

Proposed WWTP Site City of McKee
Jackson County, KY

Farmland Classification

6/5/2012



NRCS 2010 Aerial Photography

Scale 1:4,800

Legend

Gs - Gigsby fine sandy loam - Prime Farmland if protected from flooding or not frequently flooded during the growing season.

RCF - Rigly-rock outcrop association steep - Not Important Farmland.

SgF - Shelocta-Gilpin channery silt loam, steep - Not Important Farmland.

Site coordinates: 37/26/0.71N X 84/00/37.61W

Section 10: Evaluation of Recommended Regional Facility Plan

1. Environmental Impacts

A. Water Quality

The proposed 0-5 year project will entail constructing a new wastewater treatment plant to replace an aging one that has a history of multiple discharge violations. In future years, new sewer extensions will eliminate failing septic systems. The net effect of these projects will be a regional quality improvement in both the surface water and groundwater.

Figure 10-1 at the end of this Section is a plan showing the location of the existing and proposed wastewater treatment plants on a USGS map. A proposed process flow schematic of the proposed WWTP is shown in Figure 10-2.

B. Wetlands and Floodplains

No wetland disturbance is anticipated by these projects.

The proposed site for the new McKee WWTP has been surveyed in detail and a HEC RAS study was performed to identify the 100-year flood elevation. The property is situated along the Birch Lick Creek, and thus a portion of the site along the stream bank is naturally within the 100-year floodplain. The City of McKee has since obtained a DOW Stream Construction Permit and USACE NWP 14 to replace the existing bridge crossing the Birch Lick Creek, and to fill part of the existing floodplain intended for a new WWTP. As of the time of this submittal (early 2013), the construction was complete. Therefore, the new WWTP will be constructed above the 100-year flood elevation.

C. Air Quality

No impact on air quality, neither positive nor negative, is anticipated by these projects.

D. Endangered Species

The United State Fish and Wildlife Service (USFWS) and the Kentucky Department of Fish and Wildlife Resources (KDFWR) were contacted to determine if there were any federally or state listed threatened or endangered species in the vicinity of the project site. USFWS personnel indicated that several federally listed species have the potential to occur within the project vicinity, which are the Indiana bat, the Virginia big-eared bat and several species of mussel (Cumberland bean, Cumberland elktoe, little-wing pearly mussel and fluted kidneyshell).

To minimize impacts to roosting bats, the KDFWR recommended that trees only be removed from the project area between November 15 and March 31. Because of previous site disturbances, it is anticipated there will be no need to remove any trees. However, if necessary, trees will be removed during that time frame.

To minimize indirect impacts to aquatic resources, the KDFWR recommended strict erosion control measures to minimize siltation into streams and stormwater drains within

Section 10: Evaluation of Recommended Regional Facility Plan

the project area. Such BMP practices are standard procedure on construction sites, and will be required through contract specifications and through KPDES construction permitting.

Therefore, no impact on endangered species is anticipated by this project.

E. Historical and Archaeological Resources

The Kentucky Heritage Council was contacted regarding the possibility of historic and archaeological resources in the vicinity of the project site. The State Historic Preservation Officer (SHPO) recommended that an archaeological survey be completed at the proposed wastewater treatment plant site. An initial survey identified two multicomponent archaeological sites on the proposed wastewater treatment plant property; one a barn structure, and another which potentially contained prehistoric artifacts. The barn has been subsequently removed. A Phase II study was conducted on the archaeological site. Following the study, it was concluded that this site will be avoided, and therefore, no impact on archaeological resources are anticipated by this project.

F. Other Environmentally Sensitive Areas

No impacts on prime farmland or other environmentally sensitive areas are anticipated by this project.

2. Institutional Structure

The City of McKee will construct, own and operate the proposed facilities, all within their existing Planning Area, or within newly established Planning Area that is currently undesignated.

The 0-5 year phase will be wholly contained within the city of McKee and will be managed through the existing institutional structure, with no need for changes or intermunicipal agreements.

In future phases, as sewers are extended into the outlying county, it will be necessary for the Jackson County Fiscal Court to adopt a Sewer Use Ordinance and hand over authority to the City of McKee. Discussions have been held with the Jackson County Fiscal Court Judge, but no formal arrangements have been made at this time.

3. Funding Plan

The Funding Plan discussed herein addresses the initial projects proposed for the 0-5 Year Planning Area only. A funding plan for work beyond that timeframe would involve so many unknown variables (such as future rates, future construction costs, future customer base, interest rates, grant availability, etc.) that a funding analysis would not yield useful results at this time.

Section 10: Evaluation of Recommended Regional Facility Plan

A. Proposed Project Phasing

Construction of a new wastewater treatment plant is anticipated to be completed within five years. Sewer extension will then be constructed in several phases, which most likely will begin in the 6-10 year period. Figures 10-1 and 10-2 depict the proposed WWTP site plan and schematic diagram respectively. Although a funding plan was not prepared for the sewer phases, as discussed previously, Figures 3-3A and 3-3B show the conceptual phases of sewer extensions, broken down into approximately \$1.0MM projects.

B. Project Cost – WWTP

The 0-5 Year capital costs are summarized in Table 10-1 below.

