

# DRAFT Recommended Projects

2017 *thru* 2021

## City of Lawrence, Kansas

**Department** Utilities  
**Contact** UT Director  
**Type** Improvement  
**Useful Life** 50 years  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1209CIP  
**Project Name** Taste and Odor Improvements

**Department Priority**  
 Unfunded

**Total Project Cost:** \$5,277,060

**Description**  
 Project improvements are based on recommendations in the 2013 Taste & Odor Study and other improvements requested by the City. The improvements for the Clinton Water Treatment Plant include the addition of a rapid mix system, carbon dioxide system, ferric system, and liquid lime system, tube settlers in the primary basins, and painting of the South Train basins and equipment.

**Justification**  
 The project was identified in the 2012 Integrated Water Utility Plan and Capital Improvements Plan, and 2013 Taste and Odor Study. The project addresses the addition of new and optimization of existing water treatment processes that will enhance the removal of taste and odor compounds, microtoxins and viruses at the Clinton Water Treatment Plant.

**Prior**  
 5,277,060

**Total**

**Prior**  
 5,277,060

**Total**

**Budget Impact/Other**

Budget Items	2017	2018	2019	2020	2021	Total
Maintenance	0					0
<b>Total</b>	<b>0</b>					<b>0</b>

# DRAFT Recommended Projects

2017 thru 2021

## City of Lawrence, Kansas

**Department** Utilities  
**Contact** UT Director  
**Type** Improvement  
**Useful Life** 100 years  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1304CIP  
**Project Name** Wakarusa WWTP and Conveyance Corridor

**Department Priority**  
 Unfunded

**Total Project Cost:** \$73,916,272

**Description**

Project UT1304 includes the Wakarusa WWTP, Pump Station 10 in the area of 31st and Louisiana, and required force mains and gravity sewers to convey sewerage to and from this point to the Wakarusa WWTP. The project also includes a lab expansion and new final clarifier equipment at the existing Kansas River WWTP.

The Wakarusa WWTP has been designed as a 2.5 MGD biological nutrient removal (BNR) treatment facility. Pump Station 10 will have increased operational flexibility and will be able to pump a range of flows from 1.0 MGD to 12.5 MGD to the Wakarusa WWTP through the 16" and 24" force mains installed between the two facilities.

**Justification**

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

1. Address current wet weather overloading of major sanitary sewer lines along the 31st Street corridor that serve much of the Wakarusa drainage system west of Iowa and north to 6th Street as shown on the attached service area map.
2. Help reduce and manage wet weather flows at the Kansas River WWTP. Peak flows exceed the 65 million gallon per day (MGD) peak treatment capacity by 20 MGD.
3. Provide 20 percent additional treatment capacity for growth of the community. The current treatment plant is at or near its' rated capacity for treatment of organics.
4. Take the first step as adopted in the City's Integrated Plan, and as required by the latest NPDES permits, to meet new environmental regulations that require reduction of nutrients from treated effluents, specifically nitrogen and phosphorous. The current treatment processes do not reduce nutrients.

Prior	Expenditures	2017	2018	2019	2020	2021	Total
44,616,272	Construction/Maintenance	29,000,000					29,000,000
	Equip/Vehicles/Furnishings	300,000					300,000
<b>Total</b>	<b>Total</b>	<b>29,300,000</b>					<b>29,300,000</b>
Funding Sources		2017	2018	2019	2020	2021	Total
	Utility - Wastewater	29,300,000					29,300,000
	<b>Total</b>	<b>29,300,000</b>					<b>29,300,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life** 100 years  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1307CIP  
**Project Name** Oread Storage Tank & Booster Pump Stn Replacement

**Department Priority**  
 Unfunded

**Total Project Cost:** \$5,081,220

**Description**  
 Replacement of the south 1931, and north 1954 Oread water storage tanks and booster pump station.

**Justification**  
 Project was identified in the 2012 Integrated Water Utility Plan and Capital Improvements Plan. Both tanks are exhibiting severe corrosion, loss of structural members, holes in the exteriors, deteriorated foundations and failing interior and exterior coatings. In addition the tanks do not meet several current safety and American Water Works Association standards. The pump station is in need of replacement due to electrical equipment, valving, maintenance and operational issues.

<b>Prior</b>	<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
851,220	Construction/Maintenance	4,230,000					4,230,000
<b>Total</b>	<b>Total</b>	4,230,000					4,230,000

<b>Prior</b>	<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
851,220	Utility - Water	4,230,000					4,230,000
<b>Total</b>	<b>Total</b>	4,230,000					4,230,000

**Budget Impact/Other**

# DRAFT Recommended Projects

2017 *thru* 2021

## City of Lawrence, Kansas

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life** 100 years  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1504CIP  
**Project Name** 23rd St Waterline Replacement, Ousdahl to Alabama

**Department Priority**  
 Unfunded

**Total Project Cost:** \$613,300

**Description**  
 The 23rd Street, Ousdahl Road to Alabama Street, Waterline Replacement Project includes the replacement of approximately 2,650 linear feet of 8", 1956 cast iron main with 8" PVC waterlines. The project also includes valves, fittings, fire hydrants and other miscellaneous appurtenances for the waterline located along 23rd Street from Ousdahl Road to Alabama Street.

**Justification**  
 A program for the replacement and rehabilitation of deteriorated and undersized water distribution piping was identified in the 2012 Integrated Water Utility Plan and Capital Improvements Plan. Department of Utilities staff continuously evaluates the condition of the water distribution system based on main breaks, pipe material and age, capacity and fire protection needs. Based on these criteria, along with the criticality of the watermain within the system and the number of services affected, watermains are targeted for replacement.  
 Continued progress in water main replacement further increases the reliability of the City's water transmission system.

