FISCAL SUSTAINABILITY PLAN

For the Anthony, Kansas, Wastewater Collection and Treatment System

This plan outlines a Fiscal Sustainability Plan (FSP) for the City of Anthony, County of Harper, State of Kansas, as required by the Kansas Water Pollution Control Revolving Fund (KWPCRF) to provide a plan to develop an Asset Management Plan (AMP) and a financial plan to provide funds needed to pay for the ongoing operation, maintenance, repair, rehabilitation, and replacement expenses associated with the City's wastewater collection, pumping, and treatment system.

WHEREAS, the City of Anthony, Kansas, has constructed and is responsible to maintain the wastewater treatment works; and

WHEREAS, the City must pay all ongoing expenses associated with said treatment works and charge the users of said treatment works accordingly;

NOW, THEREFORE, BE IT AGREED:

1. The City will implement a performance measurement and management strategy as part of an ongoing effort to ensure high-quality and efficient use of existing facilities.

2. The City will make it a priority to be energy-efficient and use water efficiently in its provisions of public services.

3. The City will inspect and maintain existing wastewater collection and treatment systems. (See also the attached Operations & Maintenance Question and Answer Format attachment.)

4. The City will establish and maintain appropriate core resources to repair the existing wastewater collection system, pumping stations, and treatment system with the expectations:
    a. The wastewater treatment lagoons will need major repairs in 20 years, which will be financed by issuing debt for necessary improvements at that time;
    b. A minimum of 50% of manholes and sewer lines owned by the city will be inspected and cleaned yearly on an ongoing basis with a written summary of conditions, all defects and cost estimates of recommended rehabilitation measures. The annual summaries of these inspections and defect documentation shall be made available to KDHE inspection staff.
    c. Private service lines connecting to the sewer lines owned by the city are the responsibility of the property owner. The city will coordinate with individual property owners as and when needed.
    d. The city has three fund/accounts currently set up to receive and maintain annual payments of funds within the wastewater utility to allow the recommended rehabilitation measures as identified from the ongoing inspections to be repaired

on an ongoing basis. This includes the sewage pumping station major maintenance, repairs to lagoon erosion protection/liners, wastewater treatment facility mechanical repairs, wastewater treatment facility sludge removal, ongoing manhole and sewer line inspections, sewer equipment replacement and rehabilitation/repairs to manholes, sewer lines, and the service line connection to the sewer lines owned by the city.

5. The City will establish the appropriate cost-recovery target for its user charge fee to establish the appropriate reserves to fund on-going maintenance, repairs, and rehabilitation of the Anthony Wastewater Collection and Treatment systems. Informational documents are attached. The annual amount transferred into the "Wastewater Lagoon Cleaning Fund" account shall initially be $16,907, with the annual amount being increased or decreased as determined necessary by the annual review of needs and cost estimates and expenditures. The annual amount transferred into the "Sewer Equipment Replacement Fund" account shall initially be $25,195, with the annual amount being increased or decreased as determined necessary by the annual review of needs and cost estimates and expenditures. The annual amount transferred into the "Capital Improvement Fund" account shall initially be $20,806, with the annual amount being increased or decreased as determined necessary by the annual review of needs and cost estimates and expenditures.

6. The City will consider competitive contracting services and equipment when appropriate and where clear cost-effective alternatives exist.

7. The City will review revenue performance annually. (See also the attached Appendix A and Appendix B attachments.)

This agreement shall be in full force and effect from and after its passage and approval.

Passed by the Council of the City of Anthony, Kansas, this 1st day of November, 2022.

_____

Mayor

ATTEST:

_____

City Clerk

City of Anthony, Kansas, Wastewater Treatment Plant, Pumping Station, and Gravity Sewer Operation, Maintenance, and Replacement Guidance
Questions and Answer Format

1.A. Does the city have a Certified Operator to operate and maintain the wastewater system?

_X__ Yes, certified operator on staff (provide name and level of certification)

Jeffery Todd – Class 1

_ __ No, see 1.B. below.

1.B. Does the city have an Operator-In-Training (OIT) on staff learning to operate and maintain the wastewater system?

____ Yes, Operator-In-Training on staff (provide name of OIT)

_X__ If No, contact Vickie Jo Wessel of KDHE at vwessel@kdheks.gov, or by telephone at 785.296.2976

2.A. Does the city have adequate equipment to operate and maintain the wastewater treatment plant, pumping station, and gravity collection system? (Check the list below to indicate the equipment the city owns.)

