Strategic Water Resource Development Plan

Summary of Wastewater Treatment Systems

Big Sandy Area Development District

Water Resource Development Commission

March, 2000

CONTENTS

MAP LISTING

BIG SANDY AREA DEVELOPMENT DISTRICT

Municipal Building - 2nd Floor
North Lake Drive
Prestonsburg, KY 41653
(606) 886-2374

ADD Sewer Service (map)

- Estimated 1999 population of 165,000--19% on public sewer
- Estimated 2020 population of 163,000--52% on public sewer
- Proposed projects would add about 22,400 new households to public sewer service during 2000-2020
- Estimated funding needs for public sewer 2000-2005--$77,800,000
- Estimated funding needs for public sewer 2006-2020--$147,500,000

The Big Sandy Area Development District had an estimated population of 164,775 (63,446 households) in 1999 with a projected population of 163,000 (69,600 households) in 2020. Public sewer systems serve 30,600 area residents, or 19 percent of the population. Proposed sewer line extensions for the period 2000-2020 would provide service to an additional 22,400 households. About 134,000 people in the region currently rely on onsite treatment systems.

Estimated populations and public sewer service for the five counties in the region is given below (7 public sewer systems serve the region):

County	1999 Pop	On Public	2020 Pop	On Public
Floyd	42,800	8,650 (20%)	42,000	27,300 (65%)
Johnson	24,200	7,250 (30%)	24,500	12,300 (50%)
Magoffin	13,900	2,100 (15%)	15,200	6,100 (40%)
Martin	11,900	1,800 (15%)	10,600	4,250 (40%)
Pike	72,000	10,800 (15%)	70,400	35,200 (50%)
Region	*165,000*	*30,600 (19%)*	*163,000*	*85,200 (52%)*

EXISTING & PROPOSED SEWER SERVICE BSADD Kentucky

Prepared By:
Water Resource Development Commission

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Bob Arnold, Chairman
Lawrence Wetherby, Executive Director

Final GIS & Cartographic Operations By:
Kent Anness & Kim Anness

Data Collection & GIS Input By:
Kentucky Area Development Districts

Water Resource Development Commission

EDUCATION PAYS

KGS

Paintsville Lake
Martin County Reservoir
Dewey Lake
Fishtrap Lake
Bert T. Combs Mtn Pkwy

JOHNSON
MAGOFFIN
MARTIN
FLOYD
PIKE

Paintsville
Inez
Warfield
Van Lear
Salyersville
Prestonsburg
Allen City
Martin
Pikeville
Wayland
Wheelwright
Elkhorn City

201k Facility Planning Area
Incorporated City Boundary
Sewage Treatment Plant

SEWER SERVICE

Existing Sewer Service
Proposed Sewer Service

Estimated costs for public sewer expansions and associated system upgrades are:

Proposed Projects 2000-2005

System	New Customers Served	Cost ($1000)	Line Upgrade ($1000)	Treatment Expansion ($1000)	New Treatment ($1000)	Lift Stations, and other ($1000)	Total Costs ($1000)
FLOYD							-
							-
Beaver Elkhorn Water District	2,456	17,300	-	-	2,500		19,800
Prestonsburg	550	5,100	-	-	-	-	5,100
Total	**3,006**	**22,400**	**-**	**-**	**2,500**		**24,900**
JOHNSON							-
Paintsville	1,641	12,300	-	-	-	-	12,300
Total	**1,641**	**12,300**					**12,300**
							-
MAGOFFIN							-
Salyersville	320	4,150	-	4,000	-		8,150
Total	**320**	**4,150**	**-**	**4,000**			**8,150**
MARTIN							-
Inez	465	3,000	-	-	1,600		4,600
Total	**465**	**3,000**	**-**	**-**	**1,600**		**4,600**
							-
PIKE							-
Mountain Water District	3,570	25,500	-	-	-	-	25,500
Elkhorn City	97	1,300	-	1,000	-	-	2,300
Total	**3,667**	**26,800**	**-**	**1,000**			**27,800**
Total Big Sandy ADD	**9,099**	**68,650**	**-**	**5,000**	**4,100**	**-**	**77,750**

Proposed Projects 2006-2020

System	New Customers Served	Cost ($1000)	Line Upgrade ($1000)	Treatment Expansion ($1000)	New Treatment ($1000)	Lift Stations, and other ($1000)	Total Costs ($1000)
FLOYD							-
							-
Beaver Elkhorn Water District	3,193	24,900	-	2,000	-		26,900
Prestonsburg	1,507	10,700	-	-	-	-	10,700
Total	**4,700**	**35,600**	**-**	**2,000**			**37,600**
							-
JOHNSON							-
Paintsville	312	3,800	-	5,000	-		8,800
Total	**312**	**3,800**		**5,000**			**8,800**
							-
MAGOFFIN							-
Salyersville	1,082	10,150	-	-	-		10,150
Total	**1,082**	**10,150**					**10,150**
MARTIN							-
Inez	517	7,400	-	2,000	-		9,400
Total	**517**	**7,400**	**-**	**2,000**			**9,400**
PIKE							-
Mountain Water District	6,707	58,500	-	19,000	4,000		81,500
Total	**6,707**	**58,500**	**-**	**19,000**	**4,000**		**81,500**
							-
Total Big Sandy ADD	**13,318**	**115,450**	**-**	**28,000**	**4,000**	**-**	**147,450**

BIG SANDY REGION OVERVIEW

The Big Sandy area is a region that contains 1,981 square miles with a population of 165,000 people. The Big Sandy area is served with eight wastewater collection facilities that are located in the cities of: Prestonsburg, Martin, and Wheelwright of Floyd County, Paintsville of Johnson County, Salyersville of Magoffin County, Inez of Martin County, and Pikeville, Coal Run Village, and Elkhorn City of Pike County.

Many people in these counties are depending on alternative wastewater collection services due to the lack of accessibility with public sewer systems. According to the 1990 Census, there are 58,981 total occupied housing units in the Big Sandy area and only 11,552 of those housing units can utilize public sewer facilities. Public sewer systems provide 19.25% of the total amount of occupied households in the region with wastewater collection services. These percentages indicate that a population more than 100,000 people in the area are in need of public sewer collection systems. These people depend on wastewater alternatives such as septic tanks, cesspools, and package treatment plants. The Census of 1990 indicates

that 47,557 total households use septic tanks and cesspools for wastewater disposal. Through previous experiences, many of these disposal systems are in noncompliance with state and federal laws.

The lack of public wastewater services and the large amount of wastewater alternatives in noncompliance have created severe environmental problems in the Big Sandy area. These environmental problems of the region have created unhealthy conditions associated primarily with water sources. These problems are of major concern. Restoring water quality in the region by decreasing the amount of point pollution sources is needed. The main focus in restoring the water quality is providing feasible sewer services for as many households in the region as possible. A long-term goal of the Big Sandy region is providing everyone with an effective means of wastewater disposal.

PLANNING PROCESS OVERVIEW

District staff reviewed the WRDC Phase I Sewer Map Coverage, Big Sandy Area Development District's Comprehensive Water and Sewer Plan of 1973. The staff also reviewed the most current 201 plans for each county. The information from these two sources provided a structural representation of the present situation concerning wastewater infrastructure.

A map layer was created for representation of the wastewater facilities in existence. This layer provided ranges of services offered by present wastewater systems. This information obtained from the Comprehensive Plan and County 201 plans provided directional establishment for new and current wastewater facilities.

Finally, the District staff solicited area leadership and citizens-at-large input into the planning process for new sewer line extensions or system improvements. Work sessions were conducted during monthly meetings of the Big Sandy ADD Board of Directors. These sessions allowed the respective County delegations to illustrate the unserved areas of their county and suggested "projects" by marking areas for new sewer services or improvement projects on a large-scale map of their county.