Prior	Expenditures	2017	2018	2019	2020	2021	Total
73,300	Construction/Maintenance		540,000				540,000
<b>Total</b>	<b>Total</b>		540,000				540,000

Prior	Funding Sources	2017	2018	2019	2020	2021	Total
73,300	Utility - Water		540,000				540,000
<b>Total</b>	<b>Total</b>		540,000				540,000

**Budget Impact/Other**

# DRAFT Recommended Projects

2017 *thru* 2021

## City of Lawrence, Kansas

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life** 100 years  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1505CIP  
**Project Name** 23rd and Ousdahl Waterline Replacement

**Department Priority**  
 Unfunded

**Total Project Cost:** \$210,000

**Description**  
 The 23rd Street and Ousdahl Road Waterline Replacement Project includes the replacement of approximately 900 linear feet of 8", 1959 cast iron main with 8" PVC waterlines. The project also includes valves, fittings, fire hydrants and other miscellaneous appurtenances for the waterline located along Ousdahl Road from 23rd Street to 24th Street.

**Justification**  
 A program for the replacement and rehabilitation of deteriorated and undersized water distribution piping was identified in the 2012 Integrated Water Utility Plan and Capital Improvements Plan. Department of Utilities staff continuously evaluates the condition of the water distribution system based on main breaks, pipe material and age, capacity and fire protection needs. Based on these criteria, along with the criticality of the watermain within the system and the number of services affected, watermains are targeted for replacement.  
 Continued progress in water main replacement further increases the reliability of the City's water transmission system.

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design			30,000			30,000
Construction/Maintenance			180,000			180,000
<b>Total</b>			<b>210,000</b>			<b>210,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water			210,000			210,000
<b>Total</b>			<b>210,000</b>			<b>210,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life** 100 years  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1518CIP  
**Project Name** 19th Street Utilities Relocation

**Department Priority**  
 Unfunded

**Total Project Cost:** \$1,531,916

**Description**

This project will replace waterline on 19th Street from Iowa Street to Alabama Street. The existing waterline is mostly 6-inch and 8-inch cast iron or transite pipe from the late-1940's to mid-1950's that will be replaced with new 8-inch and 12-inch PVC waterlines.

The proposed improvements to 19th Street will also require replacement and/or relocation of portions of the existing 10-inch and 12-inch clay sanitary sewer from Naismith Drive to Stewart Avenue.

**Justification**

The 19th Street Utilities Relocation project will replace waterline on 19th Street from Iowa Street to Alabama Street. The existing waterline is mostly 6-inch and 8-inch cast iron or transite pipe from the late-1940's to mid-1950's that will be replaced with new 8-inch and 12-inch PVC waterlines. Proposed improvements to 19th Street will also require relocation of the existing 10-inch and 12-inch clay sanitary sewer from Naismith Drive to Stewart Avenue.

<b>Prior</b>	<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
110,996	Construction/Maintenance	1,420,920					1,420,920
<b>Total</b>	<b>Total</b>	1,420,920					1,420,920

<b>Prior</b>	<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
110,996	Utility - Water	1,420,920					1,420,920
<b>Total</b>	<b>Total</b>	1,420,920					1,420,920

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1793CIP  
**Project Name** 2017 Sewer Main Relocations for Road Projects

**Department Priority**  
 Unfunded

**Total Project Cost:** \$351,000

**Description**  
 2017 Sewer Main Relocations for Road Projects

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design	70,200					70,200
Construction/Maintenance	280,800					280,800
<b>Total</b>	<b>351,000</b>					<b>351,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater	351,000					351,000
<b>Total</b>	<b>351,000</b>					<b>351,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1795CIP  
**Project Name** 2017 Rapid I/I Reduction Program

**Department Priority**  
 Unfunded

**Total Project Cost:** \$2,000,000

**Description**  
 2017 Rapid I/I Reduction Program

**Justification**  
 The Integrated 2012 Wastewater Utilities Plan and Capital Improvements Program recommended the implementation of a Rapid Inflow and Infiltration (I/I) Reduction Program. The objective of the Rapid I/I Reduction Program is an overall 35% reduction of I/I within the program area. By reducing I/I by 35%, we decrease the need for construction projects that add system capacity within the sewer system and the need for wet weather treatment capacity expansion at the Kaw WWTP.

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design	400,000					400,000
Construction/Maintenance	1,600,000					1,600,000
<b>Total</b>	<b>2,000,000</b>					<b>2,000,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater	2,000,000					2,000,000
<b>Total</b>	<b>2,000,000</b>					<b>2,000,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Improvement  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1796CIP  
**Project Name** Collection System Field Operations Building

**Department Priority**  
 Unfunded

**Total Project Cost:** \$7,000,000

**Description**  
 Collection System Field Operations Building

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design	70,000	1,330,000				1,400,000
Construction/Maintenance	280,000	5,320,000				5,600,000
<b>Total</b>	<b>350,000</b>	<b>6,650,000</b>				<b>7,000,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater	350,000	6,650,000				7,000,000
<b>Total</b>	<b>350,000</b>	<b>6,650,000</b>				<b>7,000,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1797CIP  
**Project Name** 2017 Clinton WTP Improvement Program

**Department Priority**  
 Unfunded

**Total Project Cost:** \$324,500

**Description**  
 2017 Clinton Water TP Annual Improvement Program

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design	64,900					64,900
Construction/Maintenance	259,600					259,600
<b>Total</b>	<b>324,500</b>					<b>324,500</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water	324,500					324,500
<b>Total</b>	<b>324,500</b>					<b>324,500</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Improvement  
**Useful Life**  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1798CIP  
**Project Name** 2017 Kaw WTP Improvement Program

**Department Priority**  
 Unfunded

**Total Project Cost:** \$324,500

**Description**  
 2017 Kaw Water Treatment Plant Annual Improvement Program

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design	64,900					64,900
Construction/Maintenance	259,600					259,600
<b>Total</b>	<b>324,500</b>					<b>324,500</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water	324,500					324,500
<b>Total</b>	<b>324,500</b>					<b>324,500</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life** 50 years  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1799CIP  
**Project Name** 2017 Watermain Replacement/Relocation Program

**Department Priority**  
 Unfunded

**Total Project Cost:** \$3,935,700

**Description**  
 2018 Watermain Replacement/Relocation Program, to include watermain assessment and maintenance activities through contractor arrangements and in-house at to-be-identified locations.

