City of Gardner, Kansas

Capital Improvement Plan

2016 thru **2020**

PROJECTS BY FUNDING SOURCE

Source	Project#	Priority	2016	2017	2018	2019	2020	Total
Capital Improvement Reserve Fund								
Senior Center	*FC1603*	n/a	45,000					*45,000*
Capital Improvement Reserve Fund Total			**45,000**					***45,000***
CARS								
Center Street Reconstruction (Kane to Grand)	*PW1502*	n/a	340,000					*340,000*
Center Street Reconstruction (I-35 to Grand)	*PW1601*	n/a		450,000				*450,000*
Moonlight Road Rehab (I-35 to Buffalo Trail)	*PW1704*	n/a			164,000			*164,000*
Center Street Reconstruction (Main to 167th)	*PW1802*	n/a				230,500		*230,500*
CARS Total			**340,000**	**450,000**	**164,000**	**230,500**		***1,184,500***
CDBG								
Senior Center	*FC1603*	n/a	200,000					*200,000*
CDBG Total			**200,000**					***200,000***
Debt Service Fund								
City Hall Roof Replacement	*FC1602*	n/a	169,000					*169,000*
Gardner Lake Spillway Replacement	*PW1701*	n/a		40,000	310,000	2,500,000		*2,850,000*
Jamestown Open Channel South of Madison	*PW1801*	n/a			26,000	204,000		*230,000*
Debt Service Fund Total			**169,000**	**40,000**	**336,000**	**2,704,000**		***3,249,000***
Electric Fund								
Replacing T-1	*EL1402*	n/a	917,000					*917,000*
Sub 1 Improvements (T2 SWGR)	*EL1505*	n/a	216,700					*216,700*
Sub 4 Land Acquisition	*EL1601*	n/a	350,000					*350,000*
Rebuild Parma OH with UG Installation	*EL1602*	n/a	150,000					*150,000*
Combustion Turbine Generator Diesel Starter Engine	*EL1603*	n/a	100,000					*100,000*
Vibration Monitor	*EL1604*	n/a	80,000					*80,000*
Gen. Control Upgrade	*EL1605*	n/a	70,000					*70,000*
Electric Fund Total			**1,883,700**					***1,883,700***
Federal Highway Administration								
Center Street Reconstruction (Kane to Grand)	*PW1502*	n/a	100,000					*100,000*
Federal Highway Administration Total			**100,000**					***100,000***
General Fund								

Source	Project#	Priority	2016	2017	2018	2019	2020	Total
Salt Storage	*FC1601*	n/a	75,000					*75,000*
Trail Reconstruction	*PR1601*	n/a	305,000	275,000	355,000			*935,000*
Greenway Trail Low Water Crossing Replacements	*PR1602*	n/a	202,000					*202,000*
General Fund Total			**582,000**	**275,000**	**355,000**			***1,212,000***
Special Highway Fund								
Center Street Reconstruction (Kane to Grand)	*PW1502*	n/a	389,000					*389,000*
Center Street Reconstruction (I-35 to Grand)	*PW1601*	n/a	10,000	450,000				*460,000*
167th and Center Intersection	*PW1702*	n/a		60,000				*60,000*
175th and Waverly Traffic Signal	*PW1703*	n/a		50,000	435,000			*485,000*
Moonlight Road Rehab (I-35 to Buffalo Trail)	*PW1704*	n/a		35,000	174,000			*209,000*
Center Street Reconstruction (Main to 167th)	*PW1802*	n/a			10,000	230,500		*240,500*
Special Highway Fund Total			**399,000**	**595,000**	**619,000**	**230,500**		***1,843,500***
Wastewater Fund								
Gravity Main Replacement - Washington to Madison	*WW1601*	n/a	100,000	1,400,000				*1,500,000*
South Lift Station Storage Tank Construction	*WW1602*	n/a	2,100,000					*2,100,000*
Gravity Main Replacement Madison to Colleen	*WW1701*	n/a		100,000	1,520,000			*1,620,000*
East Lift Station Force Main Replacement	*WW1801*	n/a			180,000	1,560,000		*1,740,000*
Colleen Drive Gravity Main Replacement	*WW1802*	n/a			70,000	1,010,000		*1,080,000*
South Lift Station Upgrade for Expansion	*WW1901*	n/a				85,000	1,105,000	*1,190,000*
East Lift Station Capacity Upgrade	*WW1902*	n/a				50,000	372,000	*422,000*
Remove Sunset Lift Station	*WW1903*	n/a				177,500		*177,500*
WWTP Clarifier Improvements	*WW1905*	n/a				200,000		*200,000*
Replace UV System	*WW2001*	n/a					2,120,000	*2,120,000*
Wastewater Fund Total			**2,200,000**	**1,500,000**	**1,770,000**	**3,082,500**	**3,597,000**	***12,149,500***
Water Fund								
Center Street Reconstruction (Kane to Grand)	*PW1502*	n/a	56,000					*56,000*
Paint Downtown UG Tank Interior	*WA1601*	n/a	100,000					*100,000*
Replace Raw Water Pumps	*WA1602*	n/a	610,000					*610,000*
Rebuild Two High Service Pumps	*WA1603*	n/a	60,000					*60,000*
Rebuild Flash Mix Transfer Pumps	*WA1701*	n/a		30,000				*30,000*
Replace Plant Generator #1	*WA1702*	n/a		50,000				*50,000*
Rebuild Clearwell Transfer Pumps	*WA1801*	n/a			30,000			*30,000*
SCADA System Upgrades	*WA1802*	n/a			140,000			*140,000*
Water Fund Total			**826,000**	**80,000**	**170,000**			***1,076,000***
GRAND TOTAL			**6,744,700**	**2,940,000**	**3,414,000**	**6,247,500**	**3,597,000**	***22,943,200***

City of Gardner, Kansas

Capital Improvement Plan

2016 thru 2020

PROJECTS BY DEPARTMENT

Department	Project#	Priority	2016	2017	2018	2019	2020	Total
Parks and Recreation								
Senior Center	*FC1603*	n/a	245,000					*245,000*
Trail Reconstruction	*PR1601*	n/a	305,000	275,000	355,000			*935,000*
Greenway Trail Low Water Crossing Replacements	*PR1602*	n/a	202,000					*202,000*
Parks and Recreation Total			**752,000**	**275,000**	**355,000**			***1,382,000***
Public Works								
Salt Storage	*FC1601*	n/a	75,000					*75,000*
City Hall Roof Replacement	*FC1602*	n/a	169,000					*169,000*
Center Street Reconstruction (Kane to Grand)	*PW1502*	n/a	885,000					*885,000*
Center Street Reconstruction (I-35 to Grand)	*PW1601*	n/a	10,000	900,000				*910,000*
Gardner Lake Spillway Replacement	*PW1701*	n/a		40,000	310,000	2,500,000		*2,850,000*
167th and Center Intersection	*PW1702*	n/a		60,000				*60,000*
175th and Waverly Traffic Signal	*PW1703*	n/a		50,000	435,000			*485,000*
Moonlight Road Rehab (I-35 to Buffalo Trail)	*PW1704*	n/a		35,000	338,000			*373,000*
Jamestown Open Channel South of Madison	*PW1801*	n/a			26,000	204,000		*230,000*
Center Street Reconstruction (Main to 167th)	*PW1802*	n/a			10,000	461,000		*471,000*
Public Works Total			**1,139,000**	**1,085,000**	**1,119,000**	**3,165,000**		***6,508,000***
Utilities								
Replacing T-1	*EL1402*	n/a	917,000					*917,000*
Sub 1 Improvements (T2 SWGR)	*EL1505*	n/a	216,700					*216,700*
Sub 4 Land Acquisition	*EL1601*	n/a	350,000					*350,000*
Rebuild Parma OH with UG Installation	*EL1602*	n/a	150,000					*150,000*
Combustion Turbine Generator Diesel Starter Engine	*EL1603*	n/a	100,000					*100,000*
Vibration Monitor	*EL1604*	n/a	80,000					*80,000*
Gen. Control Upgrade	*EL1605*	n/a	70,000					*70,000*
Paint Downtown UG Tank Interior	*WA1601*	n/a	100,000					*100,000*
Replace Raw Water Pumps	*WA1602*	n/a	610,000					*610,000*
Rebuild Two High Service Pumps	*WA1603*	n/a	60,000					*60,000*
Rebuild Flash Mix Transfer Pumps	*WA1701*	n/a		30,000				*30,000*
Replace Plant Generator #1	*WA1702*	n/a		50,000				*50,000*
Rebuild Clearwell Transfer Pumps	*WA1801*	n/a			30,000			*30,000*
SCADA System Upgrades	*WA1802*	n/a			140,000			*140,000*
Gravity Main Replacement - Washington to Madison	*WW1601*	n/a	100,000	1,400,000				*1,500,000*
South Lift Station Storage Tank Construction	*WW1602*	n/a	2,100,000					*2,100,000*
Gravity Main Replacement Madison to Colleen	*WW1701*	n/a		100,000	1,520,000			*1,620,000*
East Lift Station Force Main Replacement	*WW1801*	n/a			180,000	1,560,000		*1,740,000*
Colleen Drive Gravity Main Replacement	*WW1802*	n/a			70,000	1,010,000		*1,080,000*
South Lift Station Upgrade for Expansion	*WW1901*	n/a				85,000	1,105,000	*1,190,000*
East Lift Station Capacity Upgrade	*WW1902*	n/a				50,000	372,000	*422,000*
Remove Sunset Lift Station	*WW1903*	n/a				177,500		*177,500*
WWTP Clarifier Improvements	*WW1905*	n/a				200,000		*200,000*
Replace UV System	*WW2001*	n/a					2,120,000	*2,120,000*