Table 10-1
0-5 Year Capital Costs
City of McKee Wastewater Treatment Plant

Construction Cost	\$ 3,860,000
Legal, Land and Right of Way	30,000
Administrative	40,000
Engineering (Design and Resident Observation)	470,000
Project Contingencies	390,000
Total Project Cost (rounded to nearest \$10,000)	\$ 4,790,000

C. Operational Cost – WWTP

The 0-5 Year operational costs are summarized in Table 10-2 below. Costs are for operations and maintenance only.

Table 10-2
Annual Operational Costs

Description	Quantity	Unit Cost	Annual Cost
Electrical usage ¹	1,050 kw-hr/day	\$ 0.08 /kw hr	\$ 28,756
Payroll	3,120 hrs	25.00 /hr	78,000
Fuel	730 gal/yr	4.00 /gal	2,920
Laboratory Analysis	1 lump sum	4,828 /ls	4,828
PM: belts, filters, oil, grease	1 lump sum	2,000 /ls	2,000
Other Maintenance	1 lump sum	7,720 /ls	7,720
Annual sludge disposal	198 tons	50 /ton	9,918
Total, rounded to nearest \$1000			\$ 134,000

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D. Replacement Costs – WWTP

Replacement costs are shown for short lived assets in Table 10-3 below. These figures are based on a 20-year project life and a 2% earnings rate on escrow, combined with a 2.49% average 10-year CPI (2002 thru 2011)

Table 10-3
Short Lived Assets Replacement Costs

Description	Unit	No.	Unit Cost	Total Cost	Service Life	Future Cost	Annual Deposit
motor - grit chamber	ls	1	\$ 2,500	\$ 2,500	20	\$ 4,089	\$ 168
motor - grit washing	ls	1	2,000	2,000	20	3,271	135
motor - oxidation ditch	ls	3	12,000	36,000	20	58,875	2,423
motor - clarifier drive	ls	2	5,000	10,000	20	16,354	673
pump - grit	ls	1	6,000	6,000	10	7,673	701
pump - RAS/WAS	ls	2	7,000	14,000	10	17,904	1,635
pump - effluent	ls	2	9,000	18,000	10	23,019	2,102
pump - non-potable water	ls	1	3,000	3,000	10	3,837	350
pump - sludge	ls	2	7,000	14,000	10	17,904	1,635
blower - digesters	ls	2	40,000	80,000	20	130,834	5,385
ultraviolet disinfection mech.	ls	1	16,000	16,000	10	20,461	1,869
flowmeters and instruments	ls	1	10,000	10,000	20	16,354	673
walkway grating	ls	1	5,000	5,000	20	8,177	337
digester diffusers	ls	1	8,000	8,000	20	13,083	538
Total Annual Reserve							\$18,624

Future Cost and Annual Deposit values are based on the following rates:

Interest rate from escrow (assumed)	0.02
Inflation rate (10-yr avg CPI)	0.0249

E. Income – Initial WWTP Phase

Table 10-4 summarizes one year's worth of monthly income from sewer fees.

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Table 10-4
2011-2012 Sewer Service Income

Month	Income
Jul, 2011	\$ 12,938.93
Aug	13,047.97
Sep	13,416.45
Oct	14,016.09
Nov	12,617.64
Dec	12,731.54
Jan, 2012	17,223.33
Feb	15,710.71
Mar	14,729.48
Apr	15,460.72
May	14,707.06
Jun	13,703.85
Avg	14,191.98
Total	\$ 170,303.77

To estimate the impact of debt service on the customers, the current customer base (See Table 7-1) and rate structure was analyzed to model the income distribution. Table 10-5 provides a table of the flow and billing summary, followed by flow and income distribution tables sorted per customer category.

Table 10-5
Flow and Billing Summary

Source	distribution	target total flow (gpd)	no. customers	avg daily flow per customer (gpd)	total monthly flow per customer (gal/mo)
Residential - Inside City	15%	15,879	134	119	3,604
Residential - Outside City	1%	1,067	9	119	3,604
Apartments and Schools - In	39%	40,550	8	5,069	154,174
Apartments and Schools - Out	0%	0	0	0	0
Small and Medium Commercial - In	37%	38,400	96	400	12,167
Small and Medium Commercial - Out	8%	8,000	2	4,000	121,667
Total		103,896	249		

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Notes:

1. Flow distribution percentages and the number of customers under each category are based on the actual billing history for the most recent month the analysis was performed (July 2012).
2. Distribution of flows within each billing category (e.g. Residential - Inside City), is adjusted by trial and error to reasonably match the total billed monthly flow and income for each category. Because the sum of the target flows do not match the historical average daily flow of 99,000 gpd (recorded at the WWTP discharge), there will be a difference between the target flow and flows calculated below.

A. Residential - Inside City

	Fee (\$/1000gal)	No. customers	avg. daily flow per customer (gpd)	total daily flow	total monthly flow per customer (gal/mo)	monthly fee per customer (\$)	total monthly fee - calculated (\$)
first 1000 gal	20.00	10	30	300	913	20.00	200
1001-5000 gal	4.69	124	119	14,694	3,604	32.21	3,995
5001-10,000 gal	3.75	0	0	0	0	0.00	0
10,001-20,000 gal	3.25	0	0	0	0	0.00	0
20,001+	2.63	0	0	0	0	0.00	0
total		134	149	14,994	4,517	52.21	4,195