Through these meetings and the information already obtained from other plans, three representations of wastewater categories were formed in each county of the Big Sandy area. These representations were existing sewer, proposed sewer, and impractical sewer.

Existing sewer consisted of the sewer plant and the service area. The proposed sewer indicated areas where sewer should be feasible by expanding lines, improving systems, or the construction of new wastewater facilities. *The proposed projects can be summarized in the Big Sandy Region's Proposed Wastewater Improvement Chart following the narrative section on page 15*. The impractical areas determined by delegates were areas that could not obtain accessibility to sewer due to the extreme cost associated with providing these services.

Many areas in each county of the Big Sandy region are labeled impractical. As a result these areas labeled impractical will depend on alternative wastewater collection systems. The selection of alternative systems will be determined by cost and effectiveness for site specific needs. *A summary of alternative wastewater systems can be found following the Big Sandy Region's Improvement Chart on page 16*. The final layer of information was formed as indication of the planning process.

Also, there was an acknowledgement that each public system would eventually begin to expand its service mission and take on the responsibility for planning and actually managing the wastewater facilities for all residents within its jurisdictional boundaries. This would expedite the development of facilities and be consistent with the basic goal of the WRDC. Also this would provide needed assistance to the portion of the population in the Big Sandy area that lives in areas determined impractical for sewer accessibility.

FLOYD COUNTY

Floyd County Sewer Service (map)

- Estimated 1999 population of 42,800--23% on public sewer
- Estimated 2020 population of 42,000--65% on public sewer
- Proposed projects would add about 7,700 new households to public sewer service during 2000-2020
- Estimated funding needs for public sewer 2000-2005--$24,900,000
- Estimated funding needs for public sewer 2006-2020--$37,600,000

Floyd County had an estimated population of 42,790 (16,683 households) in 1999, with a projected population of 41,920 (18,015 households) in the year 2020. Public sewer is provided to about 23 percent of the county's residents. About 13,100 households in the county use on-site wastewater treatment. About 7,700 customers could be added to public sewer service through new line extensions in 2000-2020.

FLOYD COUNTY SEWER PLAN

Proposed Projects 2000-2005

System	New Customers Served	Cost ($1000)	Line Upgrade ($1000)	Treatment Expansion ($1000)	New Treatment ($1000)	Lift Stations, and other ($1000)	Total Costs ($1000)
FLOYD							-
Beaver Elkhorn Water District							-
SW21071008	926	6,000					6,000
SW21071010	1,198	9,000			2,500		11,500
SW21071012	332	2,300					2,300
Total	**2,456**	**17,300**			**2,500**		**19,800**
Prestonsburg							-
SW2107003	257	2,500					2,500
SW21071009	191	1,800					1,800
SW21071013	102	800					800
Total	550	5,100					5,100
County Total	**3,006**	**22,400**	**-**	**-**	**2,500**		**24,900**

SEWER SERVICE AREAS
FLOYD COUNTY
Kentucky

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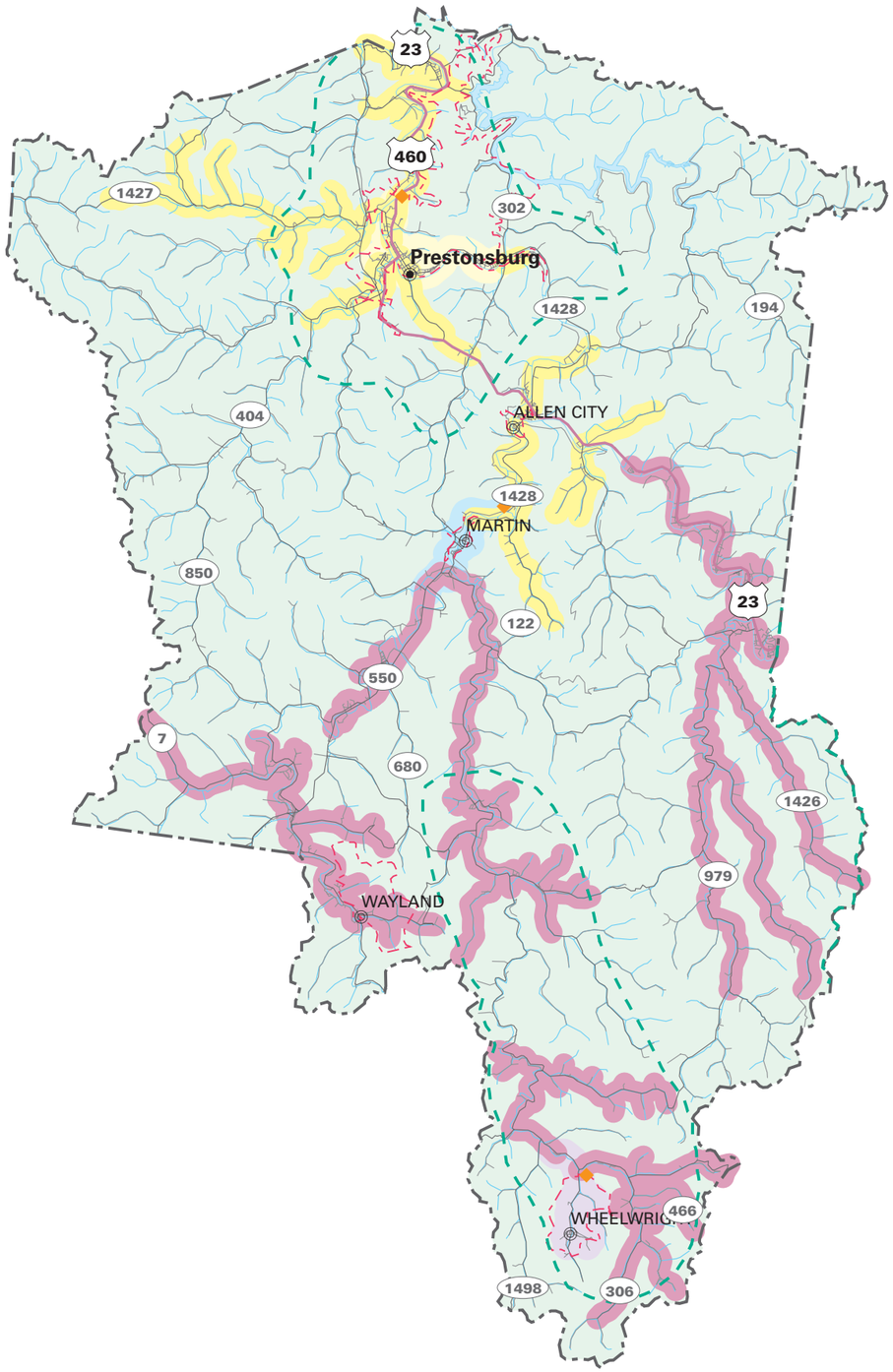

201k Facility Planning Area

Incorporated City Boundary

Sewage Treatment Plant

SEWER SERVICE STATUS BY OWNER

EXISTING SERVICE AREA	PROPOSED SERVICE AREA	
		WHEELWRIGHT UTILITY COMMISSION
		PRESTONSBURG CITY UTILITIES
		CITY OF MARTIN
		BEAVER ELKHORN WATER DISTRICT

Proposed Projects 2006-2020

System	New Customers Served	Cost ($1000)	Line Upgrade ($1000)	Treatment Expansion ($1000)	New Treatment ($1000)	Lift Stations, and other ($1000)	Total Costs ($1000)
FLOYD							-
Beaver Elkhorn Water District							-
SW21071005	855	7,000					7,000
SW21071006	563	4,200					4,200
SW21071007	981	8,000					8,000
SW21071011	463	3,400		2,000			5,400
SW21071012	331	2,300					2,300
Total	3193	24,900		2,000			26,900
Prestonsburg SW21071001	770	4,000					4,000
SW21071002	351	4,600					4,600
SW21071004	386	2,100					2,100
Total	1,507	10,700					10,700
County Total	**4,700**	**35,600**	**-**	**2,000**			**37,600**

Floyd County has three wastewater municipality plants. The plants are located in Prestonsburg, Martin, and Wheelwright. According to the census of 1990, Floyd County had 17,169 total housing units with 15,664 of them being occupied. The majority of the housing units were built before 1980. This indicates that the majority of the existing septic systems are of twenty or more years of age. Out of the total number of housing units 713 of them are lacking complete plumbing facilities.