**Justification**  
 A program for the replacement and rehabilitation of deteriorated and undersized water distribution piping was identified in the 2012 Integrated Water Utility Plan and Capital Improvements Plan. Department of Utilities staff continuously evaluates the condition of the water distribution system based on main breaks, pipe material and age, capacity and fire protection needs. Based on these criteria, along with the criticality of the watermain within the system and the number of services affected, watermains are targeted for replacement.  
 Continued progress in water main replacement further increases the reliability of the City's water transmission system.

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design	787,140					787,140
Construction/Maintenance	3,148,560					3,148,560
<b>Total</b>	<b>3,935,700</b>					<b>3,935,700</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water	3,935,700					3,935,700
<b>Total</b>	<b>3,935,700</b>					<b>3,935,700</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1886CIP  
**Project Name** 2018 Sewer Main Relocations for Road Projects

**Department Priority**  
 Unfunded

**Total Project Cost:** \$390,000

**Description**  
 2018 Sewer Main Relocations for Road Projects

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design		78,000				78,000
Construction/Maintenance		312,000				312,000
<b>Total</b>		<b>390,000</b>				<b>390,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater		390,000				390,000
<b>Total</b>		<b>390,000</b>				<b>390,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1887CIP  
**Project Name** 2018 WW Failed Infrastructure Contingency

**Department Priority**  
 Unfunded

**Total Project Cost:** \$390,000

**Description**  
 2018 WW Failed Infrastructure Contingency

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design		78,000				78,000
Construction/Maintenance		312,000				312,000
<b>Total</b>		<b>390,000</b>				<b>390,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater		390,000				390,000
<b>Total</b>		<b>390,000</b>				<b>390,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

<b>Project #</b>	<b>UT1888CIP</b>
<b>Project Name</b>	<b>2018 Pump Station Annual Improvements</b>

Department Priority  
 Unfunded

**Total Project Cost: \$140,000**

<b>Description</b>
2018 Pump Station Annual Improvements

<b>Justification</b>

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design		28,000				28,000
Construction/Maintenance		112,000				112,000
<b>Total</b>		<b>140,000</b>				<b>140,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater		140,000				140,000
<b>Total</b>		<b>140,000</b>				<b>140,000</b>

<b>Budget Impact/Other</b>

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1889CIP  
**Project Name** 2018 Kansas River WWTP Annual Improvements

**Department Priority**  
 Unfunded

**Total Project Cost:** \$390,000

**Description**  
 2018 Kansas River WWTP Annual Improvements

**Justification**  
 System integrity and operational functionality necessitate recurring evaluation and repair of plant structures and appurtenances to address structural, electrical and process deficiencies.

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design		78,000				78,000
Construction/Maintenance		312,000				312,000
<b>Total</b>		<b>390,000</b>				<b>390,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater		390,000				390,000
<b>Total</b>		<b>390,000</b>				<b>390,000</b>

**Budget Impact/Other**

# DRAFT Recommended Projects

2017 *thru* 2021

## City of Lawrence, Kansas

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1890CIP  
**Project Name** 2018 Clay Pipe/Manhole Rehabilitation

**Department Priority**  
 Unfunded

**Total Project Cost:** \$1,130,000

**Description**  
 2018 Clay Pipe/Manhole Rehabilitation

**Justification**  
 Clay Pipe/Manhold Rabilitation is part of the Utilities Department's efforts at I/I reduction is to repair/reconstruct existing sewer lines that are a source of I/I. The Cured-In-Place-Pipe (CIPP) method involves lining the inside of an older deteriorated sanitary sewer main without excavation. Therefore, there is very little disruption above ground. CIPP is a cost effective method of sewer main rehabilitation when compared with other more invasive methods.  
 The Utilities Department has a multi-year plan to rehabilitate city owned infrastructure using this trenchless method. Line segments are selected for rehabilitation based on several factors. These factors include:  
 •Known defects based on maintenance and TV inspection records  
 •Pipe Depth, Age and Material  
 •Presence of unused taps or connections that may contribute inflow/infiltration  
 •Above ground conditions

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design		226,000				226,000
Construction/Maintenance		904,000				904,000
<b>Total</b>		<b>1,130,000</b>				<b>1,130,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater		1,130,000				1,130,000
<b>Total</b>		<b>1,130,000</b>				<b>1,130,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1891CIP  
**Project Name** 2018 Rapid I/I Reduction Program

**Department Priority**  
 Unfunded

**Total Project Cost:** \$2,830,000

**Description**  
 2018 Rapid I/I Reduction Program

**Justification**  
 The Integrated 2012 Wastewater Utilities Plan and Capital Improvements Program recommended the implementation of a Rapid Inflow and Infiltration (I/I) Reduction Program. The objective of the Rapid I/I Reduction Program is an overall 35% reduction of I/I within the program area. By reducing I/I by 35%, we decrease the need for construction projects that add system capacity within the sewer system and the need for wet weather treatment capacity expansion at the Kaw WWTP.