Department	Project#	Priority	2016	2017	2018	2019	2020	Total
Utilities Total			4,853,700	1,580,000	1,940,000	3,082,500	3,597,000	*15,053,200*
GRAND TOTAL			6,744,700	2,940,000	3,414,000	6,247,500	3,597,000	*22,943,200*

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Parks and Recreation
Contact Park and Recreation Director

Project # **FC1603**
Project Name **Senior Center**

Type Improvement
Useful Life 30 years
Category Buildings
Priority n/a
Status Active

Cash or Debt: Cash
Type

Total Project Cost: **$245,000**

Description

The Gardner Senior Center is a community facility that is heavily used on a daily basis throughout the entire year. It serves as a local meals site for the senior population, as well as, a place where a large number of recreation programs are conducted. The building also provides space and amenities for a number of civic, municipal and private meetings and parties. The Senior Center has been averaging 400+ reservations per year.

Justification

Recent inspections indicated a need for multiple renovations for accessibility. ADA improvements are critically important to allow all residents access to this public facility. Improvements include ADA compliant restrooms, kitchen, access doors, parking and sidewalk/ramps. In addition, new flooring, energy saving window treatments, furniture and ceiling/lighting/audio visual enhancements are needed. The city applied for $200,000 in CDBG funding in May 2015 for the ADA upgrades. If awarded, the city will have approximately $245,000 (our contribution is $45K) available in 2016 for these improvements. It should be noted that the CDBG funds are for permanent ADA upgrades while the city funds can be used for 'movable' items such as furnishings, etc.

Expenditures	2016	2017	2018	2019	2020	Total
Construction/Maintenance	245,000					245,000
Total	**245,000**					**245,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Capital Improvement Reserve Fund	45,000					45,000
CDBG	200,000					200,000
Total	**245,000**					**245,000**

Budget Impact/Other

Improvements will need to be made in the future - currently shown on the 20-year timeframe.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Parks and Recreation
Contact Park and Recreation Director

Project # **PR1601**
Project Name **Trail Reconstruction**

Type Improvement
Useful Life 15 years
Category Park Improvements
Priority n/a
Status Active

Cash or Debt: Cash
Type

Total Project Cost: **$935,000**

Description

2015 Madison Street Bicycle/Pedestrian Pathway @ 4,725 l.f.
2015 Winwood Park Trail @1,500 l.f.
2015 Gardner Greenway Trail - Madison to North Loop @ 2,350 l.f.
2016 Gardner Greenway Trail - Madison to Washington with Maple Connector @ 1,450 l.f.
2016 Gardner Greenway Trail - North Loop @ 3,925 l.f.
2016 North Center Street Bicycle/Pedestrian Pathway @ 2,150 l.f.
2017 South Center Street Bicycle/Pedestrian Pathway @ 6,450 l.f.
2017 Stone Creek Park Trail @ 3,350 l.f.

Justification

Most of the asphalt trails were originally constructed without an aggregate base. This combined with extreme weather conditions has created significant damage to most of the trails.

The 2009 Parks Master Plan provides construction specifications for both asphalt and concrete trails. If constructed to these standards, trails will last longer with proper crack sealing and slurry sealing maintenance.

Data collected and entered into Pavement Management System (PMS) February 2015
2015 Madison Street Bicycle/Pedestrian Pathway Avg. PCI is 26 (Very Poor)
2015 Winwood Park Trail Avg. PCI is 26 (Very Poor)
2015 Gardner Greenway Trail - Madison to North Loop Avg. PCI is 26 (Very Poor)
2016 Gardner Greenway Trail - Madison to Washington / Maple Connector Avg. PCI 45 (Poor)
2016 Gardner Greenway Trail - North Loop @ 3,925 l.f. Avg. PCI 52 (Poor)
2016 North Center Street Bicycle/Pedestrian Pathway @ 2,150 l.f. Avg. PCI 66 (Fair)
2017 South Center Street Bicycle/Pedestrian Pathway @ 6,450 l.f. Avg. PCI 77 (Satisfactory)
2017 Stone Creek Park Trail @ 3,350 l.f. Avg. PCI 59 (Fair)

Expenditures	2016	2017	2018	2019	2020	Total
Construction	305,000	275,000	355,000			935,000
Total	**305,000**	**275,000**	**355,000**			**935,000**

Funding Sources	2016	2017	2018	2019	2020	Total
General Fund	305,000	275,000	355,000			935,000
Total	**305,000**	**275,000**	**355,000**			**935,000**

Budget Impact/Other

Once replaced, no maintenance will be required for the first 3 years. Maintenance costs over 10 years for all asphalt trails estimated at $11,299 for crack sealing. If concrete is used, maintenance cost over 10 years would be reduced to an estimated $2,260 over 10 years.

Estimates were generated by using February 2015 market.

Bid documents will include pricing for asphalt and concrete pricing. The Park System Master Plan includes specifications for both.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Parks and Recreation
Contact Park and Recreation Director

Project # **PR1602**
Project Name **Greenway Trail Low Water Crossing Replacements**

Type Improvement
Useful Life 20 years
Category Park Improvements
Priority n/a
Status Active

Cash or Debt: Cash
Type

Total Project Cost: **$202,000**

Description

Remove the two low-water crossings and replace with pedestrian bridges.

Original cost estimates were provided in the Park System Master Plan 2009. Update based on $1,000 per linear foot totaling $176,000 total.

In 2010 a Stream Stability Analysis was completed by Terra Technologies, Inc. As part of the study, it was also recommended that both low water crossings be replaced in addition to some grade control structures being added and cutoff grading to be completed. Total estimated costs outlined in the study equal $183,600.

Justification

The low-water crossings are unsafe and have created water flow problems. New bridges need to be installed above the 25-year floodway. This project has been pushed for several years due to lack of funding.

The Parks System Master Plan, developed by citizens of the community, identifies the need to replace both low water crossings for safety and maintenance purposes.

The project could be split up over two years, but would have an impact on the overall costs for replacement due to having to mobilize crews and heavy equipment multiple times.