Only 3,561 housing units dispose of sewer through public collection systems. Public sewer provides services for nearly 23% of the total occupied households in the county. The other 77% of the housing units not reached by public systems dispose of sewer through other means, primarily septic systems. Floyd County also has package treatment plants. In the past, these package treatment plants had limited functioning ability and often failed from lack of maintenance and repair.

Floyd County is a large county that needs to expand the services of pubic sewage collection. The major communities in the county that needs sewer collection services are Auxier, Betsy Lane, Bosco, Garret, and High Hat. Waste collection systems in these areas would provide potential services for 16,000 people.

PRESTONSBURG UTILITY COMPANY

The Prestonsburg City Utility Company is a municipal utility commission. The plant is located in Prestonsburg. Prestonsburg is the county seat of Floyd County with a population of 3,550. The wastewater plant needs to expand services of sewer collection for an additional 200 customers.

The wastewater plant is an operational treatment plant designed to treat a total flow of 1.000 MGD at a secondary level of treatment. The plant facility is an extended aeration system. The destination of the effluent is the Levisa Fork of the Big Sandy River.

The wastewater plant serves 1,617 total customers. Residential use makes up 1,257 of the total amount of customers. The sewer rates are $4.60 for the first 2,000 gallons inside the city and $6.60 for the first 2,000 gallons outside the city.

The wastewater plant requires a Class II operator. There are a total of four plant operators. Three of the plant operators are of Class II status and the fourth operator is of Class III status. The operators update the training requirements as indicated by the Kentucky Division of Water.

The facility has a routine maintenance and a policy manual in place. The pump stations are inspected daily. The system rarely fails. Flooding may offer seasonal trouble to the system.

The Prestonsburg City Utility Company needs to expand wastewater collection services for the small communities around the city. Many of these communities are served with wastewater alternatives that are out of compliance.

Proposed Projects

Construction process begins at Allen extending northward on U.S 23 to Rt. 80 and Rt.3 intersection from intersection eastward to Rt. 1428. The service southward from Allen along U.S. 23 until Davis Branch.

The proposed wastewater improvements made to Floyd County consist of 13 projects at a cost of $ 62,500,000 serving 7,700 total number of households. Below is a breakdown of proposed projects:

Project SW21071001 owned by Prestonsburg City Utilities would provide services to 770 households along Rt. 321 from Prestonsburg sewer boundaries to the Highlands Hospital. The services would also include Rt. 302 and Rt. 3051. The project cost is $4,000,000.

Project SW21071002 owned by Prestonsburg City Utilities would provide services for 351 households beginning near Cliff Road on Rt. 1428, then crossing U.S. 23 and continuing southward unit it branches at Rt. 1427 providing services for households along Rt. 1427 and Rt. 1750. The other branch provides services for Big Branch. The project cost is $4,600,000.

Project SW21071003 owned by Prestonsburg City Utilities would provide services to 257 households from the intersection of Rt. 1428 in Prestonsburg continuing to Rt.114 branching at Rt. 2555. Service will continue on these routes until the two intersect and continues services on Rt. 114 until Clark Elementary. The project cost is $2,500,000.

Project SW21071004 owned by Prestonsburg City Utilities would provide services to 386 households. Service would be provided for the Dwale area as services along Rt. 1428 from Allen to Martin. The services would also include Rt. 302 and Rt. 3051. The project cost is $2,100,000.

Project SW21071005 owned by Beaver Elkhorn Water District would provide services to 855 households. The service area includes from the intersection of Rt. 2030 on 122 through McDowell. The project cost is $7,000,000.

Project SW21071006 owned by Beaver Elkhorn Water District would provide services to 563 households. The service area extends from Martin on 122 to the junction of Rt. 2030. The project cost is $4,200,000.

Project SW21071007 owned by Beaver Elkhorn Water District would provide services to 981 households. The service area includes Rt. 979 until it forks at Rt.3379 extending past Pigeon Roost Branch. The other branch goes on until the Rt. 3380 junction. The project cost is $8,000,000.

Project SW21071008 owned by Beaver Elkhorn Water District would provide services to 926 households. The service area includes U.S. 23 from Davison Branch southward to the Pike County Line branching onto 1426 and 979. The project cost is $6,000,000.

Project SW21071009 owned by Prestonsburg City Utilities would provide services to 191 households. The service area includes the area along U.S 23 from Daniel's Creek onto 1426 serving Haus Branch and Akers Branch. The project cost is $1,800,000.

Project SW21071010 owned by Beaver Elkhorn Water District would provide services to 1,198 households. The service area includes Rt. 7 from Rt. 80 southward forking at Rt.1086 and Rt. 777. The service from intersection of Rt. 80 northward on Rt. 7 forking at Rt. 550 and continuing to the Magoffin County Line. The project cost is $11,500,000.

Project SW21071011 owned by Beaver Elkhorn Water District would provide services to 463 households. The service area includes Rt. 122 through Price to the intersection of Rt. 466 forking at Rt. 971 and ending at Ligon. The upgrade cost is $2,000,000.

Project SW21071012 owned by Beaver Elkhorn Water District would provide services to 663 households. The service includes area from the intersection of Rt. 122 and Rt. 466 extending to Pike County and providing services to Weeksbury. The project cost is $4,600,000.

Project SW21071013 owned by Prestonsburg City Utilities would provide services to 102 households along Rt. 321. The project cost is $800,000.

MARTIN SEWER PLANT

Martin Sewer is a municipality owned by the city of Martin. The plant is located in Martin. The City of Martin is located in the center of the county on Highway 1428. Martin has a population of approximately 1,400 people.

The wastewater plant is an operational treatment plant and wastewater collection system. The facility is designed to treat a total flow of 0.114 MGD at a secondary level of treatment. The type of facility is an oxidation ditch. The destination of the effluent is Beaver Creek.

The facility serves about 325 total customers. Residential use makes up the majority of the customers. The sewer rate is $10.25 for first 2,000 gallons. The sewer tap on fee is $250.00.

The wastewater plant requires a Class II operator. There is one full time employee who is the operator with Class III qualifications. The operator goes through update training every two years as indicated by the Division of Water.

The wastewater facility has a routine maintenance program and a policy manual in place. The system often fails. Pump stations and line breaks are the two main sources of problems with the system. All materials of the system are old and need to be replaced. Flooding also occurs with heavy rainfall.

Martin Sewer could expand to other communities around the city if improvements to the system were made. Many areas around Martin depend on alternative wastewater methods for sewage disposal. These methods are often out of compliance.

WHEELWRIGHT WASTEWATER TREATMENT PLANT

The Wheelwright Wastewater Treatment Plant is a utility commission owned by the city of Wheelwright. The plant is located in Wheelwright. Wheelwright is an incorporated city with a population of about 1,000 people.

The wastewater plant is an operational treatment facility and wastewater collection system, designed to treat a total flow of 0.225 MGD at a secondary level of treatment. The plant is an extended aeration facility. The destination of the effluent is Right Otter Creek a subsidiary of the Big Sandy River.

The facility provides services for most of the population in the city of Wheelwright. Only 200 of the 1,000 people do not have access to the system. The treatment facility has recently been upgraded, but the need for additional collector lines to serve the extra 200 people still exists. The waste plant provides services for 325 customers. Residential use makes up 309 of the total amount of customers. The sewer rates are $12.00 minimum for the first 2,000 gallons. The tap on fee is $250.00.