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design		566,000				566,000
Construction/Maintenance		2,264,000				2,264,000
<b>Total</b>		<b>2,830,000</b>				<b>2,830,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater		2,830,000				2,830,000
<b>Total</b>		<b>2,830,000</b>				<b>2,830,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1892CIP  
**Project Name** PS #8 Elimination - 21" Gravity Sewer

**Department Priority**  
 Unfunded

**Total Project Cost:** \$4,610,000

**Description**  
 PS #8 Elimination - 21" Gravity Sewer

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design		90,000	832,000			922,000
Construction/Maintenance		360,000	3,328,000			3,688,000
<b>Total</b>		<b>450,000</b>	<b>4,160,000</b>			<b>4,610,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater		450,000	4,160,000			4,610,000
<b>Total</b>		<b>450,000</b>	<b>4,160,000</b>			<b>4,610,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

City of Lawrence, Kansas

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1893CIP  
**Project Name** 2018 Clinton WTP Improvement Program

**Department Priority**  
 Unfunded

**Total Project Cost:** \$450,000

**Description**  
 2018 Clinton Water Treatment Plant Annual Improvement Program

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Construction/Maintenance					450,000	450,000
<b>Total</b>					450,000	450,000

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water					450,000	450,000
<b>Total</b>					450,000	450,000

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1894CIP  
**Project Name** 2018 Kaw WTP Improvement Program

**Department Priority**  
 Unfunded

**Total Project Cost:** \$400,000

**Description**  
 2018 Kaw Water Treatment Plant Annual Improvement Program

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design		80,000				80,000
Construction/Maintenance		320,000				320,000
<b>Total</b>		<b>400,000</b>				<b>400,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water		400,000				400,000
<b>Total</b>		<b>400,000</b>				<b>400,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**Department** Utilities

**City of Lawrence, Kansas**

**Contact** UT Director

**Project #** UT1895CIP  
**Project Name** 2018 Watermain Replacement/Relocation Program

**Type** Maintenance

**Useful Life** 50 years

**Category** Water

**Priority** 1 Critical

**Status** Active

**Department Priority**

Unfunded

**Total Project Cost:** \$4,190,000

**Description**  
 2018 Watermain Replacement/Relocation Program, to include watermain assessment and maintenance activities through contractor arrangements and in-house at to-be-identified locations.

**Justification**  
 A program for the replacement and rehabilitation of deteriorated and undersized water distribution piping was identified in the 2012 Integrated Water Utility Plan and Capital Improvements Plan. Department of Utilities staff continuously evaluates the condition of the water distribution system based on main breaks, pipe material and age, capacity and fire protection needs. Based on these criteria, along with the criticality of the watermain within the system and the number of services affected, watermains are targeted for replacement.  
 Continued progress in water main replacement further increases the reliability of the City's water transmission system.

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design		838,000				838,000
Construction/Maintenance		3,352,000				3,352,000
<b>Total</b>		<b>4,190,000</b>				<b>4,190,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water		4,190,000				4,190,000
<b>Total</b>		<b>4,190,000</b>				<b>4,190,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1896CIP  
**Project Name** Vermont Bridge Concrete Main Assessment

**Department Priority**  
 Unfunded

**Total Project Cost:** \$400,000

**Description**  
 Vermont Bridge Concrete Main Assessment

**Justification**  
 A program for the replacement and rehabilitation of deteriorated and undersized water distribution piping was identified in the 2012 Integrated Water Utility Plan and Capital Improvements Plan. Department of Utilities staff continuously evaluates the condition of the water distribution system based on main breaks, pipe material and age, capacity and fire protection needs. Based on these criteria, along with the criticality of the watermain within the system and the number of services affected, watermains are targeted for replacement.  
 Continued progress in water main replacement further increases the reliability of the City's water transmission system.

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design		400,000				400,000
<b>Total</b>		400,000				400,000

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water		400,000				400,000
<b>Total</b>		400,000				400,000

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life** 50 years  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1897CIP  
**Project Name** 2018 Kaw Water TP Infrastructure Rehab

**Department Priority**  
 Unfunded

**Total Project Cost:** \$1,000,000

**Description**  
 Kaw Water Treatment Plant infrastructure assessment and rehabilitation

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design		200,000				200,000
Construction/Maintenance		800,000				800,000
<b>Total</b>		<b>1,000,000</b>				<b>1,000,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water		1,000,000				1,000,000
<b>Total</b>		<b>1,000,000</b>				<b>1,000,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Improvement  
**Useful Life** 50 years  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1898CIP  
**Project Name** Automated Meter Reading Installation

**Department Priority**  
 Unfunded

**Total Project Cost:** \$16,070,000

**Description**  
 Automated Meter Reading Installation, to include equipment, software and infrastructure improvements.

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design		1,576,000	1,638,000			3,214,000
Construction/Maintenance		6,304,000	6,552,000			12,856,000
<b>Total</b>		<b>7,880,000</b>	<b>8,190,000</b>			<b>16,070,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water		7,880,000	8,190,000			16,070,000
<b>Total</b>		<b>7,880,000</b>	<b>8,190,000</b>			<b>16,070,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life** 50 years  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1899CIP  
**Project Name** Stratford Tower Replacement

**Department Priority**  
 Unfunded

**Total Project Cost:** \$3,650,000

**Description**  
 Replacement of Stratford Tower.

**Justification**  
 Tower in need of replacement to meet applicable safety and American Water Works Association standards and ensure functional integrity.

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design		360,000				360,000
Construction/Maintenance			3,290,000			3,290,000
<b>Total</b>		<b>360,000</b>	<b>3,290,000</b>			<b>3,650,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water		360,000	3,290,000			3,650,000
<b>Total</b>		<b>360,000</b>	<b>3,290,000</b>			<b>3,650,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1989CIP  
**Project Name** 2019 Sewer Main Relocations for Road Projects

**Department Priority**  
 Unfunded

**Total Project Cost:** \$400,000

**Description**  
 2019 Sewer Main Relocations for Road Projects

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design			80,000			80,000
Construction/Maintenance			320,000			320,000
<b>Total</b>			<b>400,000</b>			<b>400,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater			400,000			400,000
<b>Total</b>			<b>400,000</b>			<b>400,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1990CIP  
**Project Name** 2019 WW Failed Infrastructure Contingency

**Department Priority**  
 Unfunded

**Total Project Cost:** \$400,000

**Description**  
 2019 WW Failed Infrastructure Contingency

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design			80,000			80,000
Construction/Maintenance			320,000			320,000
<b>Total</b>			<b>400,000</b>			<b>400,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater			400,000			400,000
<b>Total</b>			<b>400,000</b>			<b>400,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1991CIP  
**Project Name** 2019 Pump Station Annual Improvements

**Department Priority**  
 Unfunded

**Total Project Cost:** \$150,000

**Description**  
 2019 Pump Station Annual Improvements

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design			30,000			30,000
Construction/Maintenance			120,000			120,000
<b>Total</b>			<b>150,000</b>			<b>150,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater			150,000			150,000
<b>Total</b>			<b>150,000</b>			<b>150,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1992CIP  
**Project Name** 2019 Kansas River WWTP Annual Improvements

**Department Priority**  
 Unfunded

**Total Project Cost:** \$400,000

**Description**  
 2019 Kansas River WWTP Annual Improvements

**Justification**  
 System integrity and operational functionality necessitate recurring evaluation and repair of plant structures and appurtenances to address structural, electrical and process deficiencies.

