area
Mammals				
Eastern spotted skunk[2]	*Spilogale putorius*	ST	Woodland and woodland edge habitats; may also occur in wooded fencerows and abandoned farm buildings.	Potential Suitable Habitat Present
Birds				
Least tern	*Sterna antillarum*	SE	Beaches, sandbars, and mudflats of lakes, reservoirs, and medium to large rivers	No Suitable Habitat Present
Lesser prairie-chicken	*Tympanuchus pallidicinctus*	FT	Native grasslands containing high density and species variation, proximal to areas of scrub/shrub	No Suitable Habitat Present due to development adjacent to marginal habitat immediately south of the Arkansas River.
Piping plover	*Charadrius melodus*	FT; ST	Beaches, sandbars, and mudflats of lakes, reservoirs, and medium to large rivers	No Suitable Habitat Present
Snowy plover	*Charadrius alexandrinus*	ST	Beaches, sandbars, and mudflats of lakes, reservoirs, and medium to large rivers	No Suitable Habitat Present
Whooping crane	*Grus americana*	FE; SE	Wide river channels, wetlands and farm ponds away from development	No Suitable Habitat Present

Common Name	Scientific Name	Status[1]	Habitat Requirements	Potential Habitat within Project Area
Fishes				
Peppered chub	*Macrhybopsis tetranema*	FE; SE	Shallow channels of permanently flowing streams, where currents flow over clean, fine sand	No Suitable Habitat Present
Plains minnow[2]	*Hybognathus placitus*	ST	Permanently flowing streams, where currents flow over clean, fine sand	No Suitable Habitat Present
Insects				
Monarch butterfly	*Danaus plexippus*	FPT	Grasslands, pastures, meadows, and hay fields with wildflowers and milkweed	Suitable Habitat Present

Source: USFWS IPaC; http://ecos.fws.gov/ipac, accessed 2/18/2025; KDWP Threatened and Endangered Wildlife List; https://ksoutdoors.com/Services/Threatened-and-Endangered-Wildlife/List-of-all-Kansas-Counties/Ford, accessed 2/18/2025

[1] FE: Federally Endangered; FT: Federally Threatened; FPT: Federally Proposed Threatened; SE: State Endangered; ST: State Threatened

[2] State designated critical habitat within Ford County, Kansas; https://ksoutdoors.com/Services/Threatened-and-Endangered-Wildlife/List-of-all-Kansas-Counties/Ford, accessed 2/18/2025

According to USFWS, no federal-designated critical habitat occurs within Ford County. According to KDWP, state-designated critical habitat for the state-listed as threatened eastern spotted skunk is crossed by the Project where suitable habitat occurs within the riparian corridor along the main stem Arkansas River in Ford County. The eastern spotted skunk is not currently listed or proposed for listing as a threatened or endangered species under the ESA. KDWP also recognizes state-designated critical habitat for the state-listed as threatened plains minnow along Crooked Creek in southwestern Ford County. The plains minnow is not currently listed or proposed for listing as a threatened or endangered species under the ESA.

3.8.2 Environmental Consequences

3.8.2.1 Action Alternative

Impacts to protected species and their potential habitats are not anticipated by the construction of the Reuse WWTP because it is sited in an area that has historically been used as a crop field. The force main water pipeline would result in minimal tree and woody vegetation clearing along the drainages that are crossed along its route paralleling existing county roads. Very little woody vegetation occurs where the force main water pipeline outfall will be constructed along the Arkansas River. Construction of the force main water pipeline would also result in temporary disturbance to high plains prairie vegetation on parcels adjacent to the county roads. Impacts to aquatic habitats are not anticipated because the Arkansas River and the drainages crossed by the force main water pipeline do not contain flowing water except during and immediately after precipitation events.

Based on the results of the habitat assessment field survey, provided in Appendix D, and the responses received from the USFWS and KDWP provided in Appendix B, it was determined that the Project may affect but is not likely to adversely affect the eastern spotted skunk and would have no effect on the remaining state- and federally listed species. Immediately south of the Arkansas River, one area of marginal habitat could be utilized by the eastern spotted skunk. Although this area was characterized by scrub/shrub and grazed rangeland comprised of native grasses such as switchgrass, little bluestem, big bluestem, eastern red-cedar, and American plum, there was a relatively high amount of nearby development and disturbance from anthropogenic activities associated with rural residences and commercial properties. The eastern spotted skunk is much more tolerant of human development than the lesser prairie chicken or the remaining state- and federally listed species. The Reuse WWTP will be constructed adjacent to an existing wastewater facility and the pipeline will be constructed within previously disturbed utility rights-of-way along existing public roadways; therefore, it was determined that the proposed Project may affect but is not likely to adversely affect the eastern spotted skunk but would have no effect on the remaining state- and federally listed species, including the lesser prairie chicken.

3.8.2.2 No Action Alternative

The No Action Alternative would have no short- or long-term impacts to threatened and endangered species at or in the vicinity of the Project because no construction and associated disturbance and clearing would occur.

3.8.3 Environmental Commitment

A State Action Permit application would be submitted to KDWP for the portion of the Project occurring within the state-designated critical habitat for the eastern spotted skunk along the Arkansas River. It is anticipated that the temporary and permanent impacts to riparian vegetation that would occur in the vicinity of the force main water pipeline and outfall structure along the Arkansas River would be mitigated through restoration and revegetation activities along the construction corridor using native vegetation. To avoid impacts to birds protected under the MBTA, any woody vegetation within the construction corridor where it crosses the riparian corridor of the Arkansas River would be removed outside of the migratory bird primary nesting season in Kansas which occurs from April 15 to July 15.

3.9 Recreation

This section analyzes the potential impacts of the Project on existing and potential recreation opportunities and facilities within the Project area and surrounding vicinity. Recreational resources, including parks, trails, open spaces, and water-based recreational areas, contribute significantly to the quality of life for residents and visitors, providing physical, mental, and social benefits.

3.9.1 Affected Environment

There are several parks and one youth complex located in Dodge City and within two miles of the Project vicinity. The closest park to the Project is Longbranch Park. It is located approximately 615 feet from Project. Other parks located within 2 miles of the Project include

Beeson Park, Chilton Park, Friendship Park, Girl Scout Park, Kiwanis Park, Lions Park, Optimist Park, Willow Park, and Wright Park. These parks are all located in Dodge City, north of the north end of the Project. No public parks are located at the south end of the Project.