Expenditures	2016	2017	2018	2019	2020	Total
Contingency	28,000					28,000
Engineering	33,600					33,600
Construction	140,400					140,400
Total	**202,000**					**202,000**

Funding Sources	2016	2017	2018	2019	2020	Total
General Fund	202,000					202,000
Total	**202,000**					**202,000**

Budget Impact/Other

These improvements would reduce maintenance efforts used to clear the low water crossings of debris.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Public Works
Contact Public Works Director

Project # **FC1601**
Project Name **Salt Storage**

Type Improvement
Useful Life 20 years
Category Street Maintenance
Priority n/a
Status Active

Cash or Debt: Cash
Type

Total Project Cost: **$75,000**

Description

The City is currently renting a barn off of 167th Street to store salt for use during the winter months. The barn will eventually be removed when the land is developed. The City initiated the process for constructing a salt barn at the Meadowbrook Public Works site. The first step (final plat) was begun in 2010 and was finalized and recorded in August of 2013. The next step would be the preparation of a site plan for consideration by the Planning Commission. The site plan will be prepared, once funding for the construction of the salt barn is funded.

Justification

The City's storage capacity is about 700 tons with 500 tons at the rented barn and 200 tons on site. The proposed salt storage will have between 1500 and 2000 ton capacity. The city uses about 1100 tons of salt during an average winter season. As the city grows and residents demand quicker and more complete street treatment (from pre-wetting the pavement to curb-to-curb removal) salt usage will increase.

The storage barn is currently rented through June 2015. It should be noted that the city is contractually obligated to repair any damage to the barn as a result of our usage. Currently repair is needed as salt has corroded metal components in the barn. As we continue to use, additional damage will occur.

As the city now falls under the NPDES Phase II requirements, we are required to ensure 'Good Housekeeping' measures - including salt and equipment under cover. If the PW Operations facility is staying at its current location for the 5+ year timeframe, on-site salt storage is critical. If the Facilities Space-Needs Study recommends moving to a new location in the near future, it will be possible to relocate the majority of the proposed storage facility. Whatever occurs, covered salt storage, at some location, will be required.

Expenditures	2016	2017	2018	2019	2020	Total
Engineering	5,000					5,000
Construction	70,000					70,000
Total	**75,000**					**75,000**

Funding Sources	2016	2017	2018	2019	2020	Total
General Fund	75,000					75,000
Total	**75,000**					**75,000**

Budget Impact/Other

This will bring the salt storage onto the Meadowbrook Public Works site, which will provide centralized storage of the application. This will reduce travel times and distance for loading of salt during winter weather operations. The City spends $6,300 annually to rent salt storage facilities.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Public Works
Contact Public Works Director

Project # **FC1602**
Project Name **City Hall Roof Replacement**

Type Maintenance
Useful Life 20 years
Category Buildings
Priority n/a
Status Active

Cash or Debt: Debt
Type

Total Project Cost: **$169,000**

Description

The original roof at City Hall has deteriorated to a point where replacement is needed. Replacement can probably be held off for 3 to 4 years if yearly maintenance continues to address leaks that develop. In the 3 to 4 year timeframe, patching will no longer suffice and full replacement should be anticipated.

Justification

The original roof was installed on City Hall in 2003. While it was anticipated that the roof would last up to 20 years, the flat roof combined with the exposure to the elements has deteriorated to a point where replacement is needed.

Expenditures	2016	2017	2018	2019	2020	Total
Construction/Maintenance	169,000					169,000
Total	**169,000**					**169,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Debt Service Fund	169,000					169,000
Total	**169,000**					**169,000**

Budget Impact/Other

Once the roof is replaced, there will be minimal yearly maintenance needed. Future principal and interest payments will come from the Debt Service Fund.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Public Works
Contact City Engineer

Project # **PW1502**
Project Name **Center Street Reconstruction (Kane to Grand)**

Type Maintenance
Useful Life 15 years
Category Street Reconstruction
Priority n/a
Status Active

Cash or Debt: Cash
Type

Total Project Cost: **$961,000**

Description

The project will primarily consist of the replacement of existing pavement, curb and gutter, sidewalk, and storm sewer. Street lighting and a new bike trail will also be included in the project scope. In addition, the City has a water main that runs under the pavement parallel to the roadway. Waterline breaks in recent years have resulted in numerous patches to the existing pavement. In conjunction with this project, the waterline will be relocated west of the roadway. CARS funding cannot be used for the utility relocation.

Design will occur in 2015 and construction will take place in 2016. The estimated design cost is $76,000 and will be paid from the Special Street & Highway Fund.

Justification

This section of roadway has been identified in previous CARS submittals as a 2016 project due to its overall poor condition and is in need of reconstruction.

Prior	Expenditures	2016	2017	2018	2019	2020	Total
76,000	Construction/Maintenance	885,000					885,000
Total	**Total**	**885,000**					**885,000**

Prior	Funding Sources	2016	2017	2018	2019	2020	Total
76,000	CARS	340,000					340,000
Total	Federal Highway Administration	100,000					100,000
	Special Highway Fund	389,000					389,000
	Water Fund	56,000					56,000
	Total	**885,000**					**885,000**

Budget Impact/Other

None/Minimal.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Public Works
Contact City Engineer

Project # **PW1601**
Project Name **Center Street Reconstruction (I-35 to Grand)**

Type Maintenance
Useful Life 15 years
Category Street Maintenance
Priority n/a
Status Active

Cash or Debt: Cash
Type

Total Project Cost: **$910,000**

Description

Center street is our main north/south 4-lane arterial. Center Street (Gardner Road) provides direct access to our southern interchange with I-35 and needs to be reconstructed to address maintenance issues, accommodate for growth, and improve traffic flow.

Justification

Center Street (Gardner Rd) between I-35 and Grand Street is critical to our economic and residential growth as a city. This is our main 4-lane north/south arterial with a direct connection to I-35. Commercial activity (farm & home supply chain) will be starting construction on this stretch in 2015 with additional development to follow. Critical for minor reconstruct in 2017 (design work in 2016) to preserve this corridor. Any additional delays will push the cost much higher as much more extensive reconstruction will be required. This reconstruct will include minor base repairs, curb and sidewalk improvements, and mill/overlay. This project ties into a 2016 CARS funded project on Center Street (improvements in 2016 are from the viaduct to Grand).

Expenditures	2016	2017	2018	2019	2020	Total
Planning/Design	10,000					10,000
Construction/Maintenance		900,000				900,000
Total	**10,000**	**900,000**				**910,000**

Funding Sources	2016	2017	2018	2019	2020	Total
CARS		450,000				450,000
Special Highway Fund	10,000	450,000				460,000
Total	**10,000**	**900,000**				**910,000**

Budget Impact/Other

None/Minimal.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Public Works
Contact Public Works Director

Project # **PW1701**
Project Name **Gardner Lake Spillway Replacement**

Type Maintenance
Useful Life 30 years
Category Storm Sewer/Drainage
Priority n/a
Status Active

Cash or Debt: Debt
Type

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

Description

Design and construct a new spillway for the lake and downstream channel improvements.

Justification

From the 2015 High Hazard Dam Inspection Report:

Service Spillway Control Structure: The principal spillway control structure is in poor condition. The concrete is severely spalled and deteriorated. The reinforcing steel is exposed and is corroded. Water was overtopping the spillway at the time of inspection. Downstream of the structure the channel is relatively flat. Further deterioration of the concrete structure would appear to only continue to drop the pool level of the lake and does not immediately threaten the structural integrity. Important to note that it does not 'immediately threaten the structural integrity of the dam - construction is shown in 2019 - 4 years from the date of the report.