B. Residential - Outside City

	Fee (\$/1000gal)	No. customers	avg. daily flow per customer (gpd)	total daily flow	total monthly flow per customer (gal/mo)	monthly fee per customer (\$)	total monthly fee - calculated (\$)
first 1000 gal	25.00	0	0	0	0	0.00	0
1001-5000 gal	5.86	9	119	1,067	3,604	40.26	362
5001-10,000 gal	4.69	0	0	0	0	0.00	0
10,001-20,000 gal	4.06	0	0	0	0	0.00	0
20,001+	3.29	0	0	0	0	0.00	0
total		9	119	1,067	3,604	40.26	362

C. Other - Inside City

	Fee (\$/1000gal)	No. customers	avg. daily flow per customer (gpd)	total daily flow	total monthly flow per customer (gal/mo)	monthly fee per customer (\$)	total monthly fee - calculated (\$)
first 1000 gal	20.00	0	0	0	0	0.00	0
1001-5000 gal	4.69	12	100	1,200	3,042	29.58	355
5001-10,000 gal	3.75	24	200	4,800	6,083	42.82	1,028
10,001-20,000 gal	3.25	60	400	24,000	12,167	64.55	3,873
20,001+	2.63	8	5,069	40,550	154,174	442.89	3,543
total		104	5,769	70,550	175,466	579.84	8,799

Note: Apartment complexes fall under this category, as they are treated as a single customer by the City of Jackson.

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D. Other - Outside City

	Fee (\$/1000gal)	No. customers	avg. daily flow per customer (gpd)	total daily flow	total monthly flow per customer (gal/mo)	monthly fee per customer (\$)	total monthly fee - calculated (\$)
first 1000 gal	25.00	0	0	0	0	0.00	0
1001-5000 gal	5.86	0	0	0	0	0.00	0
5001-10,000 gal	4.69	0	0	0	0	0.00	0
10,001-20,000 gal	4.06	0	0	0	0	0.00	0
20,001+	3.29	2	4,000	8,000	121,667	446.97	894
total		2	4,000	8,000	121,667	446.97	894

Total Monthly Income	\$ 14,250
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actual	\$ 14,192
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F. Funding Scenario - WWTP

Part A of Table 10-6 below demonstrates one possible funding alternative utilizing a combination of grants and loans. Using the above tables through trial and error, the required rate increase (across the board for all customer categories) was calculated, as shown in Part B. For purposes of evaluating the impact of a rate increase, the residential customers generating 1001-5000 gallons per month was used as a benchmark. Based on this analysis, the resulting increase on user rates resulting from either a KIA loan or RD loan is within an acceptable degree.

Table 10-6
Impact of Loan Options on Monthly Billing

A. Grant Income

Total project cost	\$ 4,790,000
RD Grant	1,500,000
KIA Grant	1,000,000
ARC Grant	500,000
CDBG Grant	1,000,000
Total Grants	4,000,000
Total Funds to Borrow	\$ 790,000

B. Loan Analysis

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1.

Current Average Residential Monthly Bill - In City Customers	\$ 32.21
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2. KIA Loan Option

Interest Rate (Standard SRF rate)		0.95%
Number of Years		20
Capital Recovery Factor		5.51%

Annual Loan Repayment	\$	43,558
Reserve Account - SLA	+	18,624
Annual O&M, WWTP	+	134,000
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Break-Even Revenue Requirement		196,182
Contingency (10%)	+	19,618
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Total Annual Revenue Requirement		215,800
Annual Income (2011-2012)	-	170,304
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Additional Annual Revenue Required	\$	45,497

Required Rate Increase with KIA Loan 26.2%

Average Residential Monthly Bill with KIA Loan - In City Customers	\$ 40.66
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3. RD Loan Option

Interest Rate (Standard SRF rate)		2.50%
Number of Years		38
Capital Recovery Factor		4.11%

Annual Loan Repayment	\$	32,445
Reserve Account - SLA	+	18,624
Annual O&M, WWTP	+	134,000
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Break-Even Revenue Requirement		185,069
Contingency (10%)	+	18,507
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Total Annual Revenue Requirement		203,576
Annual Income (2011-2012)	-	170,304
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Additional Annual Revenue Required	\$	33,273

Required Rate Increase with RD Loan 19.1%

Average Residential Monthly Bill with RD Loan - In City Customers	\$ 38.35
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Monthly fees presented in Table 10-6 are based on historical usage rates. For example, the average in-city residential customer used 3,604 gallons per month. For purposes of

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evaluating rates on a standardized comparison basis, Table 10-7 compares the monthly fees to future fees based on a usage of 4,000 gallons per month.

Table 10-7

Current and Proposed Monthly Fee, Based on 4,000 Gallon Per Month Usage

A. Current Rate Structure

	Fee (\$/1,000 gal)			
	Residential		Other	
	Inside City	Outside City	Inside City	Outside City
first 1000 gal	20.00	25.00	20.00	25.00
1001-5000 gal	4.69	5.86	4.69	5.86
5001-10,000 gal	3.75	4.69	3.75	4.69
10,001-20,000 gal	3.25	4.06	3.25	4.06
20,001+	2.63	3.29	2.63	3.29
Cost per 4000 gal	34.07	42.58	34.07	42.58

B. Rate Structure with KIA Loan

Rate Increase = 26%

	Fee (\$/1,000 gal)			
	Residential		Other	
	Inside City	Outside City	Inside City	Outside City
first 1000 gal	25.24	31.55	25.24	31.55
1001-5000 gal	5.92	7.40	5.92	7.40
5001-10,000 gal	4.73	5.92	4.73	5.92
10,001-20,000 gal	4.10	5.12	4.10	5.12
20,001+	3.32	4.15	3.32	4.15
Cost per 4000 gal	43.00	53.74	43.00	53.74