3.9.2 Environmental Consequences

3.9.2.1 Action Alternative

Longbranch Park is located approximately 615 feet from the proposed force main water pipeline route alternatives. All of the parks in the vicinity of the Project are located in Dodge City north of the north end of the force main water pipeline routes. No public parks are located in the vicinity of the Reuse WWTP at the south end of the Project. Construction of the Project, including construction of the force main water pipeline, does not cross any parks and is not expected to affect public use or access to any public parks.

3.9.2.2 No Action Alternative

The No Action Alternative would have no short- or long-term impacts on public recreation facilities because no construction would occur.

3.9.3 Environmental Commitment

No mitigation measures are proposed or required for the Project related to public recreation facilities.

3.10 Aesthetics, Visual, & Noise

This section addresses the potential impacts of the Project on visual aesthetics and ambient noise. Aesthetics refers to the visual quality of an area and the elements within it that contribute to its overall visual appeal. Views relate to access and potential obstructions to scenic resources or panoramic views. Noise, defined as unwanted sound, can interfere with normal activities and negatively impact physical and mental well-being. Both positive and negative impacts on these factors are evaluated to ensure the Project aligns with existing land uses, design policies, and guidelines, while also considering potential mitigation measures for any adverse effects.

3.10.1 Affected Environment

The proposed location of the new Reuse WWTP facility is adjacent to the existing, operating WWTP located west of the intersection of U.S. Highway 283 and Warrior Road. The proposed site of the Reuse WWTP, which is surrounded by rolling hills and center pivot irrigated crop fields, is visible from U.S. Highway 283 and Warrior Road. The existing, operating WWTP is located north and south of Warrior Road. The site of the Reuse WWTP is situated among agricultural fields in a rural area of Ford County. The Reuse WWTP and surrounding area is zoned for agricultural use. The nearest residence is located approximately 4,700 feet west of the Reuse WWTP and 1,250 feet west of the existing South WWTP facility. The existing South WWTP facility blocks the view of the Project site from the nearest resident.

The majority of the proposed force main water pipeline route along 110 Road, south of Dodge City, would cross through areas that are currently being used for agriculture. Some rural residences are present along the proposed route. In Dodge City, north of U.S. Highway 56, the proposed force main water pipeline route along South 14th Avenue, West Beeson Road, and Lulu Avenue, crosses through areas zoned for light industry, commercial, and residential land uses. However, the force main water pipeline route remains in existing public rights of way along public roadways.

The operation of the existing South WWTP, industrial facilities, and farm equipment contributes to the existing ambient, baseline noise level; the constant flow of vehicles on nearby county roads and highways and regular passing of trains also contributes to regular ambient background noise in the area. Applicable Federal, state, county, and municipal noise ordinances were reviewed. The State of Kansas does not have noise ordinances with applicable numerical sound level limits for the Project. The USEPA established noise guidelines to protect public health and welfare in Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, 1974 (USEPA, 1974). Though the guidelines are not enforceable Federal limits or standards, they represent valid criteria for evaluating the effect of Project-generated noise on public health and welfare. The recommended USEPA guideline for outdoor activity in residential areas is an Ldn (Day Night Average Sound Level) of 55 dBA (A-weighted decibel) or less. No residential areas are present immediately adjacent to the Reuse WWTP; however, residential areas are present along the north end of the force main water pipeline. Occupational Safety and Health Administration (OSHA) standards for occupation noise exposure would be implemented for construction workers during construction of the Project and for WWTP personnel during operation of the Project facilities.

3.10.2 Environmental Consequences

3.10.2.1 Action Alternative

The Reuse WWTP and force main water pipeline are anticipated to have minimal impact on the surrounding land uses and aesthetics in the area. The Reuse WWTP will be constructed adjacent to the existing, operating WWTP. Construction of the proposed force main water pipeline route would be visible from public roadways; however, the buried force main water pipeline would not be visible once construction is complete.

Two main types of sound are anticipated to be associated with the Project – construction sounds associated with construction equipment and activities and the operational sounds of the machinery and processes at the Reuse WWTP facility. There would be an increase in noise from heavy equipment and trucks during construction of the Project, but this would be temporary, generally occur during daylight hours, and last only during the construction of the Project. Construction-related sounds would vary in intensity and duration and would not be permanent. Sounds generated by construction would emanate primarily from the use of heavy construction equipment and truck traffic on local roads. Temporary construction-related sounds would be minimized by using equipment and vehicles with properly functioning mufflers. Minor temporary disturbances to nearby residences, businesses and industrial facilities could result from sounds generated by construction. Some wildlife that are tolerant of human disturbance and

urban areas that occur in the vicinity of the Project could be temporarily impacted by construction-related sounds. These wildlife species may temporarily leave the vicinity of the Project during construction; however, they are likely to return once construction is complete. It is not anticipated that there would not be any long-term sound effects on wildlife resulting from construction. Additionally, the anticipated temporary short-term construction-related sounds would not result in long-term impacts to the residences, businesses and industrial facilities located near the Project.

Operational sounds would occur while the Reuse WWTP is in operation. Operational sounds are typically less intense and less fluctuating than construction-related sounds. It is anticipated that the noise levels from the operation of the Project would not change considerably from the noise levels currently experienced from the normal operation of the equipment and machinery at the existing Dodge City South WWTP. It is unlikely that considerable noise changes or increases will occur from the operation of the Project in addition to the operation of the existing Dodge City South WWTP facilities. The Project would comply with applicable noise ordinances and would operate below the maximum permissible noise limits.

No special noise sensitive land uses or activities are in proximity to the Project that may be affected by construction or operation noise.

3.10.2.2 No Action Alternative

The No Action Alternative would have no short- or long-term impacts on aesthetics, viewsheds, or ambient noise levels because no construction would occur.

3.10.3 Environmental Commitment

No mitigation measures are proposed or required for the Project related to aesthetics, visual resources, or ambient noise.

3.11 Prime and Unique Farmland

The Farmland Protection Policy Act (FPPA) was passed by Congress in 1981 as Public Law 97-98. FPPA's intent is to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. Farmland is defined as prime farmland, unique farmland, and land of statewide or local importance. Prime and unique farmlands are determined by the Secretary of Agriculture based on physical and chemical characteristics. Statewide or local important farmlands are determined by state or local agencies, with approval of the Secretary of Agriculture.