Service Spillway Channel: The first 400 feet of the spillway channel is relatively flat and in good condition. No trees or large brush was observed in this vicinity. Eight concrete drop structures are located along the remaining 1,400 feet of the spillway channel. A few of these drop structures are in poor condition. They have been washed out or undermined in places. Broken off segments of the concrete drop structures were observed further downstream. Additionally, this area has numerous trees that have become established that could impede the conveyance of water during flood events or further impair the spillway channel if washed out. The last drop structure or stilling basin has significant portion of the concrete section that has been dislodged and washed downstream.

Expenditures	2016	2017	2018	2019	2020	Total
Contingency				345,000		345,000
Engineering		40,000	310,000			350,000
Construction				2,035,000		2,035,000
Inspection				20,000		20,000
Floodproofing				100,000		100,000
Total		**40,000**	**310,000**	**2,500,000**		**2,850,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Debt Service Fund		40,000	310,000	2,500,000		2,850,000
Total		**40,000**	**310,000**	**2,500,000**		**2,850,000**

Budget Impact/Other

Replacing the spillway will result in manpower savings and the cost of asphalt to patch the spillway. Currently, the spillway road is closed to traffic. Future principal and interest payments will come from the Debt Service Fund.

This project may be eligible for Johnson County (SMAC) funding at 75%. 20 of the 27 homes being protected are in unincorporated Johnson County.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Public Works
Contact Public Works Director

Project # **PW1702**
Project Name **167th and Center Intersection**

Type Improvement
Useful Life 10 years
Category Street Construction
Priority n/a
Status Active

Cash or Debt: Cash
Type

Total Project Cost: **$60,000**

Description

Intersection improvements include installing a 4-way stop sign, signage, and modified striping. Useful life shown as 10 years - could last longer however it is possible that this intersection will need reconstruction/signalization at some point in the future.

Justification

The Transportation Master Plan projected this unsignalized intersection to operate at level of service F during both the a.m. and p.m. peak hours sometime between 2011 and 2016. The heaviest movements at this intersection continue to be the eastbound and westbound through movements on 167th Street- yet with the current geometry, these would be the only movements required to stop. Resulting delays are projected to be significant using the 2015 baseline. All-way stop control will result in acceptable level of service C during both peak periods.

It should be noted that with the downturn in development, the increase in traffic has not yet reached anticipated levels. However, increased development in Megan Valley (west) and 32 lots with Copper Springs III (east) in 2015 will cause increased traffic volumes on 167th. Staff does anticipate these improvements being warranted in the future.

Expenditures	2016	2017	2018	2019	2020	Total
Contingency		10,000				10,000
Engineering		5,000				5,000
Construction		30,000				30,000
Utility Relocation		15,000				15,000
Total		**60,000**				**60,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Special Highway Fund		60,000				60,000
Total		**60,000**				**60,000**

Budget Impact/Other

The estimated annual operations and maintenance cost of a traffic signal is $6,000.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Public Works
Contact Public Works Director

Project # **PW1703**
Project Name **175th and Waverly Traffic Signal**

Type Improvement
Useful Life 20 years
Category Street Construction
Priority n/a
Status Active

Cash or Debt: Cash
Type

Total Project Cost: **$485,000**

Description

The intersection needs to be signalized and left turn lanes should be added once warrants for a signal are met. A significant challenge is the high pressure gas main/controls on the NW corner. This may require that the intersection be shifted slightly south to avoid impact.

Justification

In 2015 we are starting to see increased development (another phase of Waverly Pointe just to the east) and the large vacant property at the NE corner of this intersection is being looked at for substantial commercial possibilities. This intersection also experiences significant flooding and closures during heavy rain events. The northbound and southbound approaches are projected to fail under the current configuration.

Expenditures	2016	2017	2018	2019	2020	Total
Contingency			35,000			35,000
Engineering		50,000				50,000
Construction			350,000			350,000
Utility Relocation			50,000			50,000
Total		**50,000**	**435,000**			**485,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Special Highway Fund		50,000	435,000			485,000
Total		**50,000**	**435,000**			**485,000**

Budget Impact/Other

The estimated annual operations and maintenance cost of a traffic signal is $6,000.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Public Works
Contact City Engineer

Project # **PW1704**
Project Name **Moonlight Road Rehab (I-35 to Buffalo Trail)**

Type Maintenance
Useful Life 15 years
Category Street Reconstruction
Priority n/a
Status Active

Cash or Debt: Cash
Type

Total Project Cost: **$373,000**

Description

Some of the improvements have been made with previous projects including the Grand and Moonlight intersection with USD231 Benefit District. Depending on development, certain improvements will be needed (mill/overlay, widen ditches, etc.) south of Grand. There has been discussion of a new interchange at Moonlight. With very limited city and state funding available, combined with the process to get approval and construct, it will be 7 to 11 years before the interchange is built. The road will need improvements before this.

Justification

Improvements are needed for this rural roadway section before an interchange can be built at Moonlight. The road will remain a 2-lane section unless development dictates otherwise. This project is expected to have CARS funding for 50% of the construction costs.

Expenditures	2016	2017	2018	2019	2020	Total
Planning/Design		35,000				35,000
Construction/Maintenance			338,000			338,000
Total		**35,000**	**338,000**			**373,000**

Funding Sources	2016	2017	2018	2019	2020	Total
CARS			164,000			164,000
Special Highway Fund		35,000	174,000			209,000
Total		**35,000**	**338,000**			**373,000**

Budget Impact/Other

There will be additional labor and maintenance associated with the new infrastructure; however, costs for mowing the right-of-way and maintaining the drainage ditches will be reduced.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Public Works
Contact Public Works Director

Project # **PW1801**
Project Name **Jamestown Open Channel South of Madison**

Type Improvement
Useful Life 30 years
Category Storm Sewer/Drainage
Priority n/a
Status Active

Cash or Debt: Debt
Type

Total Project Cost: **$230,000**

Description

An open, engineered channel conveys stormwater runoff through the rear yards of 14 single family lots south of Madison Street and 11 lots north of Madison Street. The stormwater is collected from an undeveloped field located south of Jamestown, and then conveyed northerly via an open channel to an enclosed storm sewer system at Lanesfield Street.

The recommended solution would be to install two 48-inch HDPEs from the southern
boundary of Jamestown to the enclosed system immediately west of Center Street. Depending on the capacity of the downstream storm sewer, a surcharge structure may be required at the connection to the Center Street storm sewer network.

Justification

The open channel on the south side of Madison continually silts in. Additionally, the existing stacked stone retaining walls on both sides have voids behind it that are a safety hazard. This is an ongoing maintenance problem. The open channel system is located on private residential lots; however, the residents have been contacting the City for maintenance since there is no HOA to maintain this facility.

This improvement would reduce safety risks caused by the condition of the retaining walls.

Expenditures	2016	2017	2018	2019	2020	Total
Contingency				17,000		17,000
Engineering			26,000			26,000
Construction				170,000		170,000
Inspection				17,000		17,000
Total			**26,000**	**204,000**		**230,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Debt Service Fund			26,000	204,000		230,000
Total			**26,000**	**204,000**		**230,000**

Budget Impact/Other

Future principal and interest payments will come from the Debt Service Fund.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Public Works
Contact City Engineer

Project # **PW1802**
Project Name **Center Street Reconstruction (Main to 167th)**

Type Maintenance
Useful Life 15 years
Category Street Reconstruction
Priority n/a
Status Active

Cash or Debt: Cash
Type

Total Project Cost: **$471,000**

Description

The road varies from a 2 lane section to a 4 lane section between US 56 (Main) and 167th Street. This road is one of the city's main north/south arterials and reconstruction is needed. With the length and varying width of the road, this is a fairly involved and expensive project.

Justification

Partial road reconstruction is needed to protect one of the city's two main north/south arterials. However, it is critical for asset/infrastructure management, economic development, quality of life and fiscal stewardship (all 4 of the City Council's goals).

Failure to reconstruct sections of the road (some base patching, curb replacement, mill/overlay and striping) will create the need for complete reconstruction.