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design			80,000			80,000
Construction/Maintenance			320,000			320,000
<b>Total</b>			<b>400,000</b>			<b>400,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater			400,000			400,000
<b>Total</b>			<b>400,000</b>			<b>400,000</b>

**Budget Impact/Other**

# DRAFT Recommended Projects

2017 *thru* 2021

## City of Lawrence, Kansas

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1993CIP  
**Project Name** 2019 Clay Pipe/Manhole Rehabilitation

**Department Priority**  
 Unfunded

**Total Project Cost:** \$3,510,000

**Description**  
 2019 Clay Pipe/Manhole Rehabilitation

**Justification**  
 Clay Pipe/Manhold Rabilitation is part of the Utilities Department's efforts at I/I reduction is to repair/reconstruct existing sewer lines that are a source of I/I. The Cured-In-Place-Pipe (CIPP) method involves lining the inside of an older deteriorated sanitary sewer main without excavation. Therefore, there is very little disruption above ground. CIPP is a cost effective method of sewer main rehabilitation when compared with other more invasive methods.  
 The Utilities Department has a multi-year plan to rehabilitate city owned infrastructure using this trenchless method. Line segments are selected for rehabilitation based on several factors. These factors include:  
 •Known defects based on maintenance and TV inspection records  
 •Pipe Depth, Age and Material  
 •Presence of unused taps or connections that may contribute inflow/infiltration  
 •Above ground conditions

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design			702,000			702,000
Construction/Maintenance			2,808,000			2,808,000
<b>Total</b>			<b>3,510,000</b>			<b>3,510,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater			3,510,000			3,510,000
<b>Total</b>			<b>3,510,000</b>			<b>3,510,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1994CIP  
**Project Name** 2019 Rapid I/I Reduction Program

**Department Priority**  
 Unfunded

**Total Project Cost:** \$2,950,000

**Description**  
 2019 Rapid I/I Reduction Program

**Justification**  
 The Integrated 2012 Wastewater Utilities Plan and Capital Improvements Program recommended the implementation of a Rapid Inflow and Infiltration (I/I) Reduction Program. The objective of the Rapid I/I Reduction Program is an overall 35% reduction of I/I within the program area. By reducing I/I by 35%, we decrease the need for construction projects that add system capacity within the sewer system and the need for wet weather treatment capacity expansion at the Kaw WWTP.

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design			590,000			590,000
Construction/Maintenance			2,360,000			2,360,000
<b>Total</b>			<b>2,950,000</b>			<b>2,950,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater			2,950,000			2,950,000
<b>Total</b>			<b>2,950,000</b>			<b>2,950,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1995CIP  
**Project Name** Kansas River WWTP Nutrient Removal Pilot

**Department Priority**  
 Unfunded

**Total Project Cost:** \$1,200,000

**Description**  
 Kansas River WWTP Nutrient Removal Pilot

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design			118,000	122,000		240,000
Construction/Maintenance			472,000	488,000		960,000
<b>Total</b>			<b>590,000</b>	<b>610,000</b>		<b>1,200,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater			590,000	610,000		1,200,000
<b>Total</b>			<b>590,000</b>	<b>610,000</b>		<b>1,200,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1996CIP  
**Project Name** Pump Station 25 Expansion to 4 MG

**Department Priority**  
 Unfunded

**Total Project Cost:** \$200,000

**Description**  
 Pump Station 25 Expansion to 4 MG, add third pump

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design			40,000			40,000
Construction/Maintenance			160,000			160,000
<b>Total</b>			<b>200,000</b>			<b>200,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater			200,000			200,000
<b>Total</b>			<b>200,000</b>			<b>200,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1997CIP  
**Project Name** 2019 Clinton WTP Improvement Program

**Department Priority**  
 Unfunded

**Total Project Cost:** \$410,000

**Description**  
 2019 Clinton Water Treatment Plant Annual Improvement Program

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design			82,000			82,000
Construction/Maintenance			328,000			328,000
<b>Total</b>			<b>410,000</b>			<b>410,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water			410,000			410,000
<b>Total</b>			<b>410,000</b>			<b>410,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1998CIP  
**Project Name** 2019 Kaw WTP Improvement Program

**Department Priority**  
 Unfunded

**Total Project Cost:** \$410,000

**Description**  
 2019 Kaw Water Treatment Plant Annual Improvement Program

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design			82,000			82,000
Construction/Maintenance			328,000			328,000
<b>Total</b>			<b>410,000</b>			<b>410,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water			410,000			410,000
<b>Total</b>			<b>410,000</b>			<b>410,000</b>

**Budget Impact/Other**

# DRAFT Recommended Projects

2017 *thru* 2021

## City of Lawrence, Kansas

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life** 50 years  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT1999CIP  
**Project Name** 2019 Watermain Replacement/Relocation Program

**Department Priority**  
 Unfunded

**Total Project Cost:** \$4,360,000

**Description**  
 2019 Watermain Replacement/Relocation Program, to include watermain assessment and watermain maintenance activities through contractor arrangements and in-house at to-be-identified locations.