3.11.1 Affected Environment

Land use patterns in the Project area are influenced by the suitability and limitations of soil properties for development. The USDA Natural Resources Conservation Service NRCS) has surveyed and mapped the soil units in Ford County based on the physical properties and composition of the soil and the amount of slope and drainage where the soil is located. A review of NRCS classifications using its Web Soil Survey (USDA NRCS, 2025) identified 32 soil types

listed as Prime Farmland with conditions or Farmlands of Statewide or Local Importance within the Project footprint of the force main water pipeline route alternatives (Table 3-3). The USDA NRCS data also indicated that the 6-acre proposed Reuse WWTP site occurs on one soil type (Penden-Tobin complex, 0 to 15 percent slopes) that is not a hydric soil, considered a prime farmland soil, or farmland of statewide importance.

3.11.2 Environmental Consequences

3.11.2.1 Action Alternative

According to USDA NRCS soil survey data, the Reuse WWTP is located entirely on one soil type: Penden-Tobin complex, 0 to 1 percent slopes. This soil type is not considered hydric, a prime farmland soil, or farmland of statewide importance. It is anticipated that the soils along the force main water pipeline corridor would be temporarily impacted by construction activities. Permanent impacts to soils along the force main water pipeline are not anticipated. Construction of the force main water pipeline would occur in the previously disturbed utility right-of-way along public road rights-of-way and would not result in permanent impacts to hydric soils, prime farmland soils, or farmland of statewide importance that are currently in agricultural production. Construction of the outfall would occur along the bank of the Arkansas River and would impact the riverbed alluvium.

3.11.2.2 No Action Alternative

The No Action Alternative would have no short- or long-term impacts to geology or soil at or in the vicinity of the Project because no construction would occur.

3.11.3 Environmental Commitment

To prevent the mixing of topsoil with subsoil layers during construction of the force main water pipeline, the topsoil would be stored separately from the subsoil material when excavating the trench to place the force main water pipeline. After placing the force main water pipeline in the trench, the subsoil and then the topsoil will be placed during backfilling of the trench. All areas that are disturbed during construction activities would be restored to preconstruction contours and revegetated.

Compaction and rutting of soils may occur during Project construction. If compaction and rutting of soils occurs, the affected soils would be de-compacted and graded during the restoration process.

During dry weather conditions when the soil is susceptible to wind erosion, preventative measures will be taken. In areas where bare soil is exposed, water or other dust palliatives will be applied to the soil to weigh it down and prevent it being eroded by the wind. In areas where the soil has been stockpiled for later use, the soil will be covered. Measures will be implemented to make sure areas do not get over-watered and eroded from the application of the water.

Table 3-3: – Soil Properties within Project

Soil Type	Classification	Hydric Rating	Project Attribute	Type of Disturbance	Alternate 1 acres	Alternate 2 acres	Alternate 3 (acres
Attica fine sandy loam 0 to 1 percent slopes	Farmland of statewide importance	Non-Hydric	Force Main Water Pipeline	Temporary	0.00	1.37	1.37
Canadian fine sandy loam, rarely flooded	Farmland of statewide importance	Non-Hydric	Force Main Water Pipeline	Temporary	0.00	1.07	1.07
Dale and Humbarger clay loams, rarely flooded	All areas are prime farmland	Non-Hydric	Force Main Water Pipeline	Temporary	1.40	1.07	1.07
Dale silt loam, rarely flooded	All areas are prime farmland	Non-Hydric	Force Main Water Pipeline	Temporary	0.40	0.39	0.39
Farnum and Funmar loams, 0 to 1 percent slopes	All areas are prime farmland	Non-Hydric	Force Main Water Pipeline	Temporary	0.71	0.69	0.69
Harney silt loam, 0 to 1 percent slopes	All areas are prime farmland	Non-Hydric	Force Main Water Pipeline	Temporary	8.95	8.79	8.79
Harney silt loam, 1 to 3 percent slopes	All areas are prime farmland	Non-Hydric	Force Main Water Pipeline	Temporary	4.50	4.42	4.42
Holdredge silt loam, 1 to 3 percent slopes	All areas are prime farmland	Non-Hydric	Force Main Water Pipeline	Temporary	0.84	0.83	0.83
Las Animas-Lincoln complex, occasionally flooded	Farmland of statewide importance	Non-Hydric	Force Main Water Pipeline	Temporary	0.66	0.55	0.55
Las Animas-sandy loam, occasionally flooded	Farmland of statewide importance	Non-Hydric	Force Main Water Pipeline	Temporary	0.09	0.06	0.06
Lesho-Lesho-saline clay loams, occasionally flooded	Farmland of statewide importance	Non-Hydric	Force Main Water Pipeline	Temporary	0.00	0.55	0.55
Lesho clay loam, occasionally flooded	Farmland of statewide importance	Non-Hydric	Force Main Water Pipeline	Temporary	0.44	0.12	0.12
Lincoln soils, frequently flooded	Not prime farmland	Non-Hydric	Force Main Water Pipeline	Temporary	0.01	0.06	0.06
Naron-Saltcreek fine sandy loams, 1 to 3 percent slopes	Farmland of statewide importance	Non-Hydric	Force Main Water Pipeline	Temporary	5.87	2.01	2.01
Ness clay	Not prime farmland	Hydric	Force Main Water Pipeline	Temporary	0.82	0.81	0.81
Penden-Tobin complex, 0 to 15 percent slopes	Not prime farmland	Non-Hydric	Force Main Water Pipeline	Temporary	2.72	2.67	2.67
			Reuse WWTP	Permanent	6.00	6.00	6.00
Pratt-Tivoli loamy fine sands, 5 to 15 percent slopes	Farmland of statewide importance	Non-Hydric	Force Main Water Pipeline	Temporary	3.11	2.88	2.88
Pratt loamy fine sand, 5 to 12 percent slopes	Farmland of statewide importance	Non-Hydric	Force Main Water Pipeline	Temporary	0.61	1.21	1.21
Roxbury silt loam, channeled, frequently flooded	Not prime farmland	Non-Hydric	Force Main Water Pipeline	Temporary	0.36	0.35	0.35
Uly-Coly silt loams, 3 to 6 percent slopes, eroded	Farmland of statewide importance	Non-Hydric	Force Main Water Pipeline	Temporary	0.21	0.20	0.20
Uly-Harney silt loams, 1 to 3 percent slopes	Prime farmland if irrigated	Non-Hydric	Force Main Water Pipeline	Temporary	9.09	8.92	8.92
Uly silt loam. 3 to 6 percent slopes	All areas are prime farmland	Non-Hydric	Force Main Water Pipeline	Temporary	3.73	3.66	3.66
Total Areas of Prime Farmland Disturbed			Force Main Water Pipeline	Temporary	29.63	28.05	28.77
			Reuse WWTP	Permanent	0	0	0
Total Acres of Farmland of Statewide and Local Importance			Force Main Water Pipeline	Temporary	10.99	9.24	10.01
			Reuse WWTP	Permanent	0	0	0
Total			Force Main Water Pipeline	Temporary	44.53	41.12	42.67
			Reuse WWTP	Permanent	6.00	6.00	6.00

Source: USDA NRCS Web Soil Survey, Accessed March 17, 2025, from https://websoilsurvey.nrcs.usda.gov/app/.