Expenditures	2016	2017	2018	2019	2020	Total
Planning/Design			10,000			10,000
Construction/Maintenance				461,000		461,000
Total			**10,000**	**461,000**		**471,000**

Funding Sources	2016	2017	2018	2019	2020	Total
CARS				230,500		230,500
Special Highway Fund			10,000	230,500		240,500
Total			**10,000**	**461,000**		**471,000**

Budget Impact/Other

None/Minimal.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **EL1402**
Project Name **Replacing T-1**

Type Maintenance
Useful Life 40 years
Category Electric Generation
Priority n/a
Status Active

Cash or Debt: Debt
Type

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

Description

Transformer No. 1 at Substation No. 1 is rated at 69 megawatts (mW) and is used to step-up the voltage of electricity produced by the generators to transmission voltage. An engineering firm was retained in September 2014 to prepare bid documents for the replacement transformer. Bids must be requested in early 2015 to ensure the delivery of a new transformer in 2015 due to long manufacturing lead times. The estimated cost of the replacement transformer is $1M.

The project also includes the replacement of the main substation breaker at Substation No. 1 at an estimated cost of $200,000. The current substation main breaker consists of three oil filled breaker units that were manufactured in 1957. The replacement breaker will be bid separately from the replacement transformer.

Justification

Transformer 1 is approximately 40 years old and uses a membrane system to separate water from condensation from the transformer oil. The membrane has failed three times over the past 15 years. Replacement membranes, available only from a European supplier, cost approximately $6,000 plus installation and oil filtering costs.

The existing main breakers were manufactured in 1957 and have issues with the insulation of the bushings that connect to the transmission line. The insulation issue has been somewhat mitigated because the breakers are rated at a much higher voltage than the voltage of the City's transmission line. The breakers also contain 1350 gallons of oil. The replacement breakers, which do not require oil, will eliminate the oil spill risk.

Prior	Expenditures	2016	2017	2018	2019	2020	Total
83,000	Contingency	89,245					89,245
Total	Engineering	15,000					15,000
	Construction	662,755					662,755
	Demolition/Removal	150,000					150,000
	Total	**917,000**					**917,000**

Prior	Funding Sources	2016	2017	2018	2019	2020	Total
83,000	Electric Fund	917,000					917,000
Total	**Total**	**917,000**					**917,000**

Budget Impact/Other

Debt financing is recommended for this project because both the transformer and breaker have useful lives that exceed 20 years. Cash payment is not recommended.
Future principal and interest payments will come from the Electric Fund.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **EL1505**
Project Name **Sub 1 Improvements (T2 SWGR)**

Type Maintenance
Useful Life 20 years
Category Electric Generation
Priority n/a
Status Active

Cash or Debt: Cash
Type

Total Project Cost: **$250,000**

Description

The project will continue the upgrades to the Substation 1 control system that were begun during repairs to the damage caused by the September 2013 short circuit and fire caused by an animal. In 2015, the project includes the engineering and materials required to replace the existing electro-mechanical protective distribution relays with digital relays. In 2016, the project includes engineering and materials required to replace the existing electro-mechanical protective generator relays with digital relays. The project is phased to coincide with staff capacity to manage and perform the installation of materials.

Engineering services will be contracted. Staff will perform the installation of the materials and relays. The prior work includes engineering, testing services, and materials required to repair the substation control system.

Justification

This project will improve system reliability.

Prior	Expenditures	2016	2017	2018	2019	2020	Total
33,300	Maintenance	216,700					216,700
Total	**Total**	**216,700**					**216,700**

Prior	Funding Sources	2016	2017	2018	2019	2020	Total
33,300	Electric Fund	216,700					216,700
Total	**Total**	**216,700**					**216,700**

Budget Impact/Other

None/Minimal.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **EL1601**
Project Name **Sub 4 Land Acquisition**

Type Land Acquistion
Useful Life Unlimited
Category Electric Generation
Priority n/a
Status Active

Cash or Debt: Cash
Type

Total Project Cost: **$350,000**

Description

Substation 4 is to be located east of I-35 to serve future development.

Justification

A fourth substation will be needed to serve growth east of I-35 and should be purchased prior to development to preserve a location for this substation.

Expenditures	2016	2017	2018	2019	2020	Total
Land Acquisition	350,000					350,000
Total	**350,000**					**350,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Electric Fund	350,000					350,000
Total	**350,000**					**350,000**

Budget Impact/Other

Minimal, if any, impact to future operating budgets. The project will be cash funded from the Electric Fund.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **EL1602**
Project Name **Rebuild Parma OH with UG Installation**

Type Maintenance
Useful Life 20 years
Category Electric Distribution
Priority n/a
Status Active

Cash or Debt: Cash
Type

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

Description

This project will upgrade ½ mile of 155 amp three phase feeder circuit with 230 amp capacity. The feeder circuit is located in easements behind the lots west of North Cottonwood between 167th Street and Parma Way, north of Parma Way to North White Drive, west of North White Drive to the south side of Winwood Park, and then east to the west side of Farrington Place Subdivision. The project includes replacing 7/16 mile of overhead line and replacing the wire in 1/16 mile of underground conduit located west of White Drive in the Winwood Place Subdivision. The project includes replacing the entire overhead line with underground installation.

Justification

The overhead line that will be replaced was installed in the 1960's and is due for replacement due to aging poles and limited current capacity due to wire size. The 230 amp capacity of the reconstructed line is set by the maximum wire size that can be installed in existing conduit in the underground section in Winwood Park. This line, when reconstructed, will provide an alternate path to serve customers in Fountain Gate and Gardner Heights.

Expenditures	2016	2017	2018	2019	2020	Total
Materials	150,000					150,000
Total	**150,000**					**150,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Electric Fund	150,000					150,000
Total	**150,000**					**150,000**

Budget Impact/Other

None/Minimal.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Electric Division Manager

Project # **EL1603**
Project Name **Combustion Turbine Generator Diesel Starter Engine**

Type Equipment
Useful Life 30 years
Category Electric Generation
Priority n/a
Status Active

Cash or Debt: Cash
Type

Total Project Cost: **$100,000**

Description

The City owns and operates two Combustion Turbine Generators (CTG). CTG No. 1 is equipped with a V-8 diesel powered starter motor and CTG No. 2 is equipped with an electric starter motor. This project includes the cost to purchase and install a new diesel starter motor for CTG No. 1. CTG's equipped with diesel starter motors can be started in the event of a total power loss, i.e., the City loses its connection to the KCPL transmission system. CTG's equipped with diesel starter motors are called "black start" units.

Justification

The diesel starter motor CTG 1 was manufactured in 1968 which is the date of manufacture for both CTG's. The unit has been retrofitted to improve emissions, but, with age and usage, it has lost power and knocking.

Expenditures	2016	2017	2018	2019	2020	Total
Materials	50,000					50,000
Installation	40,000					40,000
Contingency	10,000					10,000
Total	**100,000**					**100,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Electric Fund	100,000					100,000
Total	**100,000**					**100,000**

Budget Impact/Other

The project will be cash funded from the Electric Fund. The engine is expensive because of its special application and the fact that it must operate at a non-standard engine speed to synchronize with the generator clutch mechanism. The installation includes the cost disassembly of the generator enclosure structure to gain access to the starter and the cost of the millwrights needed to perform the work.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **EL1604**
Project Name **Vibration Monitor**

Type Maintenance
Useful Life 30 years
Category Electric Generation
Priority n/a
Status Active

Cash or Debt: Cash
Type

Total Project Cost: **$80,000**

Description

The control system for the City's combustion turbine generators operates with vibration monitors which protect the machine from catastrophic vibration. This project will place a vibration system into operation to protect the machine from excessive and destructive vibration.

Justification

The project will improve reliability, simplify upgrades and maintenance, and would coordinate with the controls system.

