

**Proposed Capital Improvement Plan**

2019 *thru* 2023

**Department** Utilities

**City of Lawrence, Kansas**

**Contact** UT Director

<b>Project #</b>	<b>UT1884CIP</b>
<b>Project Name</b>	<b>Collection System Field Operations Building</b>

**Type** Improvement

**Useful Life**

**Category** Wastewater

**Dept. Priority**

**Address**

**Unfunded**

**GIS Coordinate**

**Status** Active

<b>Description</b>
The Collection System Field Operations Building project includes the design and construction of a new field operations building to house Utilities field staff, equipment, and inventory.

<b>Justification</b>
Over the years the focus of the Utility Department has been to provide the best possible services for the residences of the City of Lawrence. As a result, improvements to the water treatment plants, waste water treatment plant and maintenance of the distribution system have been the priority. At the same time the department’s administrative and engineering staff has grown as required to support this effort. This growth has been so gradual that the space needs for administration and engineering has been carved out of existing spaces in different areas of the Kansas and Kaw Plants. Having staff located at two different sites results in time consuming inefficiencies both in travel and communication. Recommendations include housing the field operations crew, meter readers, administration, GIS and engineering staff in one location in a new building that includes adequate space for field crew offices, administration offices, engineering offices, GIS offices, field crew and meter readers, break room, separate men’s and women’s locker rooms and maintenance shop which will include a garage adequate in height for equipment.

Prior	Expenditures	2019	2020	2021	2022	2023	Total
200,000	Planning/Design	1,180,000					1,180,000
	Construction/Maintenance		5,980,000				5,980,000
<b>Total</b>		<b>1,180,000</b>	<b>5,980,000</b>				<b>7,160,000</b>

Prior	Funding Sources	2019	2020	2021	2022	2023	Total
200,000	Utility - Bond Wastewater	590,000	2,990,000				3,580,000
	Utility - Bond Water	590,000	2,990,000				3,580,000
<b>Total</b>		<b>1,180,000</b>	<b>5,980,000</b>				<b>7,160,000</b>

<b>Budget Impact/Other</b>

**Proposed Capital Improvement Plan**

2019 thru 2023

**Department** Utilities

**City of Lawrence, Kansas**

**Contact** UT Director

<b>Project #</b>	<b>UT1892CIP</b>
<b>Project Name</b>	<b>PS #8 Elimination - 21" Gravity Sewer</b>

**Type** Maintenance

**Useful Life**

**Category** Wastewater

**Dept. Priority**

**Address**

Unfunded

**GIS Coordinate**

**Status** Active

<b>Description</b>
The Pump Station #8 Elimination - 21" Gravity Sewer project includes the design and construction of removing the lift station and installing relief sewers in Naismith Valley.

<b>Justification</b>
PS #8 is currently undersized for the flow coming to the station. In periods of excessive flow sewage overflows into the Naismith Valley sewer system to PS #5. Downstream sewer sizing from PS #8 is not sized for additional flow. PS #8 is over 60 years old and in need of major rehabilitation. Instead of rehabbing the station and constructing larger downstream interceptors, removing a lift station and providing relief sewers in Naismith Valley is less costly and does not have long term energy costs associated with a pump station.

Prior	Expenditures	2019	2020	2021	2022	2023	Total
450,000	Planning/Design	832,000					832,000
	Construction/Maintenance	3,328,000					3,328,000
<b>Total</b>			<b>Total</b>	4,160,000			4,160,000

Prior	Funding Sources	2019	2020	2021	2022	2023	Total
450,000	Utility - Bond Wastewater	4,160,000					4,160,000
<b>Total</b>			<b>Total</b>	4,160,000			4,160,000

<b>Budget Impact/Other</b>

**Proposed Capital Improvement Plan**

2019 thru 2023

**Department** Utilities

**City of Lawrence, Kansas**

**Contact** UT Director

<b>Project #</b>	<b>UT1898CIP</b>
<b>Project Name</b>	<b>Automated Meter Reading Installation</b>

**Type** Improvement

**Useful Life** 50 years

**Category** Water

**Dept. Priority**

**Address**

Unfunded

**GIS Coordinate**

**Status** Active

<b>Description</b>
Automated Meter Reading Installation, to include equipment, software and infrastructure improvements.

<b>Justification</b>
The business case assessment completed in 2016 identifies a 12 year payback period for the investment with a return on investment (20 years) of 41% if the City self installs the meters or a 13 year payback period with a return on investment (20 years) of 36% for a contractor lead installation.
Communications network also allows additional distribution and collection system monitoring.