3.12 Cultural Resources & Indian Trust Assets

The National Register of Historic Places (NRHP) lists seven historic sites within 2 miles of the Project. The Burr House is the closest historic site in the Project vicinity. It is located approximately 1.4 miles north of the Project, along West Vine Street in Dodge City, Kansas.

3.12.1 Affected Environment

Burns & McDonnell conducted a Phase I cultural resources background review and a Phase II archaeological survey for the Project. A copy of the cultural resources report is provided in Appendix E. The Area of Potential Affect (APE) that was evaluated during the cultural resources survey included a one-mile buffer around the Reuse WWTP and force main water pipeline route corridors. The archaeological survey was conducted between April 7 and 9, 2025. Burns & McDonnell staff conducted the survey in accordance with the professional standards and guidelines of the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716-44742), the Secretary's Standard for Identification (48 FR 44720-44723), the standards and guidelines of the Kansas State Historical Society (KSHS), and the Kansas State Historic Preservation Office (SHPO) SHPO's Guide to Archeological Survey, Assessment, and Reports (Epperson et al., 2004). In addition, the survey complies with standards set by the Osage Nation Historic Preservation Office (ONHPO) Archaeological Survey Standards (ONHPO 2023) and NHPA Section 106 Protocol and Standards (ONHPO 2025).

Based on a review of the site files maintained by KSHS, only a single previously recorded archaeological site was recorded in the vicinity of the Project. The previously recorded archaeological site does not intersect with the Project. A review of the National Register of Historic Places (NRHP) identified one historic district and two historic properties within the APE for the cultural resources survey. These are the Dodge City Downtown Historic District, the Municipal Building within the Boot Hill Museum, and the Hiram T. Burr House, all located approximately one mile northeast of the Project. A review of the Kansas Historic Resources Inventory (KHRI identified one historic district and one historic property within the APE for the cultural resources survey. These are the Kansas Power Company Plant and the Boot Hill Museum, both located approximately one mile northeast of the Project. Historic-age U.S. Geological Survey (USGS) topographic quadrangles, county plat maps, and General Land Office (GLO) maps were reviewed for structures or features which could indicate the location of an archeological site in the present day. No structures or features were identified which intersect the Project. The Santa Fe Trail was located in downtown Dodge City and generally follows Wyatt Earp Boulevard approximately one mile north of the Project.

The Project measures a total of 50.6 acres, of which 5.95 acres comprises the Reuse WWTP and the remainder consists of the 11 miles of proposed force main water pipeline installation within the existing utility easements adjacent to or overlying existing road rights-of-way. The vast majority of the linear component of the Project is previously disturbed by existing infrastructure, buried utilities, and landscape modification. A total of 333 shovel tests were attempted within the Project footprint, 26 of which were negative and 307 were in previously disturbed areas. No

archaeological sites or other cultural resources were found as a result of the pedestrian survey and shovel testing in the Project footprint.

3.12.2 Environmental Consequences

3.12.2.1 Action Alternative

Construction and operation of the Project are not expected to result in any impact on cultural or historic resources that may occur in the area. No cultural resource sites were discovered during the field survey that intersect or are immediately adjacent to the Project footprint. Similarly, no previously reported archaeological sites or historic districts intersect with the Project.

3.12.2.2 No Action Alternative

The No Action Alternative would have no short- or long-term impacts to cultural or historical resources at or in the vicinity of the Project because no construction would occur.

3.12.3 Environmental Commitment

No mitigation is anticipated. If buried cultural resources are encountered during Project construction, land-disturbing activities in the immediate area will be halted. Cultural resource investigators, the lead federal agency archaeologist, and the SHPO will be notified. Any exposed cultural resources would be evaluated for their significance.

3.13 Public Health and Safety

This section evaluates the potential impacts of the Preferred Alternative and its alternatives on public health and safety within the Project area. It considers potential exposures to environmental hazards, health effects, and the potential for increased risks associated with various Project activities and environmental conditions. This section examines both the Project's potential to negatively impact public health and safety, as well as opportunities to enhance these aspects through Project design and implementation of measures to mitigate potential effects.

3.13.1 Affected Environment

The Reuse WWTP is located in an area that is zoned for agricultural use. The force main water pipeline route occurs along public road rights-of-way and is adjacent to areas zoned for agricultural, industrial, and residential uses. In the vicinity of the Project the 2024 Annual Average Daily Traffic (AADT) count for U.S. Highway 56 was 3,340 vehicles and the 2024 AADT for U.S. Highway 283 was 3,720 vehicles, according to the Kansas Department of Transportation (KDOT, 2024)

3.13.2 Environmental Consequences

3.13.2.1 Action Alternative

During construction, it is anticipated that truck and vehicle traffic would temporarily increase along the public roads in the vicinity of Project construction; however, the increases are not anticipated to be significant or permanent. The proposed construction activities are not

anticipated to require a lane or road closure along a public transportation corridor or require excavation within travel lanes of public roadways. If a lane or road closure along a public transportation corridor would be required, it is anticipated to be temporary and only be needed for a few days. Truck access to the Project site would be by U.S. Highway 283, South 14th Avenue/County Road 110, and West Beeson Road. Access to the Project vicinity is served by U.S. Highways 54, 56, 283, and 400. The roads, bridges, and crossings in the area are sufficient for the Project's delivery and transportation needs. During operation, Project-related traffic at the Reuse WWTP property and along the force main water pipeline and nearby roads is expected to be similar to existing traffic levels. The additional traffic along public roadways as a result of construction and operation of the Project is not anticipated to result in any increased response times for the police department, fire department, or emergency medical teams in the area.