_X_ Maintenance Vehicle (Provide year, make and model)

2016 Ford F350

_X_ Mowing Equipment (Provide year, make and model)

2014 Deweze MC72

_X__ Sewer Cleaning Machine (Provide type, year, make and model)

2016 Vaccon Combo Vac Jetter

_X__ Pump Station (if appl.) Tools, Spare Parts, Electrician or Electrical Support Services (List All) _Spare Floats, Spare Bowls, City Electrician_____

____ Smoke Testing Equipment

_X__ TV Inspection Equipment (Provide make and model) __Aries_____

Manhole safety equipment?__tripod, harnesses, vent fan_____

2.B. Has the wastewater treatment plant had and Energy Assessment Study preformed on the facility?

By whom and when?: No

Do the aeration system motors have variable frequency drives?___N/A_____

Does the aeration system have improved controls?__N/A_____

Have the plant pumps been properly sized?__N/A_____

Do the pumps have variable frequency drives to allow speed variation to match flow conditions? _____N/A_____

Are adequate alarms and warning systems in place? Yes

Does this wastewater treatment plant utilize the Supervisory Control and Data Acquisition (SCADA) system for monitoring and operational control?___Yes___

Are light fixtures high efficiency?___No_____

Is the HVAC an improved high efficiency system?__Yes_____

Does this wastewater treatment plant recover Biogas for utilization?_____No___

Does this plant utilize recycled effluent water?____No_____
For plant washdown/water grounds?
For irrigation off plant site?
For Industrial use off plant site?

2.C. If the city does not own adequate equipment for emergency cleaning and minor repairs of manholes and sewer lines, does the city have any Mutual Aid Agreements with other cities, or an "on call" contracts with private companies that provide these services?

____ Yes, emergency cleaning is provided by a Mutual Aid Agreement(s) with (list all city names here) _____

____ Yes, emergency cleaning is provided by "on call" contracts(s) with (list all company names and services here) _____

3. Does the city provide routine cleaning of sewer lines? (Indicate frequency and methods.)

Yes ___Half of system is cleaned every year_____

No _____

If not, KDHE recommends the city budget annual funds to clean sewer lines on established schedules based on the type of materials of construction of the pipes. The city should locate every manhole in the system and update the sewer system maps as the city-wide effort progresses. Vitrified Clay Pipe (VCP) is recommended to be cleaned a minimum of once every 3 years. PVC pipe is recommended to be cleaned a minimum of once every 7 years. In areas with a mix of VCP, "truss" pipe, CIP, DIP, and/or PVC pipe, cleaning is recommended a minimum of once every 5 years. Any "problem spots" in the piping system should be identified, recorded, and cleaned on a more frequent basis based on experience. Any sewer lines rehabilitated by slip-lining with CIPP or interior plastic liners can be reduced to cleaning frequency of once every 7 years.

4. Does the city provide routine cleaning and inspection of manholes? (Indicate frequency and methods.)

Yes __Manholes are inspected as the system is cleaned_____

No _____

If not, KDHE recommends the city inspect and record the conditions of manholes concurrently with the efforts to clean sewer lines on the established schedules stated above. Vitrified Clay Pipe (VCP) sewers tend to have brick manholes, and so would be opened, inspected, and conditions recorded a minimum of once every 3 years. PVC pipe tends to have precast concrete manholes and so would be

opened, inspected, and conditions recorded a minimum of once every 7 tears. In areas with a mix of VCP, "truss", CIP, DIP, and/or PVC pipe, the manholes may also be a mix of brick and precast concrete, and conditions would be recorded a minimum of once every 5 years. Any "problem spots" in the system of manholes should be identified, recorded, and considered for rehabilitation when discovered.

5. Does the city routinely provide or contract for television inspection and record keeping of information as gathered after cleaning of sewer lines? (Indicate frequency and methods.)

Yes Half of the lines cleaned each year are televised

No _____

If not, KDHE recommends the city inspect and record the conditions of the portion of the sewer lines that are accessible from the manhole concurrently with manhole inspections, concurrently with the efforts to clean sewer lines on the established schedules stated above. This information can then be reviewed by an experienced engineer or technician to provide recommendations for TV inspection of certain sewer lines. The TV inspection records would then be reviewed by an experienced engineer or technician to recommend sewer line and manhole repairs and/or rehabilitation. Any "problem spots" in the sewer system should also be rehabilitated with any larger project.

6. Does the city budget annually for manhole rehabilitation and/or sewer line rehabilitation or replacement? (Indicate annual budget amount for each.)

Yes _____

No An operational plan is in the process of being prepared that includes fiscal needs which will be budgeted in future capital planning, and may require adjustments to the estimates presented in this Fiscal Sustainability Plan.

KDHE recommends the routine cleaning of sewer lines, manholes inspections and recording of defects, and TV inspections of selected sewer lines be provided funding with the annual budget process. Perhaps manhole rehabilitation can also be provided on an annual budget "cash flow" basis. If the system is in good condition and sewer line rehabilitation needs are relatively small, perhaps rehabilitation of sewer lines can also be provided on an annual budget "cash flow" basis.

KDHE recommends the sewer systems be cleaned, inspected, and defects recorded with rehabilitation or replacement as needed. The initial review inspections can

be completed with a cleaning program for the entire sewer system of 3 to 7 years, as discussed above. For systems constructed of VCP pipe and brick manholes, an initial minimum inspection and rehabilitation effort to complete 5% of the system per year, on the average, is recommended. For systems constructed of PVC pipe (or pipes slip-lined with CIPP or plastic pipe) and precast concrete manholes, a minimum inspection and rehabilitation effort to complete 2% of the system per year, on the average, is recommended. When budgeting to rehabilitate or replace sewer lines, a larger city-wide effort may be in order to be funded with debt financing.

7. Does the city have a program to detect and remove private sector sources of infiltration and inflow? (Please provide a brief description of practices and attach any applicable city ordinances.)

Yes Ordinance 2552 prohibits connection of said sources to the sanitary sewer system.

No There is no active program for detection and removal.

If not, KDHE recommends operator training and recommends the city establish ordinance as necessary to resolve defects in the privately-owned portion of the system.

The city is encouraged to provide additional information and summary here of recent (in the prior 15 years) rehabilitation and replacement investments in the collection, pumping, and treatment systems serving the city.

- Installed a 3rd cluster site wastewater community system to serve Anthony City Lake.
- Installed City Sewer to new 12-unit housing addition.
- Lined 2,000 feet of pipe and rehabbed manholes on Main Street.
- Added 2 additional cells to the City's lagoon system.
- Rehabilitated Cell No. 5 to go from non-discharging to a discharging system due to lack of seepage and evaporation.

APPENDIX "A" TO USER CHARGE ORDINANCE
Flat Rate Structure

This appendix presents the methodology to be used in calculating user charge rates and illustrates the calculations followed in arriving at the first year's user charges. The charges established in this appendix are based on estimates of expenses and loadings. The actual expenses and loadings that occur may differ from these estimates and certainly they will change as time passes. Therefore, the user charges must be re-established whenever necessary to reflect actual expenses and loadings. Once the system is in use, the expenses and loadings can be determined from operating records and the user charges can be adjusted based on these figures.

1. Expenses: The total annual expenses associated with the treatment works are estimated as follows for 2023:

Item	Annual Expense
Administration	$76,838.00
Treatment	$207,586.00
Capital Outlay	$3,000.00
Transfer to General Fund	$29,250.00
Transfer to Capital Improvement	$5,000.00
Debt Service (Existing)	$151,989.44
Debt Service (New Construction)	$35,259.44
Annual Replacement Costs (See Appendix B)	$62,908.00
TOTAL ANNUAL BUDGET EXPENSE	**$571,830.88**

2. Loadings:

The initial hydraulic loading is estimated to be 41,862,144 gal/year.

(NOTE: The annual hydraulic loading to the wastewater treatment facility was assumed to be four times the average winter water usage for the municipality from residential, commercial and institutional water usage. By using winter quarter water usage, residential users will not be charged for consumptive use of water during the summer months. The difference between actual total wastewater flow at the wastewater treatment plant and the actual total potable water used by users of the municipality is infiltration/inflow. By calculating a unit flow charge based on the total annual water usage and the total annual budget, the cost of transporting and treating infiltration/inflow is being distributed according to flow volume of the users. This approach is shown because of its ease of administration and because infiltration/inflow

tends to be less significant in municipalities where flat rate structures are acceptable because of the collection system size, age of the collection system, and type of treatment generally employed in these municipalities. Other acceptable means of distributing the cost of transporting and treating infiltration/inflow include allocation based on the number of users or allocation based on the land area of the users.)

3. Unit Cost:

The initial unit cost for flow in $/gallons = $571,830.88/41,862,144 gal = $0.0136/gal

4. Establishment of User Classes:

Average Sewer Use calculated from 2021 Sewer Billing Summary

User	Number of Users	Average Winter Monthly Water Use	Total Annual Water Used	Cumulative Usage per Class
Residential	884	2,847	34,164	30,200,976
Commercial	166	5,854	70,248	11,661,168
TOTAL PAID CONNECTIONS	**1,050**			**41,862,144**

*Sewer flows based on January through March average water use.

5. Calculation of charges to users in each user class:

Total monthly charge per user in a particular user class:

$$= \frac{\text{(cumulative class usage)*(unit cost)}}{\text{[12*(number of users in class)]}}$$

where: Monthly charge per user is in dollars
Cumulative class usage is in gallons from paragraph 4 Unit cost is in $/gallon from paragraph 3
Number of users in class is from paragraph 4, and 12 is a conversion factor.