Prior	Expenditures	2019	2020	2021	2022	2023	Total
6,420,000	Planning/Design	890,000					890,000
	Construction/Maintenance	3,560,000					3,560,000
<b>Total</b>							
	<b>Total</b>	<b>4,450,000</b>					<b>4,450,000</b>

Prior	Funding Sources	2019	2020	2021	2022	2023	Total
6,420,000	Utility - Bond Water	4,450,000					4,450,000
<b>Total</b>							
	<b>Total</b>	<b>4,450,000</b>					<b>4,450,000</b>

<b>Budget Impact/Other</b>

**Proposed Capital Improvement Plan**

2019 *thru* 2023

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life** 50 years  
**Category** Water

**Project #** UT1984CIP  
**Project Name** Stratford Tower Replacement

**Dept. Priority** Unfunded      **Address** GIS Coordinate      **Status** Active

**Description**  
 This project includes the 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>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Planning/Design	760,000					760,000
Construction/Maintenance		3,040,000				3,040,000
<b>Total</b>	<b>760,000</b>	<b>3,040,000</b>				<b>3,800,000</b>

<b>Funding Sources</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Utility - Bond Water	120,000	2,680,000				2,800,000
Utility - Water	250,000	750,000				1,000,000
<b>Total</b>	<b>370,000</b>	<b>3,430,000</b>				<b>3,800,000</b>

**Budget Impact/Other**

**Proposed Capital Improvement Plan**

2019 thru 2023

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life** 50 years  
**Category** Water

**Project #** UT1985CIP  
**Project Name** Kaw Water TP Basin Infrastructure Rehab

**Dept. Priority** Unfunded      **Address** GIS Coordinate      **Status** Active

**Description**  
 This project includes an infrastructure assessment and rehabilitation of the basins and walkways at Kaw Water Treatment Plant.

**Justification**  
 Repair of basin and walkway concrete at various locations throughout the Kaw Water Treatment Plant. Basin structures were constructed in the mid 1950's and are showing signs of deterioration in spalling, delaminating, or cracking concrete.

<b>Expenditures</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Planning/Design	234,000					234,000
Construction/Maintenance	936,000					936,000
<b>Total</b>	<b>1,170,000</b>					<b>1,170,000</b>

<b>Funding Sources</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Utility - Bond Water	1,170,000					1,170,000
<b>Total</b>	<b>1,170,000</b>					<b>1,170,000</b>

**Budget Impact/Other**

**Proposed Capital Improvement Plan**

2019 *thru* 2023

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Improvement  
**Useful Life** 50 years  
**Category** Water

**Project #** UT1987CIP  
**Project Name** Kaw Lime Slakers Replacement

**Dept. Priority** Unfunded      **Address** GIS Coordinate      **Status** Active

**Description**  
 This project includes the replacement of Lime Slakers at the Kaw Water Treatment Plant.

**Justification**  
 The existing lime system has poor efficiency, requires frequent maintenance, and spare parts are becoming less available.

<b>Expenditures</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Planning/Design	580,000					580,000
Construction/Maintenance		3,420,000				3,420,000
<b>Total</b>	<b>580,000</b>	<b>3,420,000</b>				<b>4,000,000</b>

<b>Funding Sources</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Utility - Bond Water	580,000	3,420,000				4,000,000
<b>Total</b>	<b>580,000</b>	<b>3,420,000</b>				<b>4,000,000</b>

**Budget Impact/Other**

**Proposed Capital Improvement Plan**

2019 *thru* 2023

City of Lawrence, Kansas

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life** 50 years  
**Category** Water

**Project #** UT1988CIP  
**Project Name** 2019 - Tower Inspections and Cleanings

**Dept. Priority** Unfunded      **Address** GIS Coordinate      **Status** Active

**Description**  
 This project includes the inspections and cleaning of water towers.

**Justification**  
 KDHE/AWWA recommends periodic inspection, cleaning, and maintenance of water tower structures.

<b>Expenditures</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Construction/Maintenance	250,000					250,000
<b>Total</b>	<b>250,000</b>					<b>250,000</b>

<b>Funding Sources</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Utility - Bond Water	250,000					250,000
<b>Total</b>	<b>250,000</b>					<b>250,000</b>

**Budget Impact/Other**





**Proposed Capital Improvement Plan**

2019 *thru* 2023

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater

**Project #** UT2083CIP  
**Project Name** Kansas River WWTP Nutrient Removal Pilot

**Dept. Priority** Unfunded  
**Address**  
**GIS Coordinate**  
**Status** Active

**Description**  
 The Kansas River WWTP Nutrient Removal Pilot Project includes the evaluation of side stream treatment for nutrient removal.

**Justification**  
 Evaluation of the side stream treatment technology to see if it is an option for our treatment plant. If successful it may significantly reduce the cost of the nutrient removal in 2023.