**Justification**  
 A program for the replacement and rehabilitation of deteriorated and undersized water distribution piping was identified in the 2012 Integrated Water Utility Plan and Capital Improvements Plan. Department of Utilities staff continuously evaluates the condition of the water distribution system based on main breaks, pipe material and age, capacity and fire protection needs. Based on these criteria, along with the criticality of the watermain within the system and the number of services affected, watermains are targeted for replacement.  
 Continued progress in water main replacement further increases the reliability of the City's water transmission system.

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design			872,000			872,000
Construction/Maintenance			3,488,000			3,488,000
<b>Total</b>			<b>4,360,000</b>			<b>4,360,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water			4,360,000			4,360,000
<b>Total</b>			<b>4,360,000</b>			<b>4,360,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2084CIP  
**Project Name** 2020 Sewer Main Relocations for Road Projects

**Department Priority**  
 Unfunded

**Total Project Cost:** \$420,000

**Description**  
 2020 Sewer Main Relocations for Road Projects

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design				84,000		84,000
Construction/Maintenance				336,000		336,000
<b>Total</b>				<b>420,000</b>		<b>420,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater				420,000		420,000
<b>Total</b>				<b>420,000</b>		<b>420,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2085CIP  
**Project Name** 2020 WW Failed Infrastructure Contingency

**Department Priority**  
 Unfunded

**Total Project Cost:** \$420,000

**Description**  
 2020 WW Failed Infrastructure Contingency

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design				84,000		84,000
Construction/Maintenance				336,000		336,000
<b>Total</b>				<b>420,000</b>		<b>420,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater				420,000		420,000
<b>Total</b>				<b>420,000</b>		<b>420,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2086CIP  
**Project Name** 2020 Pump Station Annual Improvements

**Department Priority**  
 Unfunded

**Total Project Cost:** \$150,000

**Description**  
 2020 Pump Station Annual Improvements

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design				30,000		30,000
Construction/Maintenance				120,000		120,000
<b>Total</b>				<b>150,000</b>		<b>150,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater				150,000		150,000
<b>Total</b>				<b>150,000</b>		<b>150,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2087CIP  
**Project Name** 2020 Kansas River WWTP Annual Improvements

**Department Priority**  
 Unfunded

**Total Project Cost:** \$420,000

**Description**  
 2020 Kansas River WWTP Annual Improvements

**Justification**  
 System integrity and operational functionality necessitate recurring evaluation and repair of plant structures and appurtenances to address structural, electrical and process deficiencies.

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design				84,000		84,000
Construction/Maintenance				336,000		336,000
<b>Total</b>				<b>420,000</b>		<b>420,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater				420,000		420,000
<b>Total</b>				<b>420,000</b>		<b>420,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2088CIP  
**Project Name** 2020 Clay Pipe/Manhole Rehabilitation

**Department Priority**  
 Unfunded

**Total Project Cost:** \$1,220,000

**Description**  
 2020 Clay Pipe/Manhole Rehabilitation

**Justification**  
 Clay Pipe/Manhold Rabilitation is part of the Utilities Department’s efforts at I/I reduction is to repair/reconstruct existing sewer lines that are a source of I/I. The Cured-In-Place-Pipe (CIPP) method involves lining the inside of an older deteriorated sanitary sewer main without excavation. Therefore, there is very little disruption above ground. CIPP is a cost effective method of sewer main rehabilitation when compared with other more invasive methods.  
 The Utilities Department has a multi-year plan to rehabilitate city owned infrastructure using this trenchless method. Line segments are selected for rehabilitation based on several factors. These factors include:  
 •Known defects based on maintenance and TV inspection records  
 •Pipe Depth, Age and Material  
 •Presence of unused taps or connections that may contribute inflow/infiltration  
 •Above ground conditions

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design				244,000		244,000
Construction/Maintenance				976,000		976,000
<b>Total</b>				<b>1,220,000</b>		<b>1,220,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater				1,220,000		1,220,000
<b>Total</b>				<b>1,220,000</b>		<b>1,220,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2089CIP  
**Project Name** 2020 Rapid I/I Reduction Program

**Department Priority**  
 Unfunded

**Total Project Cost:** \$3,060,000

**Description**  
 2020 Rapid I/I Reduction Program

**Justification**  
 The Integrated 2012 Wastewater Utilities Plan and Capital Improvements Program recommended the implementation of a Rapid Inflow and Infiltration (I/I) Reduction Program. The objective of the Rapid I/I Reduction Program is an overall 35% reduction of I/I within the program area. By reducing I/I by 35%, we decrease the need for construction projects that add system capacity within the sewer system and the need for wet weather treatment capacity expansion at the Kaw WWTP.

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design				612,000		612,000
Construction/Maintenance				2,448,000		2,448,000
<b>Total</b>				<b>3,060,000</b>		<b>3,060,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater				3,060,000		3,060,000
<b>Total</b>				<b>3,060,000</b>		<b>3,060,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2090CIP  
**Project Name** Pump Station 16 Upstream Interceptor Rehab

**Department Priority**  
 Unfunded

**Total Project Cost:** \$1,270,000

**Description**  
 Pump Station 16 Upstream Interceptor Rehabilitation

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design				254,000		254,000
Construction/Maintenance				1,016,000		1,016,000
<b>Total</b>				<b>1,270,000</b>		<b>1,270,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater				1,270,000		1,270,000
<b>Total</b>				<b>1,270,000</b>		<b>1,270,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2091CIP  
**Project Name** Pump Station 23 Submersible

**Department Priority**  
 Unfunded

**Total Project Cost:** \$420,000

**Description**  
 Pump Station 23 Submersible

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design				84,000		84,000
Construction/Maintenance				336,000		336,000
<b>Total</b>				<b>420,000</b>		<b>420,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater				420,000		420,000
<b>Total</b>				<b>420,000</b>		<b>420,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2092CIP  
**Project Name** Pump Station 9 Expansion to 14 MG