The wastewater plant requires a Class II operator. There are three operators at the plant with only two of them being full-time. Two of the operators are of Class I status while the other operator is of Class III status. The operators receive training requirements to be in compliance with the Division of Water.

The wastewater plant has a routine maintenance program and a policy manual in place. The wastewater plant has inspections daily. The plant fails periodically primarily due to line breaks.

JOHNSON COUNTY

Johnson County Sewer Service (map)

- Estimated 1999 population of 24,200--30% on public sewer
- Estimated 2020 population of 24,500--50% on public sewer
- Proposed projects would add about 2,000 new households to public sewer service during 2000-2020
- Estimated funding needs for public sewer 2000-2005--$12,300,000
- Estimated funding needs for public sewer 2006-2020--$8,800,000

Johnson County had an estimated population of 24,193 (9,543 households) in 1999, with a projected population of 24,500 (10,672 households) in the year 2020. Public sewer is provided to about 30 percent of the county's residents. About 6,700 households in the county use on-site wastewater treatment. About 2,000 customers could be added to public sewer service through new line extensions in 2000-2020.

JOHNSON COUNTY SEWER PLAN

Proposed Projects 2000-2005

System	New Customers Served	Cost ($1000)	Line Upgrade ($1000)	Treatment Expansion ($1000)	New Treatment ($1000)	Lift Stations, and other ($1000)	Total Costs ($1000)
JOHNSON							-
Paintsville							-
SW21115001	345	3,000					3,000
SW21115004	427	2,300					2,300
SW21115005	95	1,700					1,700
SW21115006	102	500					500
SW21115007	70	500					500
SW21115008	216	2,000					2,000
SW21115010	176	900					900
SW21115011	210	1,400					1,400
Total	**1,641**	**12,300**					**12,300**

Proposed Projects 2006-2020

System	New Customers Served	Cost ($1000)	Line Upgrade ($1000)	Treatment Expansion ($1000)	New Treatment ($1000)	Lift Stations, and other ($1000)	Total Costs ($1000)
JOHNSON							-
Paintsville							-
SW21115002	100	1,500					1,500
SW21115009	165	1,500		5,000			6,500
SW21115012	47	800					800
Total	**312**	**3,800**		**5,000**			**8,800**

SEWER SERVICE AREAS
JOHNSON COUNTY
Kentucky

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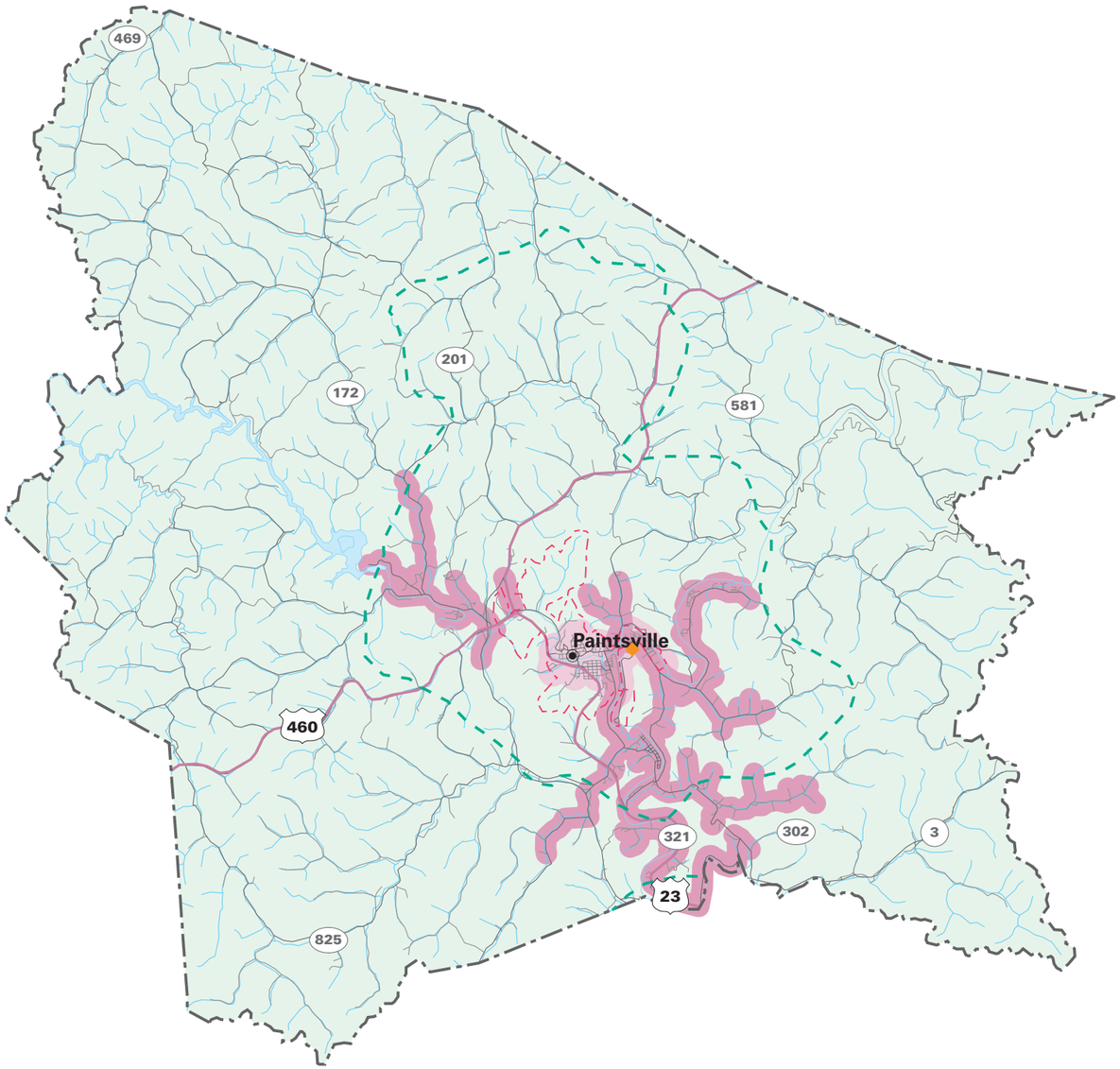

201k Facility Planning Area

Incorporated City Boundary

Sewage Treatment Plant

SEWER SERVICE STATUS BY OWNER

EXISTING SERVICE AREA **PROPOSED SERVICE AREA**

PAINTSVILLE UTILITIES COMMISSION

Johnson County has one wastewater municipality plant located in Paintsville. According to the census of 1990, Johnson County had 9,381 total housing units with 8,469 of them being occupied. The majority of the housing units were built before 1980. This indicates that the majority of the existing septic systems are of twenty or more years of age. Out of the total number of housing units 515 of them are lacking complete plumbing facilities.

Only 2,651 housing units dispose of sewer through public collection systems. Public sewer provides services for nearly 31.3% of the total occupied households in the county. The other 68% of the housing units not reached by public systems dispose of sewer through other means, primarily septic systems. Johnson County also has package treatment plants. In the past, these package treatment plants had limited functioning ability and often failed from lack of maintenance and repair.

Johnson County needs to expand the services of pubic sewage collection. The county is working to provide services for areas in the proximity of the Honey Branch Industrial Park. These areas include Van Lear, West Van Lear, and Hagerhill.

PAINTSVILLE WASTEWATER TREATMENT PLANT

The Paintsville Wastewater Treatment Plant is a municipality owned by the Paintsville Utility Commission. The plant is located in the city of Paintsville. Paintsville is the county seat of Johnson County and has a population of about 4,400.