<b>Expenditures</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Planning/Design		122,000				122,000
Construction/Maintenance		488,000				488,000
<b>Total</b>		<b>610,000</b>				<b>610,000</b>

<b>Funding Sources</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Utility - Wastewater		610,000				610,000
<b>Total</b>		<b>610,000</b>				<b>610,000</b>

**Budget Impact/Other**

**Proposed Capital Improvement Plan**

2019 *thru* 2023

**Department** Utilities

**City of Lawrence, Kansas**

**Contact** UT Director

<b>Project #</b>	<b>UT2094CIP</b>
<b>Project Name</b>	<b>Clinton WTP Plant Piping</b>

**Type** Maintenance

**Useful Life**

**Category** Water

**Dept. Priority**

**Address**

Unfunded

**GIS Coordinate**

**Status** Active

<b>Description</b>
The Clinton Water Treatment Plant Piping project will replace the filter gallery piping at the Clinton Water Treatment Plant.

<b>Justification</b>
The filter gallery piping is welded steel pipe that has been in a humid, wet environment for almost 40 years. Significant corrosion and coating failures require the replacement of the filter gallery piping.

<b>Expenditures</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Planning/Design		550,000				550,000
Construction/Maintenance			3,230,000			3,230,000
<b>Total</b>		<b>550,000</b>	<b>3,230,000</b>			<b>3,780,000</b>

<b>Funding Sources</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Utility - Bond Water		550,000	3,230,000			3,780,000
<b>Total</b>		<b>550,000</b>	<b>3,230,000</b>			<b>3,780,000</b>

<b>Budget Impact/Other</b>

**Proposed Capital Improvement Plan**

2019 *thru* 2023

**Department** Utilities

**City of Lawrence, Kansas**

**Contact** UT Director

<b>Project #</b>	<b>UT2184CIP</b>
<b>Project Name</b>	<b>Pump Station 9 Expansion to 15 MGD</b>

**Type** Maintenance

**Useful Life**

**Category** Wastewater

**Dept. Priority**

**Address**

Unfunded

**GIS Coordinate**

**Status** Active

<b>Description</b>
This project will expand Pump Station 9 to 15 MGD.

<b>Justification</b>
Sewer flows upstream of PS #9 have increased due to development and are at or above the capacity of the pump station and existing storage. This project expands the pumping capacity to 15 MGD.

<b>Expenditures</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Planning/Design			656,000			656,000
Construction/Maintenance			2,624,000			2,624,000
<b>Total</b>			<b>3,280,000</b>			<b>3,280,000</b>

<b>Funding Sources</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Utility - Bond Wastewater			3,280,000			3,280,000
<b>Total</b>			<b>3,280,000</b>			<b>3,280,000</b>

<b>Budget Impact/Other</b>

**Proposed Capital Improvement Plan**

2019 *thru* 2023

**Department** Utilities

**City of Lawrence, Kansas**

**Contact** UT Director

<b>Project #</b>	<b>UT2185CIP</b>
<b>Project Name</b>	<b>Pump Station 16 Upstream Interceptor Rehab</b>

**Type** Maintenance

**Useful Life**

**Category** Wastewater

**Dept. Priority**

**Address**

Unfunded

**GIS Coordinate**

**Status** Active

<b>Description</b>
The Pump Station 16 Upstream Interceptor Rehabilitation project will improve the sanitary sewer metal pipe upstream of Pump Station 16.

<b>Justification</b>
Various segments of the corrugated metal pipe upstream of PS #16 have been lined. This project will line all remaining CMP pipe before it deteriorates and begins to fail.

<b>Expenditures</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Planning/Design			264,000			264,000
Construction/Maintenance			1,056,000			1,056,000
<b>Total</b>			<b>1,320,000</b>			<b>1,320,000</b>

<b>Funding Sources</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Utility - Bond Wastewater			1,320,000			1,320,000
<b>Total</b>			<b>1,320,000</b>			<b>1,320,000</b>

<b>Budget Impact/Other</b>

**Proposed Capital Improvement Plan**

2019 *thru* 2023

**Department** Utilities

**City of Lawrence, Kansas**

**Contact** UT Director

<b>Project #</b>	<b>UT2187CIP</b>
<b>Project Name</b>	<b>Clinton Storage Tanks Maintenance/ Coatings</b>

**Type** Maintenance

**Useful Life** 50 years

**Category** Water

**Dept. Priority**

**Address**

Unfunded

**GIS Coordinate**

**Status** Active

**Description**

This project will identify the need for and implement maintenance or coatings for the 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>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Planning/Design			508,000			508,000
Construction/Maintenance			2,032,000			2,032,000
<b>Total</b>			<b>2,540,000</b>			<b>2,540,000</b>

<b>Funding Sources</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Utility - Bond Water			2,040,000			2,040,000
Utility - Water			500,000			500,000
<b>Total</b>			<b>2,540,000</b>			<b>2,540,000</b>

**Budget Impact/Other**

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**Proposed Capital Improvement Plan**

2019 *thru* 2023

**Department** Utilities

**City of Lawrence, Kansas**

**Contact** UT Director

<b>Project #</b>	<b>UT2188CIP</b>
<b>Project Name</b>	<b>PS9 Forcemain to PS10</b>

**Type** Improvement

**Useful Life**

**Category** Wastewater

**Dept. Priority**

**Address**

Unfunded

GIS Coordinate

**Status** Active

<b>Description</b>
The PS9 Forcemain to PS10 project will design and construct two new forcemains that will deliver wastewater from Pump Station 9 to Pump Station 10.