The Project is not anticipated to change the configuration of existing overhead and below ground transmission and distribution lines in the area. Similarly, the equipment installed for the Project is not anticipated to result in occupational work exposures exceeding threshold limits for electric fields and magnetic fields.

Project construction poses risks for potential health and safety hazards for construction personnel through the operation of heavy equipment, the use of tools during construction, and working in an active construction site. These hazards would be mitigated by compliance with all applicable Federal and State occupational safety and health standards, National Electric Safety Code (NESC) regulations, and utility design and safety standards.

A construction Health and Safety Plan will be developed to address public and worker safety during the construction of the Project. The existing Health and Safety Plan for the existing South WWTP would cover the operation of the Project facilities. The construction Health and Safety Plan would identify any requirements for minimum construction or operation distances from existing buildings as well as requirements for temporary fencing around staging, excavation, and laydown areas during construction. The plan would also include provisions for worker protection as is required under OSHA (CFR) 1926. During construction, all employees, contractors, and subcontractors would be required to adhere to OSHA safety procedures, which will be taught in a mandatory training for all construction works on site. All heavy equipment would be up to OSHA safety standards and personal safety equipment would be required for all workers on site. Any accidents or incidents would be reported to the designated safety officer.

During construction, there is a risk of accidental fires being started by human activities such as refueling heavy equipment or the use of vehicles in dry vegetated areas. The construction Health and Safety Plan will have procedures in place to address and restrict the various activities that have a fire-related risk.

Construction and operation of the Project would also involve the storage of hazardous and regulated materials, which could accidentally leak or spill on site. All potentially hazardous material will be collected by a licensed/permitted recycler. In order to reduce the risk of releasing hazardous materials during construction, all work would be in accordance with OSHA standards and protocols, along with any other applicable Federal and State environmental regulations. If a hazardous material were to be accidentally released during construction, all activities involved

with the cleanup, management, and disposal of contaminated soils would occur in conjunction with USEPA and State standards, which reduces the potential for significant impacts resulting from the release of hazardous materials.

All construction sites will be managed to reduce risks to the general public. The general public will not be allowed in any construction areas associated with the Project. Increased traffic on local roads during construction would slightly increase the risk of traffic accidents to the general public. Increased traffic is anticipated to be short-term in nature and will return to current levels during operation of the Project.

3.13.2.2 No Action Alternative

The No Action Alternative would have no short- or long-term impacts on traffic because no construction would occur.

3.13.3 Environmental Commitment

Although it is not anticipated, a traffic control plan would be developed, if necessary, that would be implemented during construction activities and obtain the appropriate road/highway haul permits for heavy or oversized vehicles on public road rights-of-way under the jurisdiction of the KDOT, Ford County, and Dodge City. All Dodge City employees, contractors, and subcontractors will comply with all applicable Federal and State occupational safety and health standards, NESC regulations, and utility design and safety standards. A construction Health and Safety Plan will be developed to address public and worker safety during the construction of the Project. The construction Health and Safety Plan would identify any requirements for construction, as well as requirements for temporary fencing around staging, excavation, and laydown areas during construction. The plan would also include provisions for worker protection as is required under OSHA CFR 1926. During construction, all employees, contractors, and sub-contractors would be required to adhere to OSHA safety procedures, which will be taught in a mandatory training for all construction works on site. All heavy equipment would be maintained to OSHA safety standards and personal safety equipment would be required for all workers on site. Any accidents or incidents would be reported to the designated safety officer.

3.14 Socioeconomics

This section provides an assessment of the potential socioeconomic impacts associated with the Project. Existing social and economic conditions within the Project area such as demographics, employment, and income were used to determine potential changes, both beneficial and adverse to the socioeconomic setting of the Project area.

3.14.1 Affected Environment

The Project is located in Ford County Kansas, a primarily rural county dominated by agriculture. The Project occurs mostly within areas that the county has zoned for agriculture. Part of the force main water pipeline and the outfall structure occur within Dodge City limits and areas that are zoned for agricultural, residential, or business uses. According to the U.S. Census Bureau (USCB) data, the 2024 estimated population of Dodge City and Ford County had a slight

decreased from 2020 while the State of Kansas saw a slight increase in population (Table 3-4). All three saw increases in population from 2010 to 2020.

Table 3-4: Population for Dodge City, Ford County, and the State of Kansas

Population	Dodge City	Ford County	State of Kansas
2020 Census	27,788	34,287	2,937,880
2024 Census (Estimates	27,663	34,072	2,970,606
Percent Change 2020-2024	-0.4%	-0.6%	1.1%
2010 Census	27,340	33,848	2,853,118

Source: USCB, accessed May 28, 2025, from https://data.census.gov/.

The 2023 estimate of Dodge City's resident labor force, defined as the population aged 16 and over, was 19,862 individuals, or 71.8 percent of the total estimated 2023 population (27,652); 14,284 of these workers were employed, resulting in 5.1 percent unemployment for the civilian labor force (USCB, 2025). Ford County's resident labor force was 72.9 percent of the total estimated 2023 population for the county (34,133 and 4.7 percent unemployment for the civilian labor force. Most of Ford County's residents live in Dodge City, resulting in similar employment statistics. The 2023 resident labor force for the State of Kansas was estimated to be approximately 79.6 percent of the State's total population with 3.2 percent unemployment for the civilian labor force. Table 3-5 provides employment characteristics for the state, county, and local community.

Table 3-5: 2023 Employment Data

Population	Dodge City	Ford County	State of Kansas
Total Population (2023 Estimate)	27,652	34,133	2,937,569
Population 16 years and over	19,862	24,876	2,339,516
In labor force	14,284	17,542	1,549,558
Employed (civilian labor force	13,558	16,726	1,477,593
Unemployed (civilian labor force)	726	816	49,867
Armed forces	0	0	22,098
Not in labor force	5,578	7,334	789,958
Percent unemployed (civilian labor force)	5.1%	4.7%	3.2%
Top occupation	Management, Business, Science, and Arts	Management, Business, Science, and Arts	Management, Business, Science, and Arts
Top industry	Manufacturing	Manufacturing	Educational Services, and Health Care and Social Assistance

Source: USCB, accessed May 28, 2025, from https://data.census.gov/.

The top occupation category for Dodge City, Ford County, and the State of Kansas in 2023 was Management, Business, Science, and Arts. The top industry for Dodge City and Ford County in 2023 was manufacturing while the top industry in the State of Kansas for the same year was educational services, health care and social assistance (USCB, 2025). Median household income in Dodge City was estimated to be $67,958 in 2023, which was less than median household income for the State of Kansas and Ford County (Table 3-6). Dodge City also had a slightly higher percentage of population below the poverty level when compared to Ford County and the State of Kansas.

Table 3-6: 2023 Income and Poverty

Metric	Dodge City	Ford County	State of Kansas
Median household income in 2023 inflation-adjusted dollars	$67,958	$70,495	$70,333
Percent of population below the poverty level in the Past 12 months.	15.9%	14.4%	11.2%

Source: USCB, accessed May 28, 2025, from https://data.census.gov/.

3.14.2 Environmental Consequences

3.14.2.1 Action Alternative

Local businesses near the Project, such as gas stations, convenience stores, restaurants, and hotels may experience increases in business during construction due to construction workers onsite. Local materials such as concrete, lumber, and general hardware may be purchased from local businesses. This increased demand would be temporary, would cease after construction is complete, and would not add considerably to the demand on existing business, services, or community facilities. The Project is not anticipated to significantly increase the number of permanent residents in the area. The estimated peak construction workforce is approximately 30 workers. Construction will take approximately 18 months, and workers would be employed from a few weeks to over a year, depending on their assigned task. The City of Dodge City may add one or more additional personnel to operations and maintenance staff already located on the existing South WWTP as a result of the Project.

The Reuse WWTP is located in a rural area of Ford County. The force main water pipeline and outfall structure will be located primarily in rural areas but will cross through residential areas on the south side of Dodge City. Adverse human effects because of the Project may include temporary additional noise and traffic impacts during construction and temporary visual impacts during construction. However, no significant permanent impacts or changes to the communities along the Project are anticipated to result from construction or operation of the Project.

3.14.2.2 No Action Alternative

The No Action Alternative would have no short- or long-term impacts to socioeconomics in the vicinity of the Project area because no construction would occur.

3.14.3 Environmental Commitment

No mitigation measures are proposed or required for the Project related to socioeconomics.

Chapter 4 - Summary & Environmental Commitments

This section summarizes the potential environmental impacts associated with the Preferred Alternative. It details the potential environmental consequences across various resource areas, such as air quality, water resources, biological resources, cultural resources, and socioeconomics. The analysis presented herein supports the determination of whether the Preferred Alternative would result in a significant environmental impact, potentially leading to a Finding of No Significant Impact (FONSI) or the need for a more detailed Environmental Impact Statement (EIS).

Table 4-1: Summary of Environmental Effects of the Action Alternative

Resource	Temporary Impacts	Permanent Impacts
Air Quality	During construction, exhaust emissions, fugitive dust, and other construction-related emissions would temporarily increase in the Project area. However, emissions associated with the construction of the Project are not anticipated to substantially impact the overall air quality in the vicinity of the Project.	Operation of the Preferred Alternative is not expected to result in a significant increase in odors; however, odor controls would be implemented if necessary.
Water Resources	Construction of the Reuse WWTP and force main water pipeline Project is not anticipated to result in an adverse effect on the watershed.	The proposed outfall structure along the Arkansas River would not adversely affect the river. Operation of the Project is anticipated to have a positive effect on the Arkansas River, the Ogallala Aquifer, and water resources in the Project vicinity.
Water Rights	Construction of the Project will not adversely affect any existing water rights in Ford County.	Operation of the Project is not anticipated to affect any existing water rights in the area.
Waters of the United States	Construction of the Reuse WWTP will not impact any wetlands, streams, or waters of the U.S. Construction of the force main water pipeline using an open-cut trench construction method will result in temporary impacts to an ephemeral stream tributary to the Arkansas River and a PEM wetland in the storm ditch on the north side of West Beeson Road. All areas that will be temporarily impacted by construction will be restored to original contours and revegetated per the SWP2.	Construction of the Project is not anticipated to result in permanent adverse effects to wetland and stream resources.

Resource	Temporary Impacts	Permanent Impacts
Floodplains and Riparian Areas	Construction of the Project will temporarily occur within floodplains but is not anticipated to change the base flood elevations of floodplains in the area.	Operation of the Reuse WWTP and the anticipated daily discharge from the proposed outfall structure is also not anticipated to change the base flood elevations for the Arkansas River at or below the proposed outfall structure.
Vegetation and Habitat	Construction of the Reuse WWTP, force main water pipeline and outfall would result in temporary impacts to existing vegetation at and in the vicinity of the Reuse WWTP site, force main water pipeline route along existing public road rights-of-way, and to vegetation along the bank of the Arkansas River at the site of the proposed outfall. All areas temporarily disturbed by construction would be restored and revegetated according to the SWP2.	Construction of the Reuse WWTP and outfall would result in permanent impacts to existing vegetation within the footprint of the Reuse WWTP and outfall. The Project is not anticipated to result in a significant permanent impact to vegetation and habitat in the Project vicinity.
Wildlife and Fisheries	Construction of the Project may result in some limited temporary displacement impacts on large game species that may occur in the Project area.	Operation of the Project would have no effect on large game species, lake levels, or fishing opportunities at nearby fishing lakes.
Threatened and Endangered Species	Construction of the Project may affect but is not likely to adversely affect the eastern spotted skunk and would have no effect on the remaining state- and federally listed species.	Operation of the Project is anticipated to have no effect on state- or federally listed species.
Recreation	Construction of the Project, including construction of the force main water pipeline, is not expected to affect public use or access to any public parks or facilities.	Operation of the Project is not expected to affect public use or access to any public parks or facilities.
Visual Aesthetics and Noise	Construction of the Project is anticipated to have minimal, temporary impacts on the surrounding land uses and aesthetics in the area. An increase in noise from heavy equipment and trucks during construction of the Project would be temporary, generally occurring during daylight hours, and would last only during the construction of the Project.	It is anticipated that the noise levels from operation of the Project would not change considerably from the noise levels currently experienced from the normal operation of the equipment and machinery at the existing Dodge City South WWTP.
Prime and Unique Farmland	Construction of the force main water pipeline would occur in the previously disturbed utility right-of-way along public road rights-of-way and would only result in minor temporary impacts to hydric soils, prime farmland soils, or farmland of statewide importance.	The Reuse WWTP would not impact any prime farmland soils. Permanent impacts to soils along the force main water pipeline are not anticipated.
Cultural Resources and	Construction of the Project will have no effect on NRHP-eligible properties or cultural resource sites. There are no known ITA	Operation of the Project will have no effect on NRHP-eligible properties, cultural resource sites, or Indian Trust Assets.