The wastewater plant is an operational treatment plant designed to treat 0.994 MGD of flow at a secondary level of treatment. The type of the facility is an oxidation ditch with an intra channel clarifier. The destination of the effluent is the Levisa Fork of the Big Sandy River.

The wastewater plant serves 1,698 total customers. Residential use makes up nearly 1,398 of the total customers. The sewer rates are $7.38 minimum for the first 2,000 gallons. The sewer tap on fee for the city is $300.00.

The wastewater plant requires a Class II operator. There are a total of 18 employees associated with the plant. Ten of the employees are the maintenance crew, five office personnel, and three plant operators. One operator has a Class III classification, another has a Class II classification, and another operator is a trainee. The operators are required to update training yearly.

The wastewater plant consists of routine maintenance of the facility and scheduled inspections of manholes. The wastewater plant rarely fails but has non-frequent problems associated with power outages, pump stations, and flooding manholes. The facility also contains a plan that covers emergency responses.

There are several small communities near Paintsville that are served by individual septic systems and/or small package plants, which are often out of compliance. It should be feasible for Paintsville to run sewer line extensions to these communities in order to protect the waters of the Commonwealth.

Construction area includes from the Floyd County line onto Rt. 2559 through Hagerhill and Van Lear. New construction also includes the area from Paintsville to Thealka.

Proposed Projects

The proposed wastewater improvements made to Johnson County consist of 11 projects at a cost of $21,100,000 serving 1,953 total number of households. Below is a breakdown of proposed projects:

Project SW21115001 owned by Paintsville Utilities would provide services to 345 households. The service area includes Rt. 40 west from Paintsville's sewer limits through the Staffordsville forks on Rt. 172 and continues to Volga. The project cost is $3,000,000, including an upgrade cost of $946,526.

Project SW21115002 owned by Paintsville Utilities would provide services to 100 households. The service area includes Hagerhill on Rt. 1750 and extending on Rt. 3388 into Paintsville. The project cost is $1,500,000, including an upgrade cost of $472,005.

Project SW21115004 owned by Paintsville Utilities would provide services to 427 households. The service area includes Van Lear to Rt. 302. The project cost is $2,300,000, including an upgrade cost of $721,577.

Project SW21115005 owned by Paintsville Utilities would provide services to 95 households. The project cost is $1,700,000, including an upgrade cost of $531,485.

Project SW21115006 owned by Paintsville Utilities would provide services to 102 households. The project cost is $500,000.00, including an upgrade cost of $145,873.

Project SW21115007 owned by Paintsville Utilities would provide services to 70 households. The service area includes Rt. 40 to Rt. 1107 past Dawkins. The project cost is $500,000, including an upgrade cost of $145,873.

Project SW21115008 owned by Paintsville Utilities would provide services to 216 households. The service area extends from Thelma northward on Rt. 1107. The project cost is $2,000,000, including an upgrade cost of $637,397.

Project SW21115009 owned by Paintsville Utilities would provide services to 165 households. The service area includes Rt. 40 from the Paintsville sewer limits to Meally. The project cost is $6,500,000, including an upgrade cost of $5,470,246.

Project SW211150010 owned by Paintsville Utilities would provide services to 176 households. The service area includes extension past Thealka on Rt. 581. The project cost is $900,000, including an upgrade cost of $226,877.

Project SW211150011 owned by Paintsville Utilities would provide services to 210 households. The service area includes Rt. 302 into Hager Hill. The project cost is $1,400,000, including an upgrade cost of $412,543.

Project SW211150012 owned by Paintsville Utilities would provide services to 47 households. Service area includes extension on Rt. 2381. The project cost is $800,000, including an upgrade cost of $260,995.

MAGOFFIN COUNTY

Magoffin County Sewer Service (map)

- Estimated 1999 population of 13,900--15% on public sewer
- Estimated 2020 population of 15,200--40% on public sewer
- Proposed projects would add about 1,400 new households to public sewer service during 2000-2020
- Estimated funding needs for public sewer 2000-2005--$8,150,000
- Estimated funding needs for public sewer 2006-2020--$10,150,000

Magoffin County had an estimated population of 13,853 (5,074 households) in 1999 with a projected population of 15,200 (6,222 households) in 2020. Public sewer is provided to about 15 percent of the households. About 4,300 households use on-site systems. About 1,400 customers could be added to public sewer service through new line extensions in 2000-2020.

MAGOFFIN COUNTY SEWER PLAN

Proposed Projects 2000-2005

System	New Customers Served	Cost ($1000)	Line Upgrade ($1000)	Treatment Expansion ($1000)	New Treatment ($1000)	Lift Stations, and other ($1000)	Total Costs ($1000)
MAGOFFIN							-
Salyersville							-
SW21153001	291	3,100		4,000			7,100
SW21153007	29	1,050					1,050
Total	**320**	**4,150**		**4,000**			**8,150**

Proposed Projects 2006-2020

System	New Customers Served	Cost ($1000)	Line Upgrade ($1000)	Treatment Expansion ($1000)	New Treatment ($1000)	Lift Stations, and other ($1000)	Total Costs ($1000)
MAGOFFIN							-
Salyersville							-
SW21153002	45	1,000					1,000
SW21153003	693	3,600					3,600
SW21153006	213	2,700					2,700
SW21153007	30	1,050					1,050
SW21153008	101	1,800					1,800
Total	**1,082**	**10,150**					**10,150**

Magoffin County has one wastewater municipality plant located in Salyersville. The plant is limited in the amount of services it can offer. According to the census of 1990, Magoffin

SEWER SERVICE AREAS
MAGOFFIN COUNTY
Kentucky

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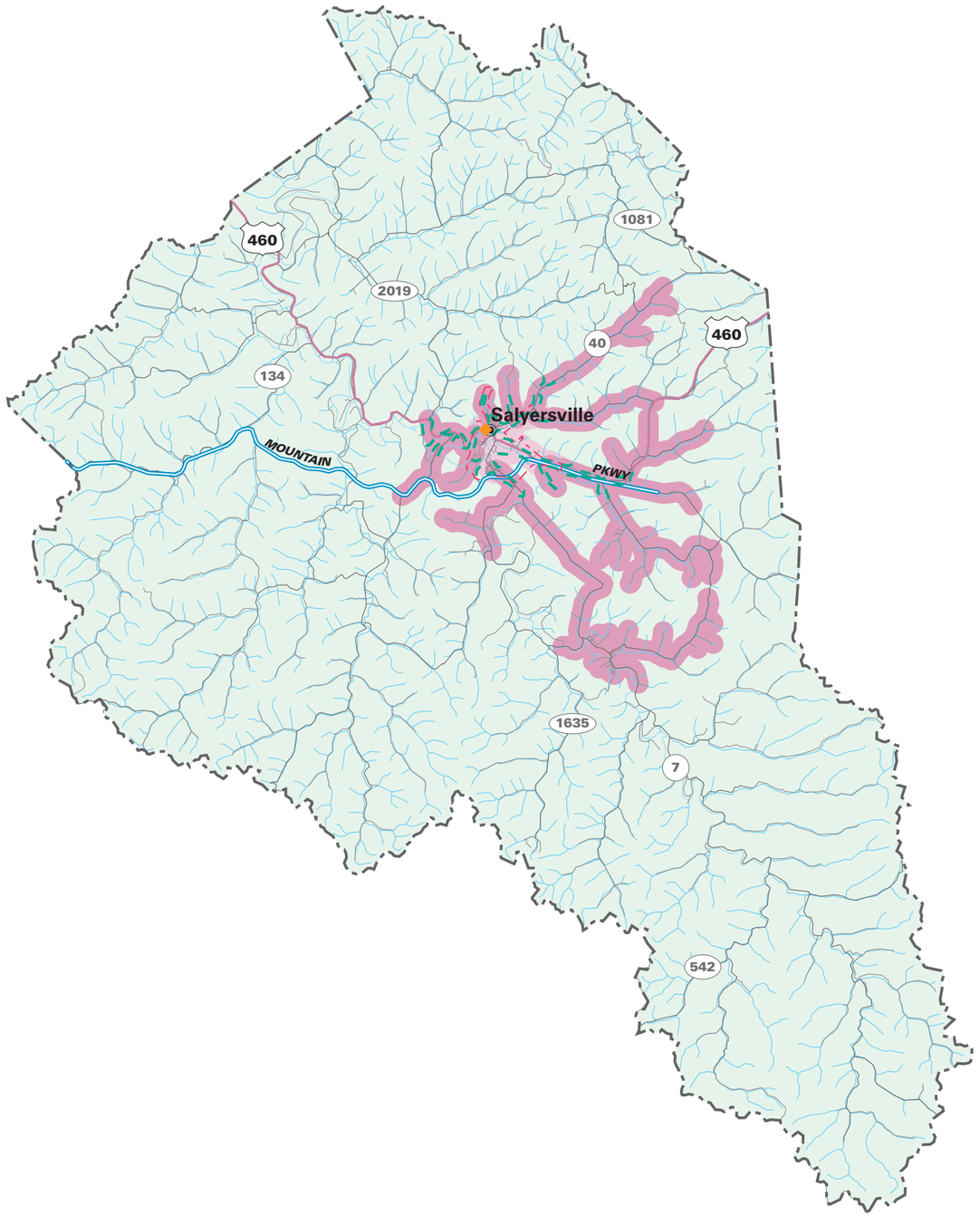