<b>Justification</b>
In conjunction with Project UT2092CIP, the forcemain is required to convey the additional flows from PS#9 to PS#10.

<b>Expenditures</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Planning/Design			1,266,000			1,266,000
Construction/Maintenance			5,064,000			5,064,000
<b>Total</b>			<b>6,330,000</b>			<b>6,330,000</b>

<b>Funding Sources</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Utility - Bond Wastewater			6,330,000			6,330,000
<b>Total</b>			<b>6,330,000</b>			<b>6,330,000</b>

<b>Budget Impact/Other</b>

**Proposed Capital Improvement Plan**

2019 *thru* 2023

**Department** Utilities

**City of Lawrence, Kansas**

**Contact** UT Director

<b>Project #</b>	<b>UT2196CIP</b>
<b>Project Name</b>	<b>23rd St. Haskell - E City Limits Watermain Rplcmnt</b>

**Type** Improvement

**Useful Life** 50 years

**Category** Water

**Dept. Priority**

**Address**

Unfunded

**GIS Coordinate**

**Status** Active

<b>Description</b>
Waterline replacement from Haskell to East City Limits, as required for improvements on 23rd Street by PW.

<b>Justification</b>
Public Works will be reconstructing 23rd Street (Haskell Bridge to East City Limits). This project will include the relocation of watermain and sanitary sewer associated with this scope of work, including but not limited to 16" and 12" watermain.

<b>Expenditures</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Construction/Maintenance			1,710,000			1,710,000
<b>Total</b>			<b>1,710,000</b>			<b>1,710,000</b>

<b>Funding Sources</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Utility - Bond Water			1,710,000			1,710,000
<b>Total</b>			<b>1,710,000</b>			<b>1,710,000</b>

<b>Budget Impact/Other</b>

**Proposed Capital Improvement Plan**

2019 *thru* 2023

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater

**Project #** UT2285CIP  
**Project Name** Lower Yankee Tank Capacity

**Dept. Priority** Unfunded      **Address**  
**GIS Coordinate**      **Status** Active

**Description**  
 The Lower Yankee Tank Capacity project will identify, design and construct larger gravity sewer systems for the Lower Yankee Tank area that flows to Pump Station 9.

**Justification**  
 Sewer flows upstream of PS #9 have increased due to development and are at or above the capacity of the pump station and existing storage. This project is preceded by the expansion of PS #9 and increases the capacity of the gravity system to the station.

<b>Expenditures</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Planning/Design				1,730,000		1,730,000
Construction/Maintenance				6,920,000		6,920,000
<b>Total</b>				<b>8,650,000</b>		<b>8,650,000</b>

<b>Funding Sources</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Utility - Bond Wastewater				8,650,000		8,650,000
<b>Total</b>				<b>8,650,000</b>		<b>8,650,000</b>

**Budget Impact/Other**



**Proposed Capital Improvement Plan**

2019 *thru* 2023

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life** 50 years  
**Category** Water

**Project #** UT2286CIP  
**Project Name** 2022 Kaw WTP Infrastructure Rehab

**Dept. Priority** Unfunded      **Address** GIS Coordinate      **Status** Active

**Description**  
 The Kaw Water Treatment Plant infrastructure assessment and rehabilitation project will design, construct and implement a new carbon contact basin at the Kaw River Water Treatment Plant.

**Justification**  
 The carbon basin was constructed in about 1917 and is in need of replacement.

<b>Expenditures</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Planning/Design				1,054,000		1,054,000
Construction/Maintenance				4,216,000		4,216,000
<b>Total</b>				<b>5,270,000</b>		<b>5,270,000</b>

<b>Funding Sources</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Utility - Bond Water				1,710,000		1,710,000
Utility - Water				3,560,000		3,560,000
<b>Total</b>				<b>5,270,000</b>		<b>5,270,000</b>

**Budget Impact/Other**

**Proposed Capital Improvement Plan**

2019 *thru* 2023

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater

**Project #** UT2293CIP  
**Project Name** Kansas River WWTP Side Stream - Belt Press Ammonia

**Dept. Priority** Unfunded      **Address**  
**GIS Coordinate**      **Status** Active

**Description**  
 The Kaw WWTP Side Stream Treatment - Belt Press Ammonia project will identify, design and construct measures for additional nutrient removal at the Kaw Wastewater Treatment Plant.

**Justification**  
 This will be driven by the KDHE regulations and NPDES permitting for additional nutrient removal (nitrogen and phosphorus). Additional treatment may be required for the concentrated liquid that is extracted from the belt press.