Resource	Temporary Impacts	Permanent Impacts
Indian Trust Assets	resources that have identified that could be affected by the Preferred Alternative.	
Public Health and Safety	A construction Health and Safety Plan will be developed to address public and worker safety during the construction of the Project. All construction sites will be managed to reduce risks to the general public.	The facility will have a Health and Safety Plan that will be implemented during operation.
Socioeconomics	Local businesses near the Project, such as gas stations, convenience stores, restaurants, and hotels may experience increases in business during construction due to construction workers onsite.	No significant permanent impacts or changes to the communities along the Project are anticipated to result from construction or operation of the Project.

4.1 Environmental Commitments

This section summarizes the environmental commitments that will be implemented as part of the Preferred Alternative. These commitments are integral to avoiding, minimizing, mitigating, and monitoring potential impacts to the surrounding human and natural environment.

4.1.1 Air Quality

Multiple control measures will be implemented during construction to minimize air emissions and potential impacts. Construction equipment would be maintained in good working order to minimize exhaust emissions from equipment. To minimize particulate matter from soil disturbance, preventative measures would be implemented during times when exposed soil is susceptible to wind erosion. In areas where bare soil is exposed, water or other dust palliatives would be applied to the soil to limit wind erosion. Measures will be implemented so that areas do not get overwatered and eroded from the application of the water. In addition, appropriate speed limits would be established on the Project construction corridor to limit the generation of fugitive dust.

4.1.2 Water Resources

Construction will conform to all KDHE construction standards. Runoff will be minimized through the implementation of a Stormwater Pollution Prevention Plan (SWP2) developed in accordance with the Nationwide Storm Water Permit for Construction Activities. Appropriate BMPs, including but not limited to silt fence, would be implemented during Project construction to intercept sediment that may be carried by stormwater runoff. Strict adherence to erosion control and the SWP2 will be maintained by the City of Dodge City and its construction contractors through final site grading and vegetation establishment to avoid degrading water quality adjacent to the Project site. The operation of the Project is also not anticipated to have an adverse effect on the Arkansas River, Ogallala Aquifer, water quality in the area, or existing watershed management plans.

4.1.3 Water Rights

No mitigation measures are proposed or required for water rights.

4.1.4 Wetlands, Other Waters of the U.S., and Aquatic Habitats

All Project impacts associated with construction of the force main water pipeline would be temporary. No ponds, streams or wetlands would be permanently impacted by construction of the Reuse WWTP or force main water pipeline. Construction of the proposed outfall and placement of rip-rap is anticipated to result in a permanent impact that is less than 0.1 acre along the bank of the Arkansas River. A PCN may need to be submitted to the USACE after the final design of the outfall structure and placement of rip-rap along the Arkansas River is determined and if permanent wetland impacts are greater than 0.1 acre in size. It is anticipated that this Project would qualify for authorization under USACE Nationwide Permit 58 for Utility Line Activities for Water and Other Substances. It is also anticipated that compensatory wetland mitigation would not be required for this Project.

4.1.5 Floodplains and Riparian Areas

A construction within a floodplain permit would be obtained from the floodplain administrator prior to the start of construction. No mitigation measures are anticipated, proposed, or required for impacts to floodplains riparian areas, and aquatic habitats.

4.1.6 Vegetation and Habitat

It is anticipated that the temporary and permanent impacts to vegetation communities that would occur in the vicinity of the force main water pipeline and outfall structure along the Arkansas River would be mitigated through restoration and revegetation activities using native vegetation, where applicable.

4.1.7 Wildlife and Fisheries

No mitigation is proposed or needed for large game, wildlife and fisheries.

4.1.8 Threatened and Endangered Species

A State Action Permit application would be submitted to KDWP for the portion of the Project occurring within the state-designated critical habitat for the eastern spotted skunk along the Arkansas River. It is anticipated that the temporary and permanent impacts to riparian vegetation that would occur in the vicinity of the force main water pipeline and outfall structure along the Arkansas River would be mitigated through restoration and revegetation activities along the construction corridor using native vegetation. To avoid impacts to birds protected under the MBTA, any woody vegetation within the construction corridor where it crosses the riparian corridor of the Arkansas River would be removed outside of the migratory bird primary nesting season in Kansas which occurs from April 15 to July 15.

4.1.9 Recreation

No mitigation measures are proposed or required for the Project related to public recreation facilities.

4.1.10 Visual Aesthetics and Noise

No mitigation measures are proposed or required for the Project related to aesthetics, visual resources, or ambient noise.

4.1.11 Prime and Unique Farmland

To prevent the mixing of topsoil with subsoil layers during construction of the force main water pipeline, the topsoil would be stored separately from the subsoil material when excavating the trench to place the force main water pipeline. After placing the force main water pipeline in the trench, the subsoil and then the topsoil will be placed during backfilling of the trench. All areas that are disturbed during construction activities would be restored to preconstruction contours and revegetated.

Compaction and rutting of soils may occur during Project construction. If compaction and rutting of soils occurs, the affected soils would be de-compacted and graded during the restoration process.

During dry weather conditions when the soil is susceptible to wind erosion, preventative measures will be taken. In areas where bare soil is exposed, water or other dust palliatives will be applied to the soil to weigh it down and prevent it being eroded by the wind. In areas where the soil has been stockpiled for later use, the soil will be covered. Measures will be implemented to make sure areas do not get over-watered and eroded from the application of the water.

4.1.12 Cultural Resources and Indian Trust Assets

No mitigation is anticipated. If buried cultural resources are encountered during Project construction, land-disturbing activities in the immediate area will be halted. Cultural resource investigators, the lead federal agency archaeologist, and the SHPO will be notified. Any exposed cultural resources would be evaluated for their significance.

4.1.13 Public Health and Safety

Although it is not anticipated, a traffic control plan would be developed, if necessary, that would be implemented during construction activities and obtain the appropriate road/highway haul permits for heavy or oversized vehicles on public road rights-of-way under the jurisdiction of the KDOT, Ford County, and Dodge City. All Dodge City employees, contractors, and subcontractors will comply with all applicable Federal and State occupational safety and health standards, NESC regulations, and utility design and safety standards. A construction Health and Safety Plan will be developed to address public and worker safety during the construction of the Project. The construction Health and Safety Plan would identify any requirements for construction, as well as requirements for temporary fencing around staging, excavation, and laydown areas during construction. The plan would also include provisions for worker protection as is required under OSHA CFR 1926. During construction, all employees, contractors, and sub-contractors would be required to adhere to OSHA safety procedures, which will be taught in a mandatory training for all construction workers on site. All heavy equipment would be maintained to OSHA safety standards and personal safety equipment would be required for all workers on site. Any accidents or incidents would be reported to the designated safety officer.