ESTIMATED SEWER USE CHARGES

User	Cumulative Class Usage, gallons	Cost/ gallon	Number of Users in Class	Calculated Monthly Charge per User
Residential	30,200,976	$0.0136	884	$38.74
Commercial	11,661,168	$0.0136	166	$79.61

APPENDIX "B" TO USER CHARGE ORDINANCE

This appendix contains a replacement schedule that was developed to determine the amount of revenue needed to fund the Wastewater Lagoon Cleaning Fund, Sewer Equipment Replacement Fund, and Capital Improvement Fund. The replacement schedule lists the equipment in the treatment works, the estimated dates when the equipment will have to be replaced, and the estimated cost of replacement (which must include an allowance for inflation) over the useful life of the treatment works. Also listed is the estimated cash flow that will occur in the replacement accounts. The replacement dates and costs shown are estimates; the actual replacement dates and costs could be significantly different from those shown. If the actual replacement expenses differ significantly from those listed in the replacement schedule, the funding of the replacement accounts should be adjusted accordingly.

REPLACEMENT SUMMARY		
Years from Current Year	**Replacement Item**	**Expenditure**
Every 5 Years	Manhole and Pipe Rehab	$20,000
Every 5 Years	Repairs to Lift Stations	$18,750
Every 5 Years	Sewer Equipment Replacement	$97,750
Every 10 years	WWTF Mechanical Repairs	$70,000
Every 10 years	Repairs to Lagoon Erosion Protection/Liner	$10,000
Every 10 Years	WWTF Sludge Removal	$125,000

ANNUAL REPLACEMENT REVENUE TO BE COLLECTED

I.	Today's Replacement Costs	5 Years	10 Years	15 Years	20 Years
	Manhole and Pipe Rehabilitation	$20,000	$20,000	$20,000	$20,000
	Repairs to Lift Stations	$18,750	$18,750	$18,750	$18,750
	Repairs to Lagoon Erosion Protection/Liner		$10,000		$10,000
	Sewer Equipment Replacement (Vehicles/Vac Truck/Camera/Backhoe/Mowers/Pump)	$97,750	$97,750	$97,750	$97,750
	WWTF Mechanical Equipment Repair		$70,000		$70,000
	WWTF Sludge Removal		$125,000		$125,000
	Today's Total Replacement Costs	**$136,500**	**$341,500**	**$136,500**	**$341,500**

II. Future Replacement Costs

(Assumed 2.00% Inflation)	Cost at:			
Present Cost	5 Years	10 Years	15 Years	20 Years
(Interest Factor - F/P @ 2%)	1.1041	1.2190	1.3459	1.4859
Future Replacement/Rehabilitation Costs	$150,707	$416,287	$183,711	$507,451

Total Future Replacement Costs, at 20 years $1,258,156

Average Annual Replacement Revenue Required $62,908
(Assuming 0% Interest on Investments)

Fund Totals	
Wastewater Cleaning Fund	**$16,907**
Sewer Equipment Replacement Fund	**$25,195**
Capital Improvements Fund	**$20,806**

Future Costs assuming 2% Inflation

REPLACEMENT SCHEDULE

Years from Current	Year	Replacement Item	Expenditure (Today's Costs)	Total Annual Expenditures (Future	Income	Balance
5	2028	Manhole and Pipe Rehabilitation	$20,000	$150,707	$314,540	$163,833
		Repairs to Lift Stations	$18,750			
		Sewer Equipment Replacement	$97,750			
10	2033	Manhole and Pipe Rehabilitation	$20,000	$416,287	$314,540	$62,086
		Repairs to Lift Stations	$18,750			
		Repairs to Lagoon Erosion Protection/Liner	$10,000			
		Sewer Equipment Replacement	$97,750			
		WWTF Mechanical Equipment Repairs	$70,000			
		WWTF Sludge Removal	$125,000			
15	2038	Manhole and Pipe Rehabilitation	$20,000	$150,707	$314,540	$225,919
		Repairs to Lift Stations	$18,750			
		Sewer Equipment Replacement	$97,750			
20	2043	Manhole and Pipe Rehabilitation	$20,000	$507,451	$314,540	$33,008
		Repairs to Lift Stations	$18,750			
		WWTF Mechanical Equipment Repairs	$70,000			
		Sewer Equipment Replacement	$97,750			
		Repairs to Lagoon Erosion Protection/Liner	$10,000			
		WWTF Sludge Removal	$125,000			

Annual Sewer Line Cleaning and Inspection is performed by City personnel, and is included with labor, in Table 1 of Appendix "A" Above.