C. Rate Structure w/ RD Loan

Rate Increase = 19%

	Fee (\$/1,000 gal)			
	Residential		Other	
	Inside City	Outside City	Inside City	Outside City
first 1000 gal	23.81	29.76	23.81	29.76
1001-5000 gal	5.58	6.98	5.58	6.98
5001-10,000 gal	4.46	5.58	4.46	5.58
10,001-20,000 gal	3.87	4.83	3.87	4.83
20,001+	3.13	3.92	3.13	3.92
Cost per 4000 gal	40.56	50.69	40.56	50.69

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Several funding agencies have been identified as potential sources of funding for this project. Current plans are to request funding from these various sources for the 0 to 2-year Planning Period Area.

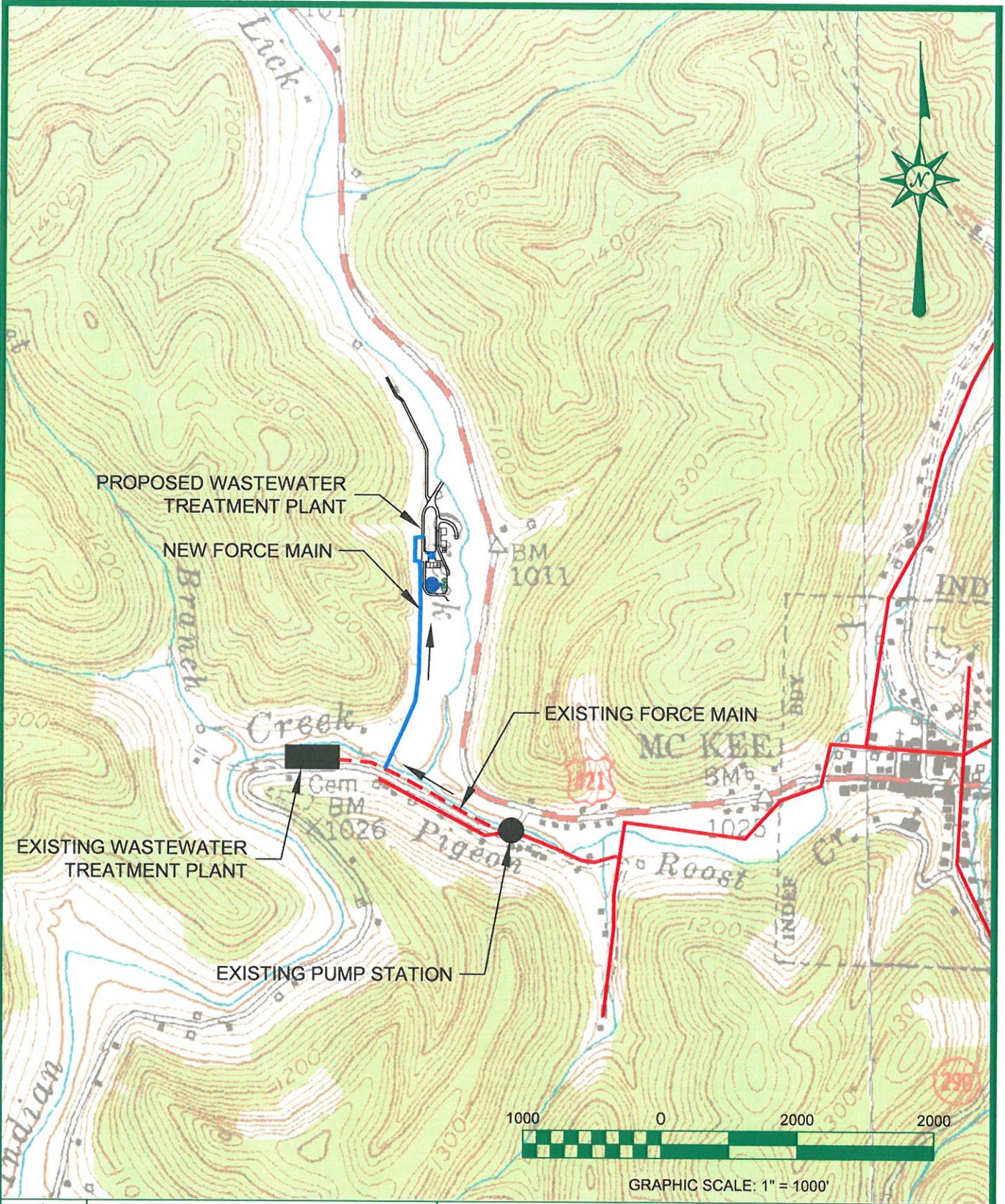
- State Revolving Fund, Loan
- Community Development Block Grant (CDBG)
- Rural Development Grant (RD)
- Rural Development Loan
- EPA Special Appropriations Grant
- Appalachian Regional Commission Grant

4. Implementation Schedule

Table 10-8 is a proposed implementation schedule for the projects outlined in this report. Given the condition of the existing wastewater treatment plant and the urgency to replace it, design and funding efforts will begin immediately following approval of this Plan Update. The ensuing phases of work are generally separated into moderately sized projects of approximately \$1.0MM project cost, with the intent that can be quickly implemented due to their relative small size.