4.1.14 Socioeconomics

No mitigation measures are proposed or required for the Project related to socioeconomics.

Chapter 5 - Consultation and Coordination

The following is a list of agencies that were contacted and offered comments on the proposed Project:

- Kansas Biological Survey
- Kansas Department of Agriculture
- Kansas Department of Health and Environment
- Kansas Department of Wildlife and Parks
- Kansas State Historical Preservation Office
- U.S. Army Corp of Engineers
- U.S. Department of Agriculture NRCS
- U.S. Fish and Wildlife Service

Copies of the letters that were sent and the agency responses are included in Appendix B. Each agency received a letter that included the Project description and map of the proposed Project.

The KBS and KDA did not provide a response.

The KDHE indicated that the Project clearance should not be delayed but the KDHE Bureau of Water (BOW) indicated that the wastewater discharged to Arkansas River will likely need to meet end-of-pipe limits, given the lack of any dilution capability from the river. Additionally, the KDHE BOW commented that the new discharge will require an antidegradation report outlining alternatives to discharging into the river and way discharge is the best option and the treatment steps necessary to ensure no deleterious water quality impact accrue to the river.

The KDWP indicated that it is unlikely that large permanent adverse impacts to the eastern spotted skunk state-designated critical habitat will occur, so requirements to provide compensatory mitigation for habitat loss are unlikely. Additionally, KDWP indicated that temporary impacts to state-designated critical habitat may occur and have requested to review construction plans to complete their permitting review.

The SHPO has reviewed the Project information and the Phase II archaeological survey report for the Project and concurs that the Project will have no effect on HRHP eligible historic properties as defined in 36 CRF 800.

The USACE responded that a permit may be required if the proposed Project requires the discharge of dredged or fill material in any waters of the United States.

The USDA, NRCS, indicated that there were no concerns regarding the force main water pipeline but recommended that a Farmland Conversion Impact Rating form be completed for the Reuse WWTP. The total points for the Reuse WWTP from Farmland Conversion Impact Rating form are 41% of the total points possible. The conversion of land for the Reuse WWTP to nonagricultural use would not significantly affect the availability of farmland or farm services in the area and would not be contradictory to the FPPA.

The USFWS agrees that the Project is not anticipated to have adverse effects to protected species.

Letters were also sent to the following Federally recognized Native American Tribes requesting comments regarding the Project.

- Apache Tribe of Oklahoma
- Cheyenne and Arapaho Tribes of Oklahoma
- Comanche Nation of Oklahoma
- Osage Nation
- Wichita and Affiliated Tribes of Oklahoma

Copies of the letters that were sent to the Native American Tribes are also included in Appendix B. None of the Native American Tribes responded to the letters requesting comments.

Chapter 6 – Preparers

The Environmental Assessment for the Project was prepared by Burns & McDonnell under the direction of the City of Dodge City, Kansas. Table 6-1 contains a specific list of individuals who assisted in the preparation of this document.

Table 6-1: List of Preparers

Name	Organization	Experience	Role
Brian Roh	Burns & McDonnell	B.S. Biology M.S. Ecology 29 years' experience	Associate Environmental Specialist and Environmental Project Manager
Lilian Khan	Burns & McDonnell	B.S. Biology, Environmental Science M.S. Environmental Studies 2 years' experience	Assistant Environmental Scientist and NEPA Specialist
Christopher Mallott	Burns & McDonnell	B.S. Biology P.S.M. Environmental Assessment 2 years' experience	Environmental Scientist and NEPA Specialist
Thomas Kimmel	Burns & McDonnell	B.A. Urban Planning M.S. Analytics 3 years' experience	GIS Specialist
Adam Bogusch	Burns & McDonnell	B.S. Civil Engineering, M.S. Environmental Health Engineering 30 years' experience	Associate Civil Engineer and Water Project Manager
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Chapter 8 - Acronyms

Abbreviation	Term/Phrase/Name
AADT	Annual Average Daily Traffic
APE	Area of Potential Affect
ATVs	All-Terrain Vehicles
BGEPA	Bald and Golden Eagle Protection Act
bgs	below ground surface
BMPs	Best Management Practices
BOR	Bureau of Reclamation
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
dBA	A weighted decibel
DWR	Division of Water Resources
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FPPA	Farmland Protection Policy Act
FONSI	Finding of No Significant Impact
GLO	General Land Office

Abbreviation	Term/Phrase/Name
GMD3	Groundwater Management District 3
HAPs	Hazardous Air Pollutants
IPaC	Information for Planning and Consultation
KDA	Kansas Department of Agriculture
KDHE	Kansas Department of Health and Environment
KDOT	Kansas Department of Transportation
KDWP	Kansas Department of Wildlife and Parks
KGS	Kansas Geological Survey
KHRI	Kansas Historic Resources Inventory
km	kilometer
KSHS	Kansas State Historical Society
Ldn	Day Night Average Sound Level
MAR	Managed Aquifer Recharge
MBR	Membrane Bioreactor
MBTA	Migratory Bird Treaty Act
MGD	million gallons per day
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESC	National Electric Safety Code
NHD	National Hydrography Database
NO_2	Nitrogen Dioxide
NO_X	Oxides of Nitrogen
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory

Abbreviation	Term/Phrase/Name
O_3	Ozone
OFR	Office of the Federal Register
ONHPO	Osage nation Historic Preservation Office
OSHA	Occupational Safety and Health Administration
PCN	Pre-Construction Notification
PEM	Palustrine Emergent Wetland
PM	Particulate Matter
PM_{10}	Particulate Matter with a diameter of less than 10 microns
$PM_{2.5}$	Particulate Matter with a diameter of less than 2.5 microns
PSD	Prevention of Significant Deterioration
PVC	Polyvinyl Chloride
Reclamation	Bureau of Reclamation
Reuse WWTP	Reuse Wastewater Treatment Plant
SHPO	State Historic Preservation Office
SO_2	Sulfer Dioxide
SWP2	Stormwater Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
USCB	U.S. Census Bureau
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UV	Ultraviolet
VOCs	Volatile Organic Compounds