**Department Priority**  
 Unfunded

**Total Project Cost:** \$3,160,000

**Description**  
 Pump Station 9 Expansion to 14 MG

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design				632,000		632,000
Construction/Maintenance				2,528,000		2,528,000
<b>Total</b>				<b>3,160,000</b>		<b>3,160,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater				3,160,000		3,160,000
<b>Total</b>				<b>3,160,000</b>		<b>3,160,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2093CIP  
**Project Name** 2020 Clinton WTP Improvement Program

**Department Priority**  
 Unfunded

**Total Project Cost:** \$430,000

**Description**  
 2020 Clinton Water Treatment Plant Annual Improvement Program

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design				86,000		86,000
Construction/Maintenance				344,000		344,000
<b>Total</b>				<b>430,000</b>		<b>430,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water				430,000		430,000
<b>Total</b>				<b>430,000</b>		<b>430,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2094CIP  
**Project Name** Clinton WTP Plant Piping

**Department Priority**  
 Unfunded

**Total Project Cost:** \$3,650,000

**Description**  
 Clinton Water Treatment Plant Piping

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design				730,000		730,000
Construction/Maintenance				2,920,000		2,920,000
<b>Total</b>				<b>3,650,000</b>		<b>3,650,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water				3,650,000		3,650,000
<b>Total</b>				<b>3,650,000</b>		<b>3,650,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2095CIP  
**Project Name** 2020 Kaw WTP Improvement Program

**Department Priority**  
 Unfunded

**Total Project Cost:** \$430,000

**Description**  
 2020 Kaw Water Treatment Plant Annual Improvement Program

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design				86,000		86,000
Construction/Maintenance				344,000		344,000
<b>Total</b>				<b>430,000</b>		<b>430,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water				430,000		430,000
<b>Total</b>				<b>430,000</b>		<b>430,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life** 50 years  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2096CIP  
**Project Name** 2020 Kaw WTP Infrastructure Rehab

**Department Priority**  
 Unfunded

**Total Project Cost:** \$4,160,000

**Description**  
 Kaw Water Treatment Plant infrastructure assessment and rehabilitation

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design				832,000		832,000
Construction/Maintenance				3,328,000		3,328,000
<b>Total</b>				<b>4,160,000</b>		<b>4,160,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water				4,160,000		4,160,000
<b>Total</b>				<b>4,160,000</b>		<b>4,160,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life** 50 years  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**City of Lawrence, Kansas**

**Project #** UT2097CIP  
**Project Name** 2020 Watermain Replacement/Relocation Program

**Department Priority**  
 Unfunded

**Total Project Cost:** \$4,540,000

**Description**  
 2020 Watermain Replacement/Relocation Program, to include watermain assessment and maintenance activities through contractor arrangements and in-house at to-be-identified locations.

**Justification**  
 A program for the replacement and rehabilitation of deteriorated and undersized water distribution piping was identified in the 2012 Integrated Water Utility Plan and Capital Improvements Plan. Department of Utilities staff continuously evaluates the condition of the water distribution system based on main breaks, pipe material and age, capacity and fire protection needs. Based on these criteria, along with the criticality of the watermain within the system and the number of services affected, watermains are targeted for replacement.  
 Continued progress in water main replacement further increases the reliability of the City's water transmission system.

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design				908,000		908,000
Construction/Maintenance				3,632,000		3,632,000
<b>Total</b>				<b>4,540,000</b>		<b>4,540,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water				4,540,000		4,540,000
<b>Total</b>				<b>4,540,000</b>		<b>4,540,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life** 50 years  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2098CIP  
**Project Name** Kanwaka Pressure Zone

**Department Priority**  
 Unfunded

**Total Project Cost:** \$8,790,000

**Description**  
 Kanawaka Pressure Zone

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design				850,000		850,000
Construction/Maintenance					7,940,000	7,940,000
<b>Total</b>				850,000	7,940,000	8,790,000

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water				850,000	7,940,000	8,790,000
<b>Total</b>				850,000	7,940,000	8,790,000

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life** 50 years  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2099CIP  
**Project Name** Clinton Storage Tanks Maintenance/ Coatings

**Department Priority**  
 Unfunded

**Total Project Cost:** \$2,440,000

**Description**  
 Maintenance/coatings for Clinton Reservoir Water Treatment Plant storage tanks.

**Justification**  
 Recurring maintenance and coatings maintain functionality and system integrity and extend the life of mechanical equipment and other facilities. Protective coatings provide ongoing corrosion protection. Incorporated in this work is the coating of other appurtenances and the appropriate preparatory work to get the surfaces primed for coating.

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design				488,000		488,000
Construction/Maintenance				1,952,000		1,952,000
<b>Total</b>				<b>2,440,000</b>		<b>2,440,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water				2,440,000		2,440,000
<b>Total</b>				<b>2,440,000</b>		<b>2,440,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2189CIP  
**Project Name** 2021 Sewer Main Relocations for Road Projects

**Department Priority**  
 Unfunded

**Total Project Cost:** \$440,000

**Description**  
 2021 Sewer Main Relocations for Road Projects

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design					88,000	88,000
Construction/Maintenance					352,000	352,000
<b>Total</b>					<b>440,000</b>	<b>440,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater					440,000	440,000
<b>Total</b>					<b>440,000</b>	<b>440,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2190CIP  
**Project Name** 2021 WW Failed Infrastructure Contingency

**Department Priority**  
 Unfunded

**Total Project Cost:** \$440,000

**Description**  
 2021 WW Failed Infrastructure Contingency

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design					88,000	88,000
Construction/Maintenance					352,000	352,000
<b>Total</b>					<b>440,000</b>	<b>440,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater					440,000	440,000
<b>Total</b>					<b>440,000</b>	<b>440,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2191CIP  
**Project Name** 2021 Pump Station Annual Improvements

**Department Priority**  
 Unfunded

**Total Project Cost:** \$160,000

**Description**  
 2021 Pump Station Annual Improvements

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design					32,000	32,000
Construction/Maintenance					128,000	128,000
<b>Total</b>					<b>160,000</b>	<b>160,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater					160,000	160,000
<b>Total</b>					<b>160,000</b>	<b>160,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2192CIP  
**Project Name** 2021 WWTP Annual Improvements (2 PLANTS)

**Department Priority**  
 Unfunded

**Total Project Cost:** \$870,000

**Description**  
 2021 WWTP Annual Improvements (2 PLANTS)

**Justification**  
 System integrity and operational functionality necessitate recurring evaluation and repair of plant structures and appurtenances to address structural, electrical and process deficiencies.