- 201k Facility Planning Area
- Incorporated City Boundary
- Sewage Treatment Plant

SEWER SERVICE STATUS BY OWNER

EXISTING SERVICE AREA	PROPOSED SERVICE AREA
	SALYERSVILLE WATER WORKS

County had 4,800 total housing units with 4,400 of them being occupied. The majority of the housing units were built before 1980. This indicates that the majority of the existing septic systems are of twenty or more years of age. Out of the total number of housing units, 392 of them are lacking complete plumbing facilities.

Only 686 housing units dispose of sewer through public collection systems. Public sewer provides services for nearly 16% of the total occupied households in the county. The other 84% of the housing units not reached by public systems dispose of sewer through other means, primarily septic systems.

Magoffin County needs to expand sewer collection services. Potential services may include the completion of the Royalton project.

SALYERSVILLE WASTEWATER TREATMENT PLANT

The Salyersville Wastewater Treatment Plant is a municipality owned by the Salyersville Water Works. The plant is located in Salyersville. Salyersville, with a population of about 2,000 people, is the county seat of Magoffin County.

The facility is designed to treat a total flow of 0.174 MGD at an advanced secondary level of treatment. The plant is a secondary level of treatment and is an extended air type facility. The destination of the effluent is the Licking River.

The wastewater treatment plant serves 663 total customers. Residential use makes up 564 of the total customers. The facility serves a population of 1,922. The Salyersville Water Works charges three rates. The residential charge is $7.50 minimum for the first 2,000 gallons. The plant then charges a $11.50 minimum for commercial use inside the city, and a $15.50 minimum for commercial use outside the city. The sewer tap fee for the same side of the road is $300 and opposite side of the road is $325.

The wastewater plant requires a Class II operator. There are a total of three employees associated with the plant. The plant has two operators each holding Class II classifications. The operators are required to update training yearly as recommended by the Division of Water.

The wastewater plant has a routine maintenance program and a policy manual. The system rarely fails but the treatment plant is located in a low-lying area and gets flooded easily. There are 173 manholes in the sewer collection system.

There are many households from Salyersville to Royalton that depend on alternative wastewater disposal methods. These disposal methods such as septic systems are often out of compliance. It should be feasible to extend lines from Salyersville and complete the Royalton project.

Proposed Projects

New construction includes areas from Salyersville to Royalton on Rt. 7, Rt. 114 to Rt. 1180 eastward, and the City of Salyersville past Rt. 30.

The proposed wastewater improvements made to Magoffin County consist of 6 projects at a cost of $ 14,300,000 serving 1,402 total number of households. Below is a breakdown of proposed projects:

Project SW21153001 owned by Salyersville Water Works would provide services to 291 households. The service area includes along Rt. 30 and Rt. 7 to Swampton. The project cost is $7,100,000, including an upgrade cost of $4,000,000.

Project SW21153002 owned by Salyersville Water Works would provide services to 45 households. The service area includes Rt. 1090 off of Rt. 7. The project cost is $1,000,000.

Project SW21153003 owned by Salyersville Water Works would provide services to 693 households. The service area includes Rt. 460 to Rt. 114, Rt. 460 to Rt. 1415, and Rt. 1888 off of Rt. 460 to Ivyton. The project cost is $3,600,000.

Project SW21153006 owned by Salyersville Water Works would provide services to 213 households. The service area includes along Rt. 40 to Falcon. The project cost is $2,700,000.

Project SW21153007 owned by Salyersville Water Works would provide services to 59 households. The service area includes portions inside Salyersville. The project cost is $2,100,000.

Project SW21153008 owned by Salyersville Water Works would provide services to 101 households. The service area includes along Rt. 867 from Royalton. The project cost is $1,800,000.

MARTIN COUNTY

Martin County Sewer Service (map)

- Estimated 1999 population of 11,900--15% on public sewer
- Estimated 2020 population of 10,600--40% on public sewer
- Proposed projects would add about 1,000 new households to public sewer service during 2000-2020
- Estimated funding needs for public sewer 2000-2005--$4,600,000
- Estimated funding needs for public sewer 2006-2020--$9,400,000

Martin County had an estimated population of 11,939 (4,319 households) in 1999, with a projected population of 10,600 (4,302 households) by the year 2020. Public sewer is provided to about 15 percent of the county's residents. About 3,700 households in the county use on-site treatment systems. About 1,000 customers could be added to public sewer service through new line extensions in 2000-2020.

MARTIN COUNTY SEWER PLAN

Proposed Projects 2000-2005

System	New Customers Served	Cost ($1000)	Line Upgrade ($1000)	Treatment Expansion ($1000)	New Treatment ($1000)	Lift Stations, and other ($1000)	Total Costs ($1000)
MARTIN							-
Inez							-
SW21159001	465	3,000			1,600		4,600

Proposed Projects 2006-2020

System	New Customers Served	Cost ($1000)	Line Upgrade ($1000)	Treatment Expansion ($1000)	New Treatment ($1000)	Lift Stations, and other ($1000)	Total Costs ($1000)
MARTIN							-
Inez							-
SW21159002	119	2,100					2,100
SW21159003	94	1,500					1,500
SW21159004	44	1,700		2,000			3,700
SW21159005	260	2,100					2,100
Total	517	7,400		2,000			9,400

Martin County has one wastewater municipality plant located in Inez. The plant is limited in the amount of services it can offer. According to the census of 1990, Martin County had 4,697 total housing units with 4,300 of them being occupied. The majority of the housing units were built before 1980. This indicates that the majority of the existing septic systems

SEWER SERVICE AREAS
MARTIN COUNTY
Kentucky

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Data Collection & GIS Input By:
Kentucky Area Development Districts

201k Facility Planning Area

Incorporated City Boundary

Sewage Treatment Plant

SEWER SERVICE STATUS BY OWNER

EXISTING SERVICE AREA **PROPOSED SERVICE AREA**

INEZ WASTE WATER

are of twenty or more years of age. Out of the total number of housing units 213 of them are lacking complete plumbing facilities.

Only 706 housing units dispose of sewer through public collection systems. Public sewer provides services for nearly 16.5% of the total occupied households in the county. The other 83.5% of the housing units not reached by public systems dispose of sewer through other means, primarily septic systems. Martin County also has package treatment plants. In the past, these package treatment plants had limited functioning ability and often failed from lack of maintenance and repair.

Martin County needs to expand the services of pubic sewage collection. Warfield and the surrounding communities of Beauty and Lovely are in need of these sewer collection services.

INEZ WASTEWATER TREATMENT PLANT

The Inez Wastewater Treatment plant is a municipality owned by the city of Inez. The plant is located in Inez. Inez, with a population of 525, is the county seat of Martin County.

The wastewater plant is an operational treatment plant and wastewater collection system. The facility is designed to treat a total flow of 0.260 MGD at an advanced secondary level of treatment. Inez wastewater plant is a secondary treatment system and is an extended aeration facility that is projected for an undefined change in the future. The treatment plant is relatively new, and most of the collection lines are in good condition. The destination of the effluent is Rockcastle Creek in Martin County, a subsidiary of the Big Sandy River.

The wastewater plants serves 550 total customers. Residential use makes up 506 of the total customers. The sewer rates are $11.66 minimum for the first 2,000 gallons.

The wastewater plant requires a Class II operator. There is only one full time employee and he is also the plant operator. The operator is of Class II status and is required to update training annually.

The wastewater plant has a routine maintenance program and scheduled inspections of manholes. There are eleven manholes in the sewer collection system. The collection system rarely fails. The main element in system failure is flooding.

Proposed Projects

The proposed wastewater improvements made to Martin County consist of 5 projects at a cost of $14,000,000 serving 982 total households. Below is a breakdown of proposed projects:

Project SW21159001 owned by Inez Wastewater would provide services to 465 households. The service area includes along Rt. 40 from Inez to Warfield, extending north on Rt. 292 to Lovely and south on Rt. 292 to Hode. The project cost is $4,600,000, including $1,600,000 for new treatment.

Project SW21159002 owned by Inez Wastewater would provide services to 119 households. The service area includes along Rt. 3 from Inez to Grassy. The project cost is $2,100,000.

Project SW21159003 owned by Inez Wastewater would provide services to 94 households. The service area includes along Rt. 40 from Inez westward to Tomahawk. The project cost is $1,500,000.

Project SW21159004 owned by Inez Wastewater would provide services to 44 households. The service area includes along Rt. 645 from Inez to Rt. 3 to Davella, forking at Rt. 3412. The project cost is $3,700,000, including $2,000,000 for treatment expansion.

Project SW21159005 owned by Inez Wastewater would provide services to 260 households. The service area includes along Rt. 40 from Inez to Rt. 645 at Sheldon Clark High School to Coldwater Road. The project cost is $2,100,000.

WARFIELD WASTEWATER TREATMENT PLAN T

Warfield needs a sewer collection system. Warfield is an incorporated city situated along the West Virginia State line. There is no form of public wastewater treatment in Warfield. Individual septic systems and package plants presently serve it. The communities of Beauty and Lovely, populations 500 and 700 respectively, are within close enough proximity to Warfield to possibly receive treatment from the Warfield facility.

PIKE COUNTY

Pike County Sewer Service (map)

- Estimated 1999 population of 72,000--15% on public sewer
- Estimated 2020 population of 70,400--50% on public sewer
- Proposed projects would add about 10,400 new households to public sewer service during 2000-2020
- Estimated funding needs for public sewer 2000-2005--$27,800,000
- Estimated funding needs for public sewer 2006-2020--$81,500,000

Pike County had a population of 72,000 (27,827 households) in 1999 with a projected population of 70,400 (30,300 households) in 2020. Public sewer is provided to about 15 percent of the county's residents. About 24,000 households treat wastewater on site. About 10,400 new customers could be added to public sewer service through new line extensions in 2000-2020.

PIKE COUNTY SEWER PLAN

Proposed Projects 2000-2005

System	New Customers Served	Cost ($1000)	Line Upgrade ($1000)	Treatment Expansion ($1000)	New Treatment ($1000)	Lift Stations, and other ($1000)	Total Costs ($1000)
PIKE							-
Mountain Water District							-
SW21195002	1300	9,000					9,000
SW21195005	1661	12,000					12,000
SW21195007	278	2,000					2,000
SW21195008	331	2,500					2,500
Total	3570	25,500					25,500
							-
Elkhorn City SW21195004	97	1,300		1,000			2,300
Total	**3,667**	**26,800**	**-**	**1,000**			**27,800**

SEWER SERVICE AREAS
PIKE COUNTY
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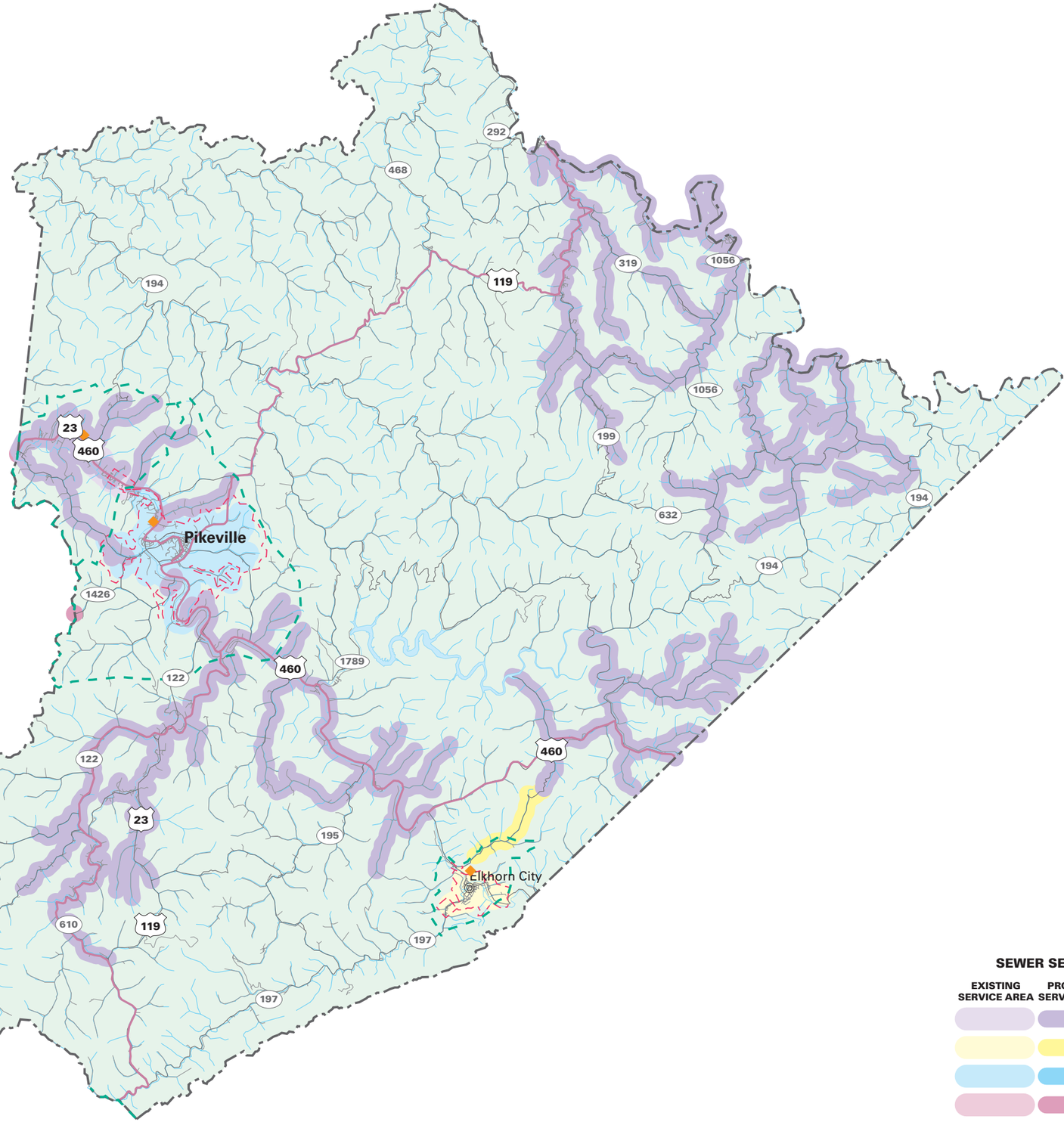