Table 10-8
Proposed Implementation Schedule

Phase	Description	Completion Date	
		Design	Construction
	McKee WWTP	July, 2013	Dec, 2015
1A	421 North to Waneta	Jan, 2018	Dec, 2018
1B	421 North to Sandgap	Jan, 2019	Dec, 2019
1C	Sandgap	Jan, 2020	Dec, 2020
2A	421 South to Grey Hawk	Jan, 2021	Dec, 2021
2B	421 South to Tyner	Jan, 2022	Dec, 2022
2C	30 West to Annville	Jan, 2023	Dec, 2023
2D	Annville West	Jan, 2024	Dec, 2024
2E	Annville East	Jan, 2025	Dec, 2025
3A	290 South to Olin	Jan, 2026	Dec, 2026
3B	290 South to Annville	Jan, 2025	Dec, 2027

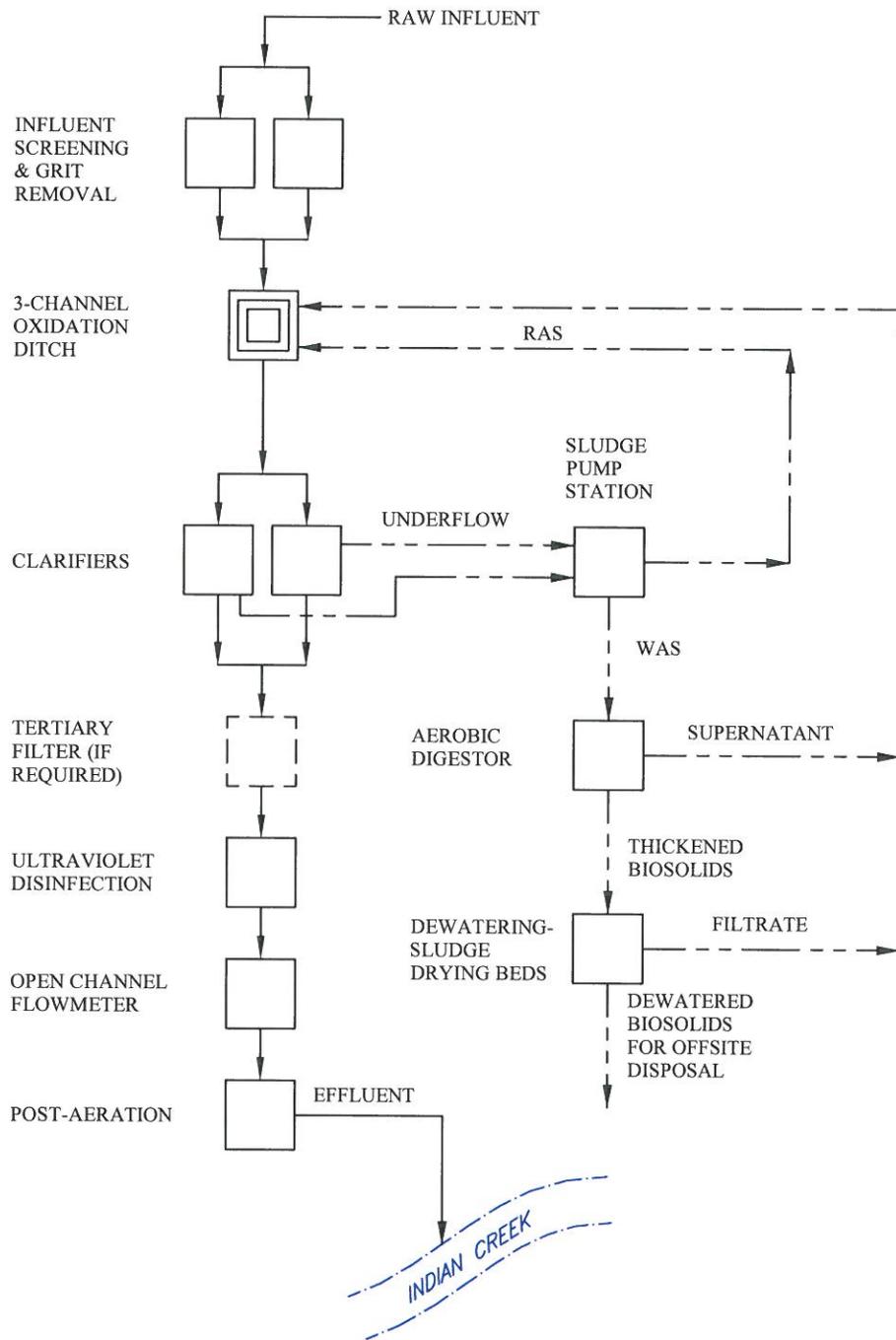


nesbitt engineering, inc.
providing proven solutions since 1976

**SANITARY SEWER COLLECTION SYSTEM
 WASTEWATER TREATMENT PLANT
 CITY OF MCKEE, KENTUCKY**

FIGURE 10-1

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OXIDATION DITCH WWTP PROCESS FLOW SCHEMATIC

SELECTED TREATMENT PROCESS

nesbitt engineering, inc.
providing proven solutions since 1976

PRELIMINARY ENGINEERING REPORT
CITY OF McKEE
JACKSON COUNTY, KENTUCKY

FIGURE 10-2

drawn by:

JCW

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1098.10

date:

4-11-13

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Section 11 Documentation of Public Participation

1. Newspaper Advertisement
 - Jackson County Sun, date & date

2. Measures Taken to Solicit Public Participation
 - Flyer posted at local convenience store and restaurants

To be added after public meeting/comment period:

3. Summary Report Presented to the Public
 - Powerpoint presentation

4. Public Meeting Attendance Sheet
 - June 3, 2013

5. Public Comments
 - Meeting notes, date
 - Comments

NOTICE OF PUBLIC HEARING

(PURSUANT TO 401KAR5:006 SECTION 4 & 5; KRS-424, and 40CFR 25.5 & 6)

The City of McKee, City Hall, US 421 Main Street, McKee KY, 40447 has drafted a Regional Facility Plan (RFP) Update focusing on waste water collection and treatment requirements and associated costs. The Plan addresses the immediate need for a new treatment facility and proposes an eventual expansion of the McKee Planning Area into several populated regions of Jackson County. Interested citizens may obtain further information and view a copy of the draft RFP by contacting the City of McKee at the above given address or by calling (606) 287-8305 between the hours of 8 a.m. and 4 p.m. on Monday to Friday. A copy of the draft RFP may also be obtained on-line at <http://water.ky.gov/Pages/PublicNotices.aspx>.

A public hearing will be held on Monday, June 3rd, 2013, 6:00 PM at the McKee City Hall. The purpose of the hearing is to discuss the draft plan and its contents, specifically the alternatives, project cost, financing sources and user fees. The public is encouraged to attend this meeting and shall have a right to comment on the plan for a period of 30 days from the date of publication of this notice by writing to the above address or before the termination of the hearing whichever is later. A longer comment period may be requested in writing. All persons who believe any condition of the draft plan is inappropriate, inaccurate, incomplete, or otherwise not in the best interest of the public and environment must raise all reasonable issues and submit all reasonable arguments, facts, and comments with supporting documents to the above given contact person.

Public Hearing

City of McKee, Kentucky

Date: Monday, June 3, 2013, 6:00PM

Location: City of McKee, City Hall, US 421 Main Street, McKee KY, 40447

Purpose: The City of McKee has drafted a Regional Facility Plan (RFP) Update focusing on waste water collection and treatment requirements and associated costs. The Plan addresses plans for a new treatment facility and eventual expansion of the McKee Planning Area into several populated regions of Jackson County

A public hearing will be held to discuss the draft plan and its contents, specifically the alternatives, project cost, financing sources and user fees.

Interested citizens may obtain further information and view a copy of the draft RFP by contacting the City of McKee at the above given address or by calling (606) 287-8305 between the hours of 8 a.m. and 4 p.m. on Monday to Friday. A copy of the draft RFP may also be obtained on-line at <http://water.ky.gov/Pages/PublicNotices.aspx>.

Section 12: Regional Facility Plan Completeness Checklist and Forms

A. Project Design

The following discussion summarizes the design criteria for each of the components of the proposed collection system upgrade and the new wastewater treatment plant. Design criteria is consistent with “Health Education Services, *Recommended Standards for Wastewater Facilities*, 2004 Ed.”, commonly referred to as the Ten States Standards. Duplicate processes and/or additional tank volume is provided as needed to comply with redundancy requirements of 410 KAR 5:005, Sections 7 and 13.

Regional Planning Agency Name: _____

Date: _____		PAGE #
SECTION 1		
REGIONAL FACILITY PLAN SUMMARY- This section shall provide a brief summary of the information provided in the facility plan, including the following:		
1.	Purpose of the plan and major problems evaluated in the plan.	1 - 1
2.	Recommended alternative chosen to remediate or correct the problems and/or serve the area of need identified in the plan. Also, include any institutional arrangements necessary to implement the recommended alternative(s).	1 - 1
3.	Estimated cost of implementing the proposed plan (including user fees) and the proposed funding method to be used.	1 - 3
4.	Planning agency commitments necessary to implement the plan.	1 - 5
5.	Schedule of implementation for projects.	1 - 5
SECTION 2		
STATEMENT OF PURPOSE AND NEED- This section shall contain a brief description of the purpose and need for a submitting the facility plan.		2 - 1

Section 12: Regional Facility Plan Completeness Checklist and Forms

SECTION 3		
PHYSICAL CHARACTERISTICS OF THE PLANNING AREA- This section shall delineate the planning area boundaries and describe key topographic, geographic and pertinent natural or man-made features of the area. Digital or electronic submission of the planning area boundary shapefile in a standard GIS format shall also be included. This section shall also include the following maps:		
1.	One (1) up-to-date map, suitable for photocopying, indicate the planning area boundary, service area boundary, watershed boundaries, county lines, populated places, cities and/or towns and project areas or proposed planning period phases.	3 - 1
2.	One (1) up-to-date map, suitable for photocopying, include locations of wastewater treatment facilities (including package treatment plants), discharge location(s), collection lines (gravity, force main, interceptors), pump stations, public drinking water intake points and groundwater supply areas [Source Water Area Protection Plans (SWAPP) and/or Wellhead Protection Areas (WHPA)].	3 - 1
3.	One (1) seven and one-half (7 ½) minute USGS topographic map including the location of wetlands, delineation of the 100-year floodplain, surface water(s), and topography.	3 - 1
4.	If available, a local planning and zoning land use map.	3 - 2
SECTION 4		
SOCIOECONOMIC CHARACTERISTICS OF THE PLANNING AREA- The following characteristics of the planning area shall be discussed:		
1.	Historical, current, and projected population in the planning area including wastewater contributions from industrial and commercial sources.	4 - 1
2.	Current and projected population in the existing service area and unsewered parts of the planning area	4 - 1
3.	Economic or social benefit to the affected community	4 - 2