<b>Expenditures</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Future</b>
Construction/Maintenance				1,320,000	3,430,000	4,750,000	3,560,000
<b>Total</b>				<b>1,320,000</b>	<b>3,430,000</b>	<b>4,750,000</b>	<b>Total</b>

<b>Funding Sources</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>	<b>Future</b>
Utility - Bond Wastewater				1,320,000	3,430,000	4,750,000	3,560,000
<b>Total</b>				<b>1,320,000</b>	<b>3,430,000</b>	<b>4,750,000</b>	<b>Total</b>

**Budget Impact/Other**

Proposed Capital Improvement Plan

2019 thru 2023

Department Utilities

City of Lawrence, Kansas

Contact UT Director

Project # **UT2294CIP**  
 Project Name **Kaw WWTP Nutrient Removal/Deammo & Sidestream**

Type Maintenance

Useful Life

Category Wastewater

Dept. Priority

Address

Unfunded

GIS Coordinate

Status Active

**Description**  
 Kaw Wastewater Treatment Plant Design for Nutrient Removal/Deammonification Modification and Side Stream Treatment.

**Justification**  
 This will be driven by the KDHE regulations and NPDES permitting for additional nutrient removal (nitrogen and phosphorus). Additional treatment may be required for the concentrated liquid that is extracted from the belt press.

Expenditures	2019	2020	2021	2022	2023	Total	Future
Planning/Design				6,580,000		6,580,000	15,310,000
Construction/Maintenance					14,720,000	14,720,000	
<b>Total</b>				<b>6,580,000</b>	<b>14,720,000</b>	<b>21,300,000</b>	<b>Total</b>

Funding Sources	2019	2020	2021	2022	2023	Total	Future
Utility - Bond Wastewater				6,580,000	14,720,000	21,300,000	15,310,000
<b>Total</b>				<b>6,580,000</b>	<b>14,720,000</b>	<b>21,300,000</b>	<b>Total</b>

**Budget Impact/Other**

**Proposed Capital Improvement Plan**

2019 *thru* 2023

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Improvement  
**Useful Life** 50 years  
**Category** Water

**Project #** UT2299CIP  
**Project Name** Wakarusa - Research Parkway to 23rd

**Dept. Priority** Unfunded      **Address** GIS Coordinate      **Status** Active

**Description**  
 Public Works will be reconstructing Wakarusa Drive (Research Parkway to 23rd Street). Possible Utilities relocations due to this work.

**Justification**  
 Public Works will be reconstructing Wakarusa Drive (Research Parkway to 23rd Street). This project will include the relocation of watermain and sanitary sewer associated with this scope of work, including but not limited to 24" concrete transmission main.

<b>Expenditures</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Construction/Maintenance				1,000,000		1,000,000
<b>Total</b>				<b>1,000,000</b>		<b>1,000,000</b>

<b>Funding Sources</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Utility - Bond Water				1,000,000		1,000,000
<b>Total</b>				<b>1,000,000</b>		<b>1,000,000</b>

**Budget Impact/Other**

**Proposed Capital Improvement Plan**

2019 *thru* 2023

**City of Lawrence, Kansas**

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life** 50 years  
**Category** Water

**Project #** UT2399CIP  
**Project Name** Harper Tower Maintenance/Coatings

**Dept. Priority** Unfunded      **Address** GIS Coordinate      **Status** Active

**Description**  
 Maintenance/coatings for Harper Water Tower.

**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>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Planning/Design					274,000	274,000
Construction/Maintenance					1,096,000	1,096,000
<b>Total</b>					<b>1,370,000</b>	<b>1,370,000</b>

<b>Funding Sources</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Utility - Water					1,370,000	1,370,000
<b>Total</b>					<b>1,370,000</b>	<b>1,370,000</b>

**Budget Impact/Other**

**Proposed Capital Improvement Plan**

2019 thru 2023

**Department** Utilities

**City of Lawrence, Kansas**

**Contact** UT Director

<b>Project #</b>	<b>UT9900CIP</b>
<b>Project Name</b>	<b>Clinton WTP Improvement Program</b>

**Type** Maintenance

**Useful Life**

**Category** Water

**Dept. Priority**

**Address**

**Unfunded**

**GIS Coordinate**

**Status** Active

<b>Description</b>
The Clinton Water Treatment Plant Improvement Program project includes the evaluation and repair of the KAW Water Treatment Plant structures and appurtenances.

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

Prior	Expenditures	2019	2020	2021	2022	2023	Total
320,000	Planning/Design	80,000	86,000	90,000	94,000	96,000	446,000
<b>Total</b>	Construction/Maintenance		344,000	360,000	376,000	384,000	1,464,000
	Equip/Vehicles/Furnishings	625,000					625,000
	<b>Total</b>	<b>705,000</b>	<b>430,000</b>	<b>450,000</b>	<b>470,000</b>	<b>480,000</b>	<b>2,535,000</b>

Prior	Funding Sources	2019	2020	2021	2022	2023	Total
320,000	Utility - Bond Water	500,000	55,000	200,000			755,000
<b>Total</b>	Utility - Water	205,000	375,000	250,000	470,000	480,000	1,780,000
	<b>Total</b>	<b>705,000</b>	<b>430,000</b>	<b>450,000</b>	<b>470,000</b>	<b>480,000</b>	<b>2,535,000</b>

<b>Budget Impact/Other</b>

**Proposed Capital Improvement Plan**

2019 thru 2023

**Department** Utilities

**City of Lawrence, Kansas**

**Contact** UT Director

<b>Project #</b>	<b>UT9901CIP</b>
<b>Project Name</b>	<b>Kaw WTP Improvement Program</b>

**Type** Maintenance

**Useful Life**

**Category** Water

**Dept. Priority**

**Address**

Unfunded

**GIS Coordinate**

**Status** Active

<b>Description</b>
The Kaw Water Treatment Plant Improvement Program project includes the evaluation and repair of the KAW Water Treatment Plant structures and appurtenances.

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

Prior	Expenditures	2019	2020	2021	2022	2023	Total
300,000	Planning/Design	39,000	86,000	90,000	94,000	96,000	405,000
	Construction/Maintenance	156,000	344,000	360,000	376,000	384,000	1,620,000
<b>Total</b>							
	<b>Total</b>	<b>195,000</b>	<b>430,000</b>	<b>450,000</b>	<b>470,000</b>	<b>480,000</b>	<b>2,025,000</b>

Prior	Funding Sources	2019	2020	2021	2022	2023	Total
300,000	Utility - Bond Water	70,000	55,000	200,000			325,000
	Utility - Water	125,000	375,000	250,000	470,000	480,000	1,700,000
<b>Total</b>							
	<b>Total</b>	<b>195,000</b>	<b>430,000</b>	<b>450,000</b>	<b>470,000</b>	<b>480,000</b>	<b>2,025,000</b>

<b>Budget Impact/Other</b>

**Proposed Capital Improvement Plan**

2019 *thru* 2023

**Department** Utilities

**City of Lawrence, Kansas**

**Contact** UT Director

<b>Project #</b>	<b>UT9902CIP</b>
<b>Project Name</b>	<b>Watermain Replacement/Relocation Program</b>

**Type** Maintenance

**Useful Life** 50 years

**Category** Water

**Dept. Priority**

**Address**

Unfunded

**GIS Coordinate**

**Status** Active

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

<b>Justification</b>
Watermain Replacement/Relocation Program, to include watermain assessment and maintenance activities through contractor arrangements and in-house at to-be-identified locations.

Prior	Expenditures	2019	2020	2021	2022	2023	Total
2,640,000	Planning/Design	872,000	908,000	602,000	780,000	1,020,000	4,182,000
	Construction/Maintenance	3,488,000	3,632,000	2,408,000	3,120,000	4,080,000	16,728,000
<b>Total</b>	<b>Total</b>	<b>4,360,000</b>	<b>4,540,000</b>	<b>3,010,000</b>	<b>3,900,000</b>	<b>5,100,000</b>	<b>20,910,000</b>

Prior	Funding Sources	2019	2020	2021	2022	2023	Total
2,640,000	Utility - Bond Water	4,360,000	4,540,000	3,010,000	3,900,000	3,430,000	19,240,000
	Utility - Water					1,670,000	1,670,000
<b>Total</b>	<b>Total</b>	<b>4,360,000</b>	<b>4,540,000</b>	<b>3,010,000</b>	<b>3,900,000</b>	<b>5,100,000</b>	<b>20,910,000</b>

<b>Budget Impact/Other</b>



**Proposed Capital Improvement Plan**

2019 thru 2023

**Department** Utilities

**City of Lawrence, Kansas**

**Contact** UT Director

<b>Project #</b>	<b>UT9903CIP</b>
<b>Project Name</b>	<b>Sewer Main Relocations for Road Projects</b>

**Type** Maintenance

**Useful Life**

**Category** Wastewater

**Dept. Priority**

**Address**

Unfunded

**GIS Coordinate**

**Status** Active

<b>Description</b>
The Sewer Main Relocations for Road Project includes the evaluation, design and construction of sanitary sewer relocations due to roadway project construction projects.

<b>Justification</b>
Funding to move, adjust, or replace sewer infrastructure impacted by roadway construction projects.