201k Facility Planning Area

Incorporated City Boundary

Sewage Treatment Plant

SEWER SERVICE STATUS BY OWNER

EXISTING SERVICE AREA	PROPOSED SERVICE AREA	
		MOUNTAIN WATER DISTRICT
		ELKHORN CITY WATER DEPARTMENT
		CITY OF PIKEVILLE
		BEAVER ELKHORN WATER DISTRICT

Proposed Projects 2006-2020

System	New Customers Served	Cost ($1000)	Line Upgrade ($1000)	Treatment Expansion ($1000)	New Treatment ($1000)	Lift Stations, and other ($1000)	Total Costs ($1000)
PIKE							-
Mountain Water District							-
SW21195001	1526	15,000		5,000			20,000
SW21195002	1307	9,000		7,000			16,000
SW21195003	1014	11,000			4,000		15,000
SW21195007	1000	10,000					10,000
SW21195008	1860	13,500		7,000			20,500
Total	**6,707**	**58,500**		**19,000**	**4,000**		**81,500**

Pike County has two wastewater municipality plants and one plant owned by a special district. The municipality plants are located in Pikeville and Elkhorn City. According to the census of 1990, Pike County had 28,760 total housing units with 26,148 of them being occupied. The majority of the housing units were built before 1980. This indicates that the majority of the existing septic systems are of twenty or more years of age. Out of the total number of housing units 792 of them are lacking complete plumbing facilities.

Only 3,948 housing units dispose of sewer through public collection systems. Public sewer provides services for nearly 15% of the total occupied households in the county. The other 85% of the housing units not reached by public systems dispose of sewer through other means, primarily septic systems. Pike County also has package treatment plants. In the past, these package treatment plants had limited functioning ability and often failed from lack of maintenance and repair.

Pike County is a very large county that needs to expand the services of pubic sewage collection. The county provides sewer collection for approximately 13,000 people. The major communities in the county that needs sewer collection services are McVeigh, Phelps, Shelbiana, and South Williamson.

CITY OF PIKEVILLE WASTEWATER SYSTEMS

The Pikeville Wastewater Treatment Plant is a municipality owned by the city of Pikeville. The plant is located in the city of Pikeville. Pikeville is the county seat of Pike County and has a population of about 6,300 people.

The Pikeville Wastewater Treatment Plant is designed to treat 2.000 MGD of flow at a secondary level of treatment. The plant is an extended aeration facility. The plant is in good

condition. There is plenty of capacity for now, so half of the plant is used to hold sludge until some needed work can be completed on the sludge press. The collection system needs some larger interceptor lines and also has some infiltration/inflow that needs some rehabilitation. Pikeville is one of the communities in Pike County that has combined stormwater and wastewater sewers. The effluent is discharged in the Levisa Fork of the Big Sandy River.

The wastewater plant serves the city of Pikeville and surrounding communities. The sewer rates are $6.42 minimum for the first 2,000 gallons inside the city and $15.00 minimum for the first 2,000 gallons outside the city.

The wastewater plant requires a Class II operator. There are two full time employees and one part time employee. All three employees are operators. One operator has Class III qualifications, while the other operators have Class II qualifications. Each operator completes state-determined training.

The wastewater facility has routine maintenance programs and a policy manual in place. The system rarely fails but flooding causes large amounts of input and infiltration causing overflow.

There are several small communities near Pikeville that are served by wastewater alternative methods that are often out of compliance. It should be feasible to expand services for these communities so that wastewater collection could be provided.

ELKHORN CITY WASTEWATER SYSTEMS

The Elkhorn City Wastewater System is owned by the city of Elkhorn. The plant is located in Elkhorn City. Elkhorn City has a population of about 900 people.

The wastewater treatment plant is an operational treatment facility designed to treat a total flow of 0.150 MGD at a secondary level of treatment. The facility is an operational treatment plant and wastewater collection system projected for an undefined change in the future. Elkhorn City could serve the neighboring communities of Cedarville, Little Beaver Creek, and Senterville.

The wastewater plant serves about 1,300 customers. Residential use makes up the majority of the customers. The sewer rates are $ 11.96 minimum for the first 2,000 gallons inside the city and $13.75 minimum for the first 2,000 gallons outside the city. The sewer tap fee for all hook ups is $475.00.

The wastewater plant requires a Class II operator. There is one operator at the facility who has Class II qualifications. The operator is required to update qualifications as determined by the state and the Division of Water.

The wastewater plant has a routine maintenance program and a policy manual in place. The system rarely fails but flooding does occur.

Elkhorn City needs to upgrade the wastewater system in order to provide services for the small communities that surround the city.

Proposed Projects

Project SW21195004 owned by City of Elkhorn Wastewater would provide services to 97 households. The service area includes from Elkhorn City to Rt. 1373. The project cost is $2,300,000, including a treatment expansion cost of $1,000,000.

MOUNTAIN WATER DISTRICT

The Mountain Water District is a special district. Mountain Water District serves the areas of Coal Run and Mossy Bottom. These two areas have a growing dependency for wastewater services as residential and commercial population expands.

The wastewater treatment plant is designed to treat 200,000 gallons daily. Residential cost for the treatment is $10.55 per thousand gallons for the first 2,000 gallons.

The Mountain Water District has a total of 141 connections. Residential hook ups make up a total of 82 of those connections. The Mountain Water District's wastewater plant is in need of some treatment plant and line work.

The wastewater plant requires a Class II operator. There are two full time employees that are of Class II qualifications. The operators update training as indicated by the state.

The wastewater facility has a routine maintenance program and a policy manual in place. The system rarely fails but problems may be the result of power outages and flooding. The system would need improvements to expand services to more communities.

Proposed Projects

Project SW21195001 owned by Mountain Water would provide services to 1,526 households. The service area includes along Rt. 194 and covers Majest, Stopover, Jamboree, and Phelps. The project cost is $20,000,000, including a treatment expansion cost of $5,000,000.

Project SW21195002 owned by Mountain Water would provide services to 2,607 households. The service area includes along Rt. 119 around Goody, runs south down Rt. 292, forks at Rt. 319, runs into Rt. 199, forks at Rt. 1056, and hooks back up with Rt. 292. The project cost is $16,000,000, including a treatment expansion cost of $7,000,000.

Project SW21195003 owned by Mountain Water would provide services to 1,014 households. The service area includes along Rt. 1373 to Mouthcard following Rt. 1499 to Fedscreek and continues to the Virginia State line. The project cost is $15,000,000, including a cost of $4,000,000 for new treatment.

Project SW21195005 owned by Mountain Water would provide services to 1,661 households. The service area includes along Rt. 1384 from Pikeville to the intersection with U.S 23 and U.S. 460 and covers Mossy Bottom and Coal Run. The project cost is $12,000,000.

Project SW21195007 owned by Mountain Water would provide services to 1,278 households. The service area includes along U.S. 460 and Rt. 80 from U.S. 23 ending in Belcher, having forked at Rt. 3226. The project cost is $12,000,000.

Project SW21195008 owned by Mountain Water would provide services to 2,191 households. The service area includes along U.S 23 from the intersection of routes 460 and 80 southward, continues on Rt. 122, branches onto Rt. 1469 going to Hartky and Rt. 5610 going to Dorton. The project cost is $16,000,000, including a treatment expansion cost of $7,000,000.