Expenditures	2016	2017	2018	2019	2020	Total
Equip/Vehicles/Furnishings	75,000					75,000
Engineering	5,000					5,000
Total	**80,000**					**80,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Electric Fund	80,000					80,000
Total	**80,000**					**80,000**

Budget Impact/Other

None/Minimal.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **EL1605**
Project Name **Gen. Control Upgrade**

Type Maintenance
Useful Life 20 years
Category Electric Generation
Priority n/a
Status Active

Cash or Debt: Cash
Type

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

Description

The control system for each of the City's combustion turbine generators will be upgraded by installing updated equipment and reprogramming. Since the work will require a generator outage, the project is phased over two years so that only one generator would be out of service at a time. The outage would coincide with the replacements of the gas regulator valve and the fuel regulator.

Justification

Updating the control system would increase reliability, simplify upgrades and maintenance, and would coordinate with the replacement of the fuel regulator. A substantial amount of the project cost will be for the controls engineer to install and program the new components.

Prior	Expenditures	2016	2017	2018	2019	2020	Total
70,000	Engineering	70,000					70,000
Total	**Total**	**70,000**					**70,000**

Prior	Funding Sources	2016	2017	2018	2019	2020	Total
70,000	Electric Fund	70,000					70,000
Total	**Total**	**70,000**					**70,000**

Budget Impact/Other

Minimal, if any, impact to future operating budgets. The project will be cash funded from the Electric Fund.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **WA1601**
Project Name **Paint Downtown UG Tank Interior**

Type Maintenance
Useful Life 15 years
Category Water
Priority n/a
Status Active

Cash or Debt: Cash
Type

Total Project Cost: **$100,000**

Description

Paint the interior of the underground tank at Shawnee and Sycamore. The 2015 Water Utility Assessment (Section 5.1.13) states the tank is in need of painting, visual inspection and cleaning. It also discusses the future need for lining the tank due to leakage. This will be programmed in the out years once we determine if this tank will remain in service for the long-term.

Justification

The tank was last painted in approximately 1995. Tank paint generally lasts about 15 years, and inspection shows that the tank is showing the age of the paint. The tank will begin to sustain damage within another year of so if it is not painted.

The 2015 Water Utility Assessment (Section 5.1.13) states the tank is in need of painting, visual inspection and cleaning.

Expenditures	2016	2017	2018	2019	2020	Total
Materials	100,000					100,000
Total	**100,000**					**100,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Water Fund	100,000					100,000
Total	**100,000**					**100,000**

Budget Impact/Other

Although hard to quantify, painting the tank at regular intervals can extend the life to at least 50 years. Current age is not known, but it doesn't appear to be older than 20 years at this time. This project will not add to ongoing operating costs.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **WA1602**
Project Name **Replace Raw Water Pumps**

Type Maintenance
Useful Life 15 years
Category Water
Priority n/a
Status Active

Cash or Debt: Cash
Type

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

Description

City has three (3) raw water pumps at our intake at Hillsdale Lake. Currently, we have three 125HP Fairbanks Morse submersible pumps. As identified in the 2015 Water Utility Assessment (Section 5.1.2), these pumps are reaching their expected life. Pumps have been rebuilt in the past and are at the stage where they are becoming a continual maintenance issue for staff at the WTP.

It is staff's recommendation that the submersible pumps be replaced with vertical turbine pumps and VFDs (variable frequency drives).

Justification

As identified in the 2015 Water Utility Assessment, these pumps are reaching their expected life. Pumps have been rebuilt in the past and are at the stage where they are becoming a continual maintenance issue for staff at the WTP. Every summer, usually during peak demand, one or two pumps have to be pulled for service. Failure at a critical time could be catastrophic for our system. A new, reliable set of pumps is needed to help ensure an uninterrupted supply of raw water to our treatment plant.

Expenditures	2016	2017	2018	2019	2020	Total
Construction/Maintenance	610,000					610,000
Total	**610,000**					**610,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Water Fund	610,000					610,000
Total	**610,000**					**610,000**

Budget Impact/Other

None/Minimal.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **WA1603**
Project Name **Rebuild Two High Service Pumps**

Type Maintenance
Useful Life 10 years
Category Water
Priority n/a
Status Active

Cash or Debt: Cash
Type

Total Project Cost: **$60,000**

Description

The WTP has 3 high service pumps that pump treated water into our distribution system. Two are original with the plant (1993) and the third was added in 2006 - likely with the plant expansion from 2mgd to 4mgd. The original two pumps are 150HP while the third is 200HP. All three are vertical turbine pumps.

Justification

The two original pumps (1993 vintage) are due to be rebuilt (as of 2016 they will have been in service for 23 years). Critical for infrastructure/asset management to complete this rebuild in 2016.

Expenditures	2016	2017	2018	2019	2020	Total
Construction/Maintenance	60,000					60,000
Total	**60,000**					**60,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Water Fund	60,000					60,000
Total	**60,000**					**60,000**

Budget Impact/Other

None/Minimal.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **WA1701**
Project Name **Rebuild Flash Mix Transfer Pumps**

Type Maintenance
Useful Life 10 years
Category Water
Priority n/a
Status Active

Cash or Debt: Cash
Type

Total Project Cost: **$30,000**

Description

Flash mix transfer pumps (2 - 15HP pumps) were installed in 2006 and are used to pump water from the carbon contact basin to the clarifiers.

Justification

Pump life is 10 to 12 years before rebuild is necessary. Per Section 5.1.3 of the Water Utility Assessment, pumps were installed in 2006 (corresponds to the upsizing of the WTP from 2 to 4mgd). In 2017 the pumps will have been in-service for 11 years and will need to be rebuilt.

Expenditures	2016	2017	2018	2019	2020	Total
Construction/Maintenance		30,000				30,000
Total		**30,000**				**30,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Water Fund		30,000				30,000
Total		**30,000**				**30,000**

Budget Impact/Other

None/Minimal.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **WA1702**
Project Name **Replace Plant Generator #1**

Type Improvement
Useful Life 15 years
Category Water
Priority n/a
Status Active

Cash or Debt: Cash
Type

Total Project Cost: **$50,000**

Description

The two backup generators at the WTP are not sufficient to handle the entire plant load. Currently there are 'Kohler' and 'Katolight' backup generators. Kohler from 1996 and Katolight from 2006.

Justification

The Katolight (manufacturer) generator requires frequent maintenance and repairs. As stated in Section 5.1.9 of the Water Utility Assessment, the city needs to consider replacing the backup generation with a system that will actually run the plant.

NOTE: Staff does perform weekly load tests and preventative maintenance on this system.

Expenditures	2016	2017	2018	2019	2020	Total
Equip/Vehicles/Furnishings		50,000				50,000
Total		**50,000**				**50,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Water Fund		50,000				50,000
Total		**50,000**				**50,000**

Budget Impact/Other

None/Minimal.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **WA1801**
Project Name **Rebuild Clearwell Transfer Pumps**

Type Maintenance
Useful Life 10 years
Category Water
Priority n/a
Status Active

Cash or Debt: Cash
Type

Total Project Cost: **$30,000**

Description

Pumps used to transfer water from the chlorine contact basin to the clearwell. Consists of 3 - 15HP pumps operated in a 2duty/1standby mode. Pumps installed in 1998.

Justification

Pumps were installed in 1998 and will be 20 years old as of 2018 when this schedule shows they are to be rebuilt. Pumps will be closely monitored incase an earlier rebuild is needed.

Expenditures	2016	2017	2018	2019	2020	Total
Construction/Maintenance			30,000			30,000
Total			**30,000**			**30,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Water Fund			30,000			30,000
Total			**30,000**			**30,000**

Budget Impact/Other

None/Minimal.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Project # **WA1802**

Project Name **SCADA System Upgrades**

Cash or Debt: Cash

Type

Department Utilities

Contact Utility Director

Type Improvement

Useful Life 10 years

Category Water

Priority n/a

Status Active

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

Description

SCADA - Supervisory Control and Data Acquisition: WTP uses Wonderware software for monitoring the entire water system (intake, plant functions, towers, tanks, etc. New in 2006 - technology has made huge advancements since then.