Prior	Expenditures	2019	2020	2021	2022	2023	Total
390,000	Planning/Design	50,000	84,000	88,000	90,000	94,000	406,000
	Construction/Maintenance	200,000	336,000	352,000	360,000	376,000	1,624,000
<b>Total</b>	<b>Total</b>	<b>250,000</b>	<b>420,000</b>	<b>440,000</b>	<b>450,000</b>	<b>470,000</b>	<b>2,030,000</b>

Prior	Funding Sources	2019	2020	2021	2022	2023	Total
390,000	Utility - Bond Wastewater	250,000	420,000	70,000			740,000
	Utility - Wastewater			370,000	450,000	470,000	1,290,000
<b>Total</b>	<b>Total</b>	<b>250,000</b>	<b>420,000</b>	<b>440,000</b>	<b>450,000</b>	<b>470,000</b>	<b>2,030,000</b>

<b>Budget Impact/Other</b>

**Proposed Capital Improvement Plan**

2019 thru 2023

**Department** Utilities

**City of Lawrence, Kansas**

**Contact** UT Director

<b>Project #</b>	<b>UT9904CIP</b>
<b>Project Name</b>	<b>WW Failed Infrastructure Contingency</b>

**Type** Maintenance

**Useful Life**

**Category** Wastewater

**Dept. Priority**

**Address**

Unfunded

**GIS Coordinate**

**Status** Active

<b>Description</b>
The Wastewater Failed Infrastructure Contingency project includes the evaluation and repair of plant and collection system structures and appurtenances.

<b>Justification</b>
System integrity and operational functionality necessitate continual evaluation and repair of plant and collection system structures and appurtenances to address structural, electrical, process, and capacity deficiencies.

Prior	Expenditures	2019	2020	2021	2022	2023	Total
290,000	Planning/Design		84,000	88,000	90,000	94,000	356,000
	Construction/Maintenance		336,000	352,000	360,000	376,000	1,424,000
<b>Total</b>			<b>Total</b>	<b>420,000</b>	<b>440,000</b>	<b>450,000</b>	<b>470,000</b>
							<b>1,780,000</b>

Prior	Funding Sources	2019	2020	2021	2022	2023	Total
290,000	Utility - Bond Wastewater		250,000				250,000
	Utility - Wastewater		170,000	440,000	450,000	470,000	1,530,000
<b>Total</b>			<b>Total</b>	<b>420,000</b>	<b>440,000</b>	<b>450,000</b>	<b>470,000</b>
							<b>1,780,000</b>

<b>Budget Impact/Other</b>

**Proposed Capital Improvement Plan**

2019 *thru* 2023

City of Lawrence, Kansas

**Department** Utilities  
**Contact** UT Director  
**Type** Maintenance  
**Useful Life**  
**Category** Wastewater

**Project #** UT9905CIP  
**Project Name** Pump Station Annual Improvements

**Dept. Priority** Unfunded      **Address**  
**GIS Coordinate**      **Status** Active

**Description**  
 The Pump Station Annual Improvements project includes the evaluation and repair of wastewater pump station structures and appurtenances.

**Justification**  
 System integrity and operational functionality necessitate continual evaluation and repair of pump station structures and appurtenances to address structural, electrical and mechanical deficiencies

Prior	Expenditures	2019	2020	2021	2022	2023	Total
140,000	Planning/Design	20,000	30,000	32,000	32,000	34,000	148,000
	Construction/Maintenance	80,000	120,000	128,000	128,000	136,000	592,000
<b>Total</b>	<b>Total</b>	<b>100,000</b>	<b>150,000</b>	<b>160,000</b>	<b>160,000</b>	<b>170,000</b>	<b>740,000</b>

Prior	Funding Sources	2019	2020	2021	2022	2023	Total
140,000	Utility - Wastewater	100,000	150,000	160,000	160,000	170,000	740,000
<b>Total</b>	<b>Total</b>	<b>100,000</b>	<b>150,000</b>	<b>160,000</b>	<b>160,000</b>	<b>170,000</b>	<b>740,000</b>

**Budget Impact/Other**

**Proposed Capital Improvement Plan**

2019 thru 2023

**Department** Utilities

**City of Lawrence, Kansas**

**Contact** UT Director

<b>Project #</b>	<b>UT9906CIP</b>
<b>Project Name</b>	<b>Kansas River WWTP Annual Improvements</b>

**Type** Maintenance

**Useful Life**

**Category** Wastewater

**Dept. Priority**

**Address**

Unfunded

**GIS Coordinate**

**Status** Active

<b>Description</b>
The Wastewater Treatment Plant Annual Improvements project includes the evaluation and repair of plant structures and appurtenances at the Kansas River Wastewater Treatment Plant.

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

Prior	Expenditures	2019	2020	2021	2022	2023	Total
390,000	Planning/Design	200,000	84,000				284,000
	Construction/Maintenance	800,000	336,000				1,136,000
<b>Total</b>		<b>1,000,000</b>	<b>420,000</b>				<b>1,420,000</b>

Prior	Funding Sources	2019	2020	2021	2022	2023	Total
390,000	Utility - Bond Wastewater	750,000					750,000
	Utility - Wastewater	250,000	420,000				670,000
<b>Total</b>		<b>1,000,000</b>	<b>420,000</b>				<b>1,420,000</b>

<b>Budget Impact/Other</b>

**Proposed Capital Improvement Plan**

2019 *thru* 2023

**Department** Utilities

**City of Lawrence, Kansas**

**Contact** UT Director

<b>Project #</b>	<b>UT9907CIP</b>
<b>Project Name</b>	<b>WWTP Annual Improvements (2 PLANTS)</b>

**Type** Maintenance

**Useful Life**

**Category** Wastewater

**Dept. Priority**

**Address**

**Unfunded**

**GIS Coordinate**

**Status** Active

<b>Description</b>
The Wastewater Treatment Plant Annual Improvements (2 PLANTS) project includes the evaluation and repair of plant structures and appurtenances at the Kansas River and Wakarusa Wastewater Treatment Plants.

<b>Justification</b>
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>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Planning/Design			174,000	180,000	188,000	542,000
Construction/Maintenance			696,000	720,000	752,000	2,168,000
<b>Total</b>			<b>870,000</b>	<b>900,000</b>	<b>940,000</b>	<b>2,710,000</b>

<b>Funding Sources</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>Total</b>
Utility - Wastewater			870,000	900,000	940,000	2,710,000
<b>Total</b>			<b>870,000</b>	<b>900,000</b>	<b>940,000</b>	<b>2,710,000</b>

<b>Budget Impact/Other</b>

**Proposed Capital Improvement Plan**

2019 thru 2023

**Department** Utilities

**City of Lawrence, Kansas**

**Contact** UT Director

<b>Project #</b>	<b>UT9908CIP</b>
<b>Project Name</b>	<b>Clay Pipe/Manhole Rehabilitation</b>

**Type** Maintenance

**Useful Life**

**Category** Wastewater

**Dept. Priority**

**Address**

Unfunded

**GIS Coordinate**

**Status** Active

**Description**

The Clay Pipe/Manhole Rehabilitation project includes the replacement and/or rehabilitation of city owned wastewater infrastructure.

**Justification**

Clay Pipe/Manhole Rehabilitation 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

Prior	Expenditures	2019	2020	2021	2022	2023	Total
1,130,000	Planning/Design	234,000	244,000	254,000	264,000	274,000	1,270,000
	Construction/Maintenance	936,000	976,000	1,016,000	1,056,000	1,096,000	5,080,000
<b>Total</b>	<b>Total</b>	<b>1,170,000</b>	<b>1,220,000</b>	<b>1,270,000</b>	<b>1,320,000</b>	<b>1,370,000</b>	<b>6,350,000</b>

Prior	Funding Sources	2019	2020	2021	2022	2023	Total
1,130,000	Utility - Bond Wastewater	1,170,000	1,220,000	1,270,000			3,660,000
	Utility - Wastewater				1,320,000	1,370,000	2,690,000
<b>Total</b>	<b>Total</b>	<b>1,170,000</b>	<b>1,220,000</b>	<b>1,270,000</b>	<b>1,320,000</b>	<b>1,370,000</b>	<b>6,350,000</b>

**Budget Impact/Other**

**Proposed Capital Improvement Plan**

2019 thru 2023

**Department** Utilities

**City of Lawrence, Kansas**

**Contact** UT Director

<b>Project #</b>	<b>UT9909CIP</b>
<b>Project Name</b>	<b>Rapid I/I Reduction Program</b>

**Type** Maintenance

**Useful Life**

**Category** Wastewater

**Dept. Priority**

**Address**

Unfunded

**GIS Coordinate**

**Status** Active

<b>Description</b>
Comprehensive find and fix program to reduce the rain water entering the sanitary sewer system through the public and private sewer system. Work includes CCTV inspection of sanitary sewers, manhole inspections, public sanitary sewer rehabilitation by CIPP, smoke testing, private property evaluations and repairs.

<b>Justification</b>
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.

Prior	Expenditures	2019	2020	2021	2022	2023	Total
2,830,000	Planning/Design	588,000	612,000	636,000	662,000	688,000	3,186,000
	Construction/Maintenance	2,352,000	2,448,000	2,544,000	2,648,000	2,752,000	12,744,000
<b>Total</b>	<b>Total</b>	<b>2,940,000</b>	<b>3,060,000</b>	<b>3,180,000</b>	<b>3,310,000</b>	<b>3,440,000</b>	<b>15,930,000</b>

Prior	Funding Sources	2019	2020	2021	2022	2023	Total
2,830,000	Utility - Bond Wastewater	2,790,000	2,910,000	3,020,000	590,000	1,860,000	11,170,000
	Utility - Wastewater	150,000	150,000	160,000	2,720,000	1,580,000	4,760,000
<b>Total</b>	<b>Total</b>	<b>2,940,000</b>	<b>3,060,000</b>	<b>3,180,000</b>	<b>3,310,000</b>	<b>3,440,000</b>	<b>15,930,000</b>

<b>Budget Impact/Other</b>