Section 12: Regional Facility Plan Completeness Checklist and Forms

SECTION 5		
EXISTING ENVIRONMENT IN THE PLANNING AREA- Describe existing physical, biological, cultural, and other resource features within the planning area with an emphasis on those that may be impacted by the proposed plan or projects, including the following:		
1.	Physical features such as surface and groundwater quality, water sources and supply, wetlands, lakes, streams, air pollution, floodplains, soils, geology, and topography	5 – 1
2.	Biological: Identify plant and animal communities in the planning area with an emphasis upon endangered and threatened species likely to be impacted	5 – 4
3.	Cultural: Describe archaeological and historical resources that may be affected by the proposed project	5 – 5
4.	Other Resource Features such as national and state parks, recreational areas, USDA Designated Important Farmland, and any other applicable environmentally sensitive areas	5 - 6

SECTION 6		
EXISTING WASTEWATER SYSTEM- This section shall be prepared by a Professional Engineer licensed in Kentucky. A description of the existing facilities within the planning area shall include the following:		
1.	On-site systems in the planning area	6 – 1
2.	Physical condition of the existing wastewater treatment plant(s) including the type, age, design capacity, process units, peak and average wastewater flows, current discharge permit limits, schematic layout of treatment plant. Include a narrative description of the capacity of the treatment plant to meet reliability and redundancy requirements as outlined in regulation 401 KAR 5:005, Section 13.	6 – 1
3.	Existing collection and conveyance system and its condition	6 - 8
4.	Existing biosolids disposal method	6 - 11
5.	Existing operation, maintenance and compliance issues	6 - 11

Section 12: Regional Facility Plan Completeness Checklist and Forms

SECTION 7		
FORECASTS OF FLOWS AND WASTE LOADS IN THE PLANNING AREA- This section shall be prepared by a professional engineer licensed in Kentucky and shall include:		
1.	Current and projected commercial, industrial and residential growth for the proposed planning period	7 – 1
2.	A copy of the waste load allocation (WLA) issued by the DOW for new or expanded treatment plant projects	7 - 4
SECTION 8		
EVALUATION OF ALTERNATIVES- This section shall be prepared by a professional engineer licensed in Kentucky and include an assessment of alternatives to determine the appropriate facilities that will meet the wastewater needs of the planning area and provide benefits that are cost-effective and environmentally sound. The section shall include:		
1.	No-action alternative	8 – 1
2.	Optimization of existing facilities	8 – 1
3.	Regionalization	8 – 1
4.	Other alternatives	8 – 2
5.	Detailed cost analysis along with 20 year present worth analysis for each alternative	8 – 3, 7
6.	Recommended alternative	8 - 7
SECTION 9		
CROSS-CUTTER CORRESPONDENCE AND MITIGATION- Each facility plan shall include cross-cutter correspondences to and from each agency related to the following four environmental and cultural concerns:		
1.	Threatened and Endangered Species: The U.S. Fish and Wildlife Service- Kentucky Ecological Services Field Station and the Kentucky Department of Fish and Wildlife Resources	Exhibit: 9 – 1 & 9 - 2
2.	Historical Resources: The Kentucky Heritage Council State Historic Preservation Office	9 – 3
3.	Aquatic Resources: The US. Army Corps of Engineers (Louisville, Nashville, or Huntington Districts).	9 – 4
4.	Agricultural Resources: The local office of the Natural Resources Conservation Service (NRCS) or USDA Service Center	9 - 5

**Section 12: Regional Facility Plan Completeness
Checklist and Forms**

SECTION 10		
EVAULATION OF RECOMMENDED REGIONAL FACILITY PLAN- This section of the facility plan shall summarize the critical components of the recommended plan.		
1.	Environmental impacts	10 – 1
2.	Institutional structure	10 – 2
3.	Funding plan	10 – 2
4.	Current and projected residential user charge rate based on 4,000 gallon usage per month	10 – 9
5.	Implementation schedule	10 - 10
SECTION 11		
DOCUMENTATION OF PUBLIC PARTICIPATION- The section shall include a copy of the newspaper advertisement/proof of publication, attendance sheet, and public comments.		X

City of McKee, WWTP
Regional Facilities Plan Update
Checklist Spreadsheet - Unit Process Design Criteria

Design Capacity

0.50 MGD

Unit Process	Number of Units ¹	Design Flow per Unit (MGD)	Design Criteria ²
Influent Pumping	2	1.2	10-States, Sec. 44
Screening - Manual	2	>>1.0	10-States, Sec. 61.1
Screening - Mechanical	1	1.9	10-States, Sec. 61.2
Grit Removal	1	4.0	10-States, Sec. 63
Biological Process - Oxidation Ditch	3 trains	0.5 (total)	10-States, Sec. 92
Final Clarification	2	0.8	10-States, Sec. 70
UV Disinfection	2	1.6	10-States, Sec. 104
Post Aeration	1	3.2	10-States, Sec. 92.332
Effluent Pumping	2	1.3	10-States, Sec. 44
RAS/WAS Pumping	2	0.8	10-States, Sec. 44 & 92.4
Aerobic Digester	2	0.25	10-States, Sec. 85
Sludge Dewatering (BFP)	1	>0.50	10-States, Sec. 88.3

Footnotes

1. The number of units shall be in accordance with the reliability/redundancy checklist.
2. The design criteria shall be in accordance with 401 KAR 5:005 Including Ten States Standards.