Justification

2006 technology needs updating by 2018. System is getting older and monitoring all aspects of the plant is becoming more and more critical (both because of age and increasing state and federal regulations associated with potable water). Old system is obsolete and parts are not available to repair.

Expenditures	2016	2017	2018	2019	2020	Total
Equip/Vehicles/Furnishings			140,000			140,000
Total			**140,000**			**140,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Water Fund			140,000			140,000
Total			**140,000**			**140,000**

Budget Impact/Other

None/Minimal.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **WW1601**
Project Name **Gravity Main Replacement - Washington to Madison**

Type Improvement
Useful Life 40 years
Category Wastewater
Priority n/a
Status Active

Cash or Debt: Debt
Type

Total Project Cost: **$1,500,000**

Description

Replace the gravity main between Washington and Madison Streets near White Drive to Madison near White.

Design is proposed to begin in 2016 with construction in 2017.

Justification

Gravity main is undersized for expected flows at current and full build out. Development of unannexed properties south of the BNSF RR will not be possible until this project is complete, along with the follow-up projects from BNSF at White to Washington, and from Madison near White to Colleen near Center. No additional development can be permitted in the East Lift station basin or in the gravity basin above the BNSF crossing until this and related projects are complete. Design should begin at least a year prior to the construction. Project identified by staff and confirmed by the 2009 Wastewater Master Plan.

This will replace several pipe runs that are over 50 years old. In addition, it will add capacity to allow development of the unincorporated area south of the BNSF tracks and other areas south of US 56. The project is tied to the completion of those indicated in the Justification section.

Expenditures	2016	2017	2018	2019	2020	Total
Planning/Design	100,000					100,000
Contingency		200,000				200,000
Engineering		100,000				100,000
Construction		1,100,000				1,100,000
Total	**100,000**	**1,400,000**				**1,500,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Wastewater Fund	100,000	1,400,000				1,500,000
Total	**100,000**	**1,400,000**				**1,500,000**

Budget Impact/Other

This project will create an estimated $2,000 in savings each year due to lower expenditures for chemicals and repair work. Future principal and interest payments will come from the Wastewater Fund.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **WW1602**
Project Name **South Lift Station Storage Tank Construction**

Type Improvement
Useful Life 30 years
Category Wastewater
Priority n/a
Status Active

Cash or Debt: Debt
Type

Total Project Cost: **$3,530,000**

Description

Construct a 500,000 gallon storage tank at the South Lift Station, with plans for expansion to 2,600,000 gallons of storage . This will provide the storage needed to buffer the flows. This tank will be needed when the peak flow exceeds 2500 gpm.

Justification

The pumping capacity of the S. lift station is 2500 gpm, the lift station is currently at capacity. Once the peak flow exceeds this level, there could be significant backups near the lift station. Flows are expected to exceed that volume with the continued development of the lift station service area. Flow records will confirm the need for the addition of the tank, prior to construction. This is a high priority project due to the expected development in the basin. Project identified by staff and confirmed by the 2009 Wastewater Master Plan.

Expenditures	2016	2017	2018	2019	2020	Total	Future
Contingency	300,000					300,000	1,430,000
Engineering	150,000					150,000	Total
Construction	1,650,000					1,650,000	
Total	**2,100,000**					**2,100,000**	

Funding Sources	2016	2017	2018	2019	2020	Total
Wastewater Fund	2,100,000					2,100,000
Total	**2,100,000**					**2,100,000**

Budget Impact/Other

Periodic maintenance on the tank may average $10,000 per year for painting and upkeep. Future principal and interest payments will come from the Wastewater Fund.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **WW1701**
Project Name **Gravity Main Replacement Madison to Colleen**

Type Improvement
Useful Life 40 years
Category Wastewater
Priority n/a
Status Active

Cash or Debt: Debt
Type

Total Project Cost: **$1,620,000**

Description

Replace the gravity main between Madison Street and Colleen Street near White Drive.

Design is proposed to begin in 2017 with construction in 2018.

Justification

Gravity main is undersized for expected flows at current and full build out. Development of unannexed properties south of the BNSF RR will not be possible until this project is complete, along with the follow-up projects from BNSF at White to Washington, and from Madison near White to Colleen near Center. No additional development can be permitted in the East Lift station basin or in the gravity basin above the BNSF crossing until this and related projects are complete. Design should begin at least a year prior to the construction. The project was identified by staff and confirmed by the 2009 Wastewater Master Plan.

This will replace several pipe runs that are over 50 years old. In addition, it will add capacity to allow development of the unincorporated area south of the BNSF tracks and other areas south of US 56.

Expenditures	2016	2017	2018	2019	2020	Total
Planning/Design		100,000				100,000
Contingency			200,000			200,000
Engineering			100,000			100,000
Construction			1,220,000			1,220,000
Total		**100,000**	**1,520,000**			**1,620,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Wastewater Fund		100,000	1,520,000			1,620,000
Total		**100,000**	**1,520,000**			**1,620,000**

Budget Impact/Other

This project will create an estimated $2,000 in savings each year due to lower expenditures for chemicals and repair work. Future principal and interest payments will come from the Wastewater Fund.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **WW1801**
Project Name **East Lift Station Force Main Replacement**

Type Improvement
Useful Life 40 years
Category Wastewater
Priority n/a
Status Active

Cash or Debt: Debt
Type

Total Project Cost: **$1,740,000**

Description

Replace the force main from the East Lift Station to the Gravity crossing on the BNSF. This will divert all East Lift Station flows from a split between the South Lift Station and the North Lift Station so that all flows go to the North Lift Station. The North Lift Station is designed to receive these flows, but the South Lift Station is not. The size of the force main and the volume of flow is not known at this time and will require study to determine the need.

Ultimate flow for the East Lift Station is approximately 4000 gallons/minute. Currently the station can only pump 120 gallons/minute to the North Lift Station and 180 gallons/minute to the South Lift Station. There is additional area still undeveloped in the basin that could generate 2000 gallons/minute or more, and is included in the 4000 gallons/minute. This means that the force main must be upgraded to handle the capacity of the East Lift Station.

Justification

The east lift station force main is significantly undersized for the current development in the basin. Currently the flows from the East Lift Station are split between the North Lift Station and the South Lift Station. This allows the east lift station to function adequately for the next several years. However, the South Lift Station is not designed to receive these flows, and development in the South Lift Station basin is limited by the amount of flow received from the E. lift station. In addition, a second storage tank is required at the East Lift Station unless this force main is upgraded. Upgrading the force main and the pumps for the East Lift Station should be cheaper than building the storage tank. Project identified by staff and confirmed by 2009 Wastewater Master Plan.

Expenditures	2016	2017	2018	2019	2020	Total
Planning/Design			180,000			180,000
Contingency				240,000		240,000
Engineering				120,000		120,000
Construction				1,200,000		1,200,000
Total			**180,000**	**1,560,000**		**1,740,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Wastewater Fund			180,000	1,560,000		1,740,000
Total			**180,000**	**1,560,000**		**1,740,000**

Budget Impact/Other

Future principal and interest payments will come from the Wastewater Fund.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **WW1802**
Project Name **Colleen Drive Gravity Main Replacement**

Type Improvement
Useful Life 40 years
Category Wastewater
Priority n/a
Status Active

Cash or Debt: Debt
Type

Total Project Cost: **$1,080,000**

Description

Replace the gravity main south of Colleen Drive between White Drive and Center Street.

Design is proposed to begin in 2018 with construction in 2019.

Justification

Gravity main is undersized for expected flows at current and full build out. Development of unannexed properties south of the BNSF railroad will not be possible until this project is complete, along with the follow-up projects from BNSF at White to Washington, and from Madison near White to Colleen near Center. No additional development can be permitted in the East Lift station basin or in the gravity basin above the BNSF crossing until this and related projects are complete. Design should begin at least a year prior to the construction. Project identified by staff and confirmed by the 2009 Wastewater Master Plan.

This will replace several pipe runs that are over 50 years old. In addition, it will add capacity to allow development of the unincorporated area south of the BNSF tracks and other areas south of US 56.

Expenditures	2016	2017	2018	2019	2020	Total
Planning/Design			70,000			70,000
Contingency				140,000		140,000
Engineering				70,000		70,000
Construction				800,000		800,000
Total			**70,000**	**1,010,000**		**1,080,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Wastewater Fund			70,000	1,010,000		1,080,000
Total			**70,000**	**1,010,000**		**1,080,000**

Budget Impact/Other

This project will create an estimated $2,000 in savings each year due to lower expenditures for chemicals and repair work. Future principal and interest payments will come from the Wastewater Fund.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **WW1901**
Project Name **South Lift Station Upgrade for Expansion**

Type Improvement
Useful Life 20 years
Category Wastewater
Priority n/a
Status Active

Cash or Debt: Debt
Type

Total Project Cost: **$1,190,000**

Description

Install new pumps at the South Lift Station, with other attendant equipment additions. This will increase capacity at the South Lift Station to accommodate expanding our service area to 199th Street, 1/2 mile either side of Center Street.

Justification

A request for service has been received by staff in the area south of Nike School. As this is prime development ground, more requests are anticipated in the future. With the development of the full South basin and with this added drainage area, the South Lift Station will need a major upgrade. The current projection is for a total peak flow of over 10,000 gpm. Project identified by the 2009 Wastewater Master Plan.

Expenditures	2016	2017	2018	2019	2020	Total
Planning/Design					85,000	85,000
Contingency					170,000	170,000
Engineering				85,000		85,000
Construction					850,000	850,000
Total				**85,000**	**1,105,000**	**1,190,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Wastewater Fund				85,000	1,105,000	1,190,000
Total				**85,000**	**1,105,000**	**1,190,000**

Budget Impact/Other

Future principal and interest payments will come from the Wastewater Fund.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **WW1902**
Project Name **East Lift Station Capacity Upgrade**

Type Improvement
Useful Life 30 years
Category Wastewater
Priority n/a
Status Active

Cash or Debt: Debt
Type

Total Project Cost: **$422,000**

Description

Ultimate flow for the East Lift Station is approximately 4000 gallons/minute. Currently the facility can only pump 120 gallons/minute to the North Lift Station and 180 gallons/minute to the South Lift Station. There is additional area still undeveloped in the basin that could generate 2000 gallons/minute or more, and is included in the 4000 gallons/minute. This means that the force main must be upgraded to handle the capacity of the East Lift Station. Projected capacity need is 1250 gpm.

Justification

Currently the flows from the East Lift Station are split between the North Lift Station and the South Lift Station. The South Lift Station is not designed to receive these flows, and development in the South Lift Station basin is limited by the amount of flow received from the E. lift station, along with other factors. In addition, a second storage tank is required at the East Lift Station unless the capacity is upgraded. Upgrading the capacity for the East Lift Station should be cheaper than building the storage tank. Project identified by staff and confirmed by the 2009 Wastewater Master Plan.

Much of the flow from the East Lift station is sent to the South lift station, and will overload the South lift station as the South basin develops. Upgrading the capacity of the East Lift Station will keep from overloading both the South lift and the new Bull Creek lift stations in their current configurations. The addition of holding tanks at both locations can also be postponed if this force main and the attendant gravity mains are upsized.

Expenditures	2016	2017	2018	2019	2020	Total
Planning/Design				50,000		50,000
Contingency					31,000	31,000
Engineering					31,000	31,000
Construction					310,000	310,000
Total				**50,000**	**372,000**	**422,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Wastewater Fund				50,000	372,000	422,000
Total				**50,000**	**372,000**	**422,000**

Budget Impact/Other

Future principal and interest payments will come from the Wastewater Fund.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **WW1903**
Project Name **Remove Sunset Lift Station**

Type Improvement
Useful Life Unlimited
Category Wastewater
Priority n/a
Status Active

Cash or Debt: Debt
Type

Total Project Cost: **$177,500**

Description

Install gravity lines and remove the lift station on Sunset Street at about 170th Street.

Justification

The lift station was built in a location that can be served with gravity sewer, although it will require acquiring some easements. The current station is overloaded to the point where it cannot readily be upgraded. The cost is significant to remove it, but so is the full replacement cost and the annual maintenance cost. There is a high potential for backups due to the lack of capacity. No backups have occurred to date, but the station is significantly undersized. There are other stations that can be eliminated before this one due to the cost, but eliminating this lift station should be considered as soon as funds permit. Project identified the 2009 Wastewater Master Plan. Project costs revised by staff.

Expenditures	2016	2017	2018	2019	2020	Total
Planning/Design				15,000		15,000
Land Acquisition				25,000		25,000
Contingency				20,500		20,500
Engineering				12,000		12,000
Construction				105,000		105,000
Total				**177,500**		**177,500**

Funding Sources	2016	2017	2018	2019	2020	Total
Wastewater Fund				177,500		177,500
Total				**177,500**		**177,500**

Budget Impact/Other

Maintenance cost savings on the lift station would offset the cost of the gravity lines within 25 years. The cost of maintenance per lift station is approximately $20,000/station for this type of station. Future principal and interest payments will come from the Wastewater Fund.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **WW1905**
Project Name **WWTP Clarifier Improvements**

Type Maintenance
Useful Life 20 years
Category Wastewater
Priority n/a
Status Active

Cash or Debt: Cash
Type

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

Description

Clarifiers are used to help settle the biological solids in the treatment process. The clarifiers are large circular basins located outside (exposed to the elements) and they experience continuous flow. Components need to be rebuilt and system is susceptible to algae growth. Clarifier improvements include covers and scrubber replacement.

Justification

As identified in the 2015 Wastewater Utility Assessment (Section 5.1.5), the center drives have been rebuilt once and damage has occurred to a scraper arm. The launder brush arms and brushes are worn and do not effectively remove algae. Manual cleaning is a safety issue.

The assessment recommends Launder Covers ($140,000) and replacement of scrubber and scrubber arms ($60,000) to help mitigate algae growth.

Expenditures	2016	2017	2018	2019	2020	Total
Maintenance				200,000		200,000
Total				**200,000**		**200,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Wastewater Fund				200,000		200,000
Total				**200,000**		**200,000**

Budget Impact/Other

None/Minimal.

Capital Improvement Plan

2016 *thru* **2020**

City of Gardner, Kansas

Department Utilities
Contact Utility Director

Project # **WW2001**
Project Name **Replace UV System**

Type Improvement
Useful Life 20 years
Category Wastewater
Priority n/a
Status Active

Cash or Debt: Debt
Type

Total Project Cost: **$2,120,000**

Description

UV disinfection is a physical process that neutralizes microorganisms as they pass by ultraviolet lamps submerged in the effluent. Plant currently has two 4.5MGD closed chamber units oriented perpendicular to the incoming flow.

Justification

Current system (2001/2002 timeframe) experiences frequent breaks during high flows causing water to leak into the lower level of the building - also averaging $4k in bulb replacement each year along with continual ohm resistor replacement.

The 2015 Wastewater Utility Assessment (5.1.8) recommended replacement of the UV system. This replacement should consider closed-chamber unit containing lamps that are parallel to the flow. The replacement will be done during the plant expansion.

Expenditures	2016	2017	2018	2019	2020	Total
Equip/Vehicles/Furnishings					2,120,000	2,120,000
Total					**2,120,000**	**2,120,000**

Funding Sources	2016	2017	2018	2019	2020	Total
Wastewater Fund					2,120,000	2,120,000
Total					**2,120,000**	**2,120,000**

Budget Impact/Other

Future principal and interest payments will come from the Wastewater Fund.