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design					174,000	174,000
Construction/Maintenance					696,000	696,000
<b>Total</b>					870,000	870,000

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater					870,000	870,000
<b>Total</b>					870,000	870,000

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2193CIP  
**Project Name** 2021 Clay Pipe/Manhole Rehabilitation

**Department Priority**  
 Unfunded

**Total Project Cost:** \$5,070,000

**Description**  
 2021 Clay Pipe/Manhole Rehabilitation

**Justification**  
 Clay Pipe/Manhold Rabilitation is part of the Utilities Department’s efforts at I/I reduction is to repair/reconstruct existing sewer lines that are a source of I/I. The Cured-In-Place-Pipe (CIPP) method involves lining the inside of an older deteriorated sanitary sewer main without excavation. Therefore, there is very little disruption above ground. CIPP is a cost effective method of sewer main rehabilitation when compared with other more invasive methods.  
 The Utilities Department has a multi-year plan to rehabilitate city owned infrastructure using this trenchless method. Line segments are selected for rehabilitation based on several factors. These factors include:  
 •Known defects based on maintenance and TV inspection records  
 •Pipe Depth, Age and Material  
 •Presence of unused taps or connections that may contribute inflow/infiltration  
 •Above ground conditions

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design					1,014,000	1,014,000
Construction/Maintenance					4,056,000	4,056,000
<b>Total</b>					<b>5,070,000</b>	<b>5,070,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater					5,070,000	5,070,000
<b>Total</b>					<b>5,070,000</b>	<b>5,070,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2194CIP  
**Project Name** 2021 Rapid I/I Reduction Program

**Department Priority**  
 Unfunded

**Total Project Cost:** \$3,190,000

**Description**  
 2021 Rapid I/I Reduction Program

**Justification**  
 The Integrated 2012 Wastewater Utilities Plan and Capital Improvements Program recommended the implementation of a Rapid Inflow and Infiltration (I/I) Reduction Program. The objective of the Rapid I/I Reduction Program is an overall 35% reduction of I/I within the program area. By reducing I/I by 35%, we decrease the need for construction projects that add system capacity within the sewer system and the need for wet weather treatment capacity expansion at the Kaw WWTP.

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design					638,000	638,000
Construction/Maintenance					2,552,000	2,552,000
<b>Total</b>					<b>3,190,000</b>	<b>3,190,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater					3,190,000	3,190,000
<b>Total</b>					<b>3,190,000</b>	<b>3,190,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2195CIP  
**Project Name** Lower Yankee Tank Capacity

**Department Priority**  
 Unfunded

**Total Project Cost:** \$2,850,000

**Description**  
 Lower Yankee Tank Capacity

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design					570,000	570,000
Construction/Maintenance					2,280,000	2,280,000
<b>Total</b>					<b>2,850,000</b>	<b>2,850,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater					2,850,000	2,850,000
<b>Total</b>					<b>2,850,000</b>	<b>2,850,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2196CIP  
**Project Name** KR-5C 12" Relief Sewer

**Department Priority**  
 Unfunded

**Total Project Cost:** \$1,140,000

**Description**  
 KR-5C 12" Relief Sewer

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design					228,000	228,000
Construction/Maintenance					912,000	912,000
<b>Total</b>					<b>1,140,000</b>	<b>1,140,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Wastewater					1,140,000	1,140,000
<b>Total</b>					<b>1,140,000</b>	<b>1,140,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2197CIP  
**Project Name** 2021 Clinton WTP Improvement Program

**Department Priority**  
 Unfunded

**Total Project Cost:** \$450,000

**Description**  
 2021 Clinton Water Treatment Plant Annual Improvement Program

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design					90,000	90,000
Construction/Maintenance					360,000	360,000
<b>Total</b>					450,000	450,000

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water					450,000	450,000
<b>Total</b>					450,000	450,000

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2198CIP  
**Project Name** 2021 Kaw WTP Improvement Program

**Department Priority**  
 Unfunded

**Total Project Cost:** \$450,000

**Description**  
 2021 Kaw Water Treatment Plant Annual Improvement Program

**Justification**

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design					90,000	90,000
Construction/Maintenance					360,000	360,000
<b>Total</b>					<b>450,000</b>	<b>450,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water					450,000	450,000
<b>Total</b>					<b>450,000</b>	<b>450,000</b>

**Budget Impact/Other**

**DRAFT Recommended Projects**

2017 *thru* 2021

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life** 50 years  
**Category** Water  
**Priority** 1 Critical  
**Status** Active

**Project #** UT2199CIP  
**Project Name** 2021 Watermain Replacement/Relocation Program

**Department Priority**  
 Unfunded

**Total Project Cost:** \$4,720,000

**Description**  
 2021 Watermain Replacement/Relocation Program, to include watermain assessment and maintenance activities through contractor arrangements and in-house at to-be-identified locations.

**Justification**  
 A program for the replacement and rehabilitation of deteriorated and undersized water distribution piping was identified in the 2012 Integrated Water Utility Plan and Capital Improvements Plan. Department of Utilities staff continuously evaluates the condition of the water distribution system based on main breaks, pipe material and age, capacity and fire protection needs. Based on these criteria, along with the criticality of the watermain within the system and the number of services affected, watermains are targeted for replacement.  
 Continued progress in water main replacement further increases the reliability of the City's water transmission system.

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Planning/Design					944,000	944,000
Construction/Maintenance					3,776,000	3,776,000
<b>Total</b>					4,720,000	4,720,000

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Utility - Water					4,720,000	4,720,000
<b>Total</b>					4,720,000	4,720,000

**Budget Impact/Other**