**City of McKee, WWTP
Regional Facilities Plan Update
Checklist Spreadsheet - Design Flows and Concentration**

	Flow MGD	BOD ₅		TSS		NH ₃ -N		TKN		P	
		mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day	mg/l	lb/day
Average Daily											
Domestic Portion	0.50	220	917	220	917	25	104	40	167	8	33
Industrial Portion	0.00	0	0	0	0	0	0	0	0	0	0
Total	0.50	220	917	220	917	25	104	40	167	8	33
P.E.	5,000										
Peak Hourly											
Domestic Portion	1.62	68	917	68	917	8	104	12	167	2	33
Industrial Portion	0.00	0	0	0	0	0	0	0	0	0	0
Total	1.62	68	917	68	917	8	104	12	167	2	33
Peak Daily	1.62	68	917	68	917	8	104	12	167	2	33
Peak Instantaneous	1.96	56	917	56	917	6	104	10	167	2	33

Notes:

1. P.E.: Population Equivalent is based on 100 gpdc.
2. Peak hourly flow per 10-States Stds, 11.24.
3. Peak daily flow is maximum design capacity of WWTP.
4. Peak instantaneous flow is based on both raw influent pumps operating simultaneously.

Appendix 1

- **Agreed Order, 11/16/06**
- **Corrective Action Plan Evaluation, 10/25/10**

COMMONWEALTH OF KENTUCKY
ENVIRONMENTAL AND PUBLIC
PROTECTION CABINET
DIVISION OF ENFORCEMENT
CASE NO. DOW 04079

IN RE: City of McKee
P.O. Box 455
McKee, Kentucky 40447

AGREED ORDER

WHEREAS, the parties to this Agreed Order, the Environmental and Public Protection Cabinet (hereinafter "Cabinet") and the City of McKee (hereinafter "City"), state:

STATEMENTS OF FACT

1. The Cabinet is charged with the statutory duty of enforcing KRS Chapter 224 and the regulations promulgated pursuant thereto.
2. The City owns and operates a sewage system, as that term is defined in KRS 224.01-010(25), comprised of sewage collection lines (hereinafter "collection system") and a waste water treatment plant (hereinafter "WWTP"), that provides sewage service to the residents of McKee, Jackson County, Kentucky. The WWTP and collection system are hereinafter collectively referred to as the "facility".
3. McKee holds Kentucky Pollution Discharge Elimination System (KPDES) Permit No. KY0034444, issued by the Cabinet's Division of Water on July 28, 2003.
4. Authorized representatives of the Cabinet have identified the following violation of KRS Chapter 224 and the regulations promulgated pursuant thereto at the facility described in paragraph 2 above:

- a. 401 KAR Chapter 5:065 Section 1 – Failure to report results of total chlorine residual on the KPDES Discharge Monitoring Report in June, July, August and September 2003.
 - b. 401 KAR Chapter 5:065 Section 1 – Failure to meet KPDES permit limit for fecal coliform in April and August 2003.
 - c. 401 KAR 5:065 Section 1 (5) – Failure to provide proper operation and maintenance of the facility. Specifically, failure to repair the effluent flow meter from June – September 2003.
5. On November 19, 2003, the Cabinet issued the City a Notice of Violation for the violation described in paragraph 4 above.
6. Authorized representatives of the Cabinet have identified the following violation of KRS Chapter 224 and the regulations promulgated pursuant thereto at the facility described in paragraph 2 above:
- a. 401 KAR 5:065 Section 1 (1) (a) – Failure to meet KPDES limit for Total Suspended Solids Loading Limits in January and February 2004.
 - b. 401 KAR 5:065 Section 1 (1) (a) – Failure to meet KPDES limit for Carbonaceous Biochemical Oxygen Demand Loading Limits in January and February 2004.
 - c. 401 KAR 5:065 Section 1 (1) (a) – Failure to meet KPDES limit for Dissolved Oxygen in January and February 2004.
 - d. 401 KAR 5:065 Section 1 (1) (a) – Failure to meet KPDES limit for fecal coliform in February 2004.
7. On June 23, 2004 the Cabinet issued the City a Notice of Violation for the

violation described in paragraph 6 above.

8. Authorized representatives of the Cabinet have identified the following violations of KRS Chapter 224 and the regulations promulgated pursuant thereto at the facility described in paragraph 2 above:

a. 401 KAR 5:031 Section 2 (1) (a) – Degrading the waters of the Commonwealth

9. On November 30, 2004 the Cabinet issued the City a Notice of Violation for the violations described in paragraph 8 above.

10. The City neither admits nor denies all violations described above, but acknowledges that the facility described in paragraph 2 was in violation of KRS Chapter 224 and the regulations promulgated pursuant thereto as set forth above at the time of the respective Notices of Violation.

11. The Cabinet has reviewed all facility flow data submitted by the City for calendar year 2004. The data indicates that average flow at the facility has exceeded facility design capacity of one hundred seventy thousand gallons per day (170,000 GPD) for each reporting period in 2004, indicating that the facility was hydraulically overloaded.

NOW THEREFORE, in the interest of settling all civil claims and controversies involving the violations described above, the parties hereby consent to the entry of this Agreed Order and agree as follows:

REMEDIAL MEASURES

12. The City shall perform the following remedial measures by the dates specified herein: