

Strategic Water Resource Development Plan

Summary of Wastewater Treatment Systems

Green River Area Development District

Water Resource Development Commission

March, 2000

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Green River Area Development District

3860 U.S. Highway 60, West
 Owensboro, KY 42301
 (502) 926-4433

ADD Sewer Service (map)

- Estimated 1999 population of 204,000--61% on public sewer
- Estimated 2020 population of 213,000--63% on public sewer
- Proposed projects would connect almost 2,500 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$22,500,000
- Estimated funding needs for public sewer 2006-2020--\$21,600,000

The Green River Area Development District region had an estimated population of 203,649 (83,018 households) in 1999 with a projected population of 213,000 (93,300 households) in 2020. Public sewer systems serve 124,000 area residents, or 61 percent of the population. Proposed sewer line extensions for the period 2000-2020 would provide service to an additional 2,500 households. About 80,000 people in the region currently rely on on-site treatment systems.

Estimated populations and public water service for the seven counties in the region is given below (21 public sewer systems serve the region):

County	1999 Pop	On Public	2020 Pop	On Public
Daviess	90,300	65,900 (73%)	94,100	68,700 (73%)
Hancock	9,200	3,900 (42%)	12,200	5,500 (45%)
Henderson	44,300	28,800 (65%)	44,200	30,900 (70%)
McLean	9,700	3,400 (35%)	9,500	4,750 (50%)
Ohio	22,000	7,700 (35%)	23,400	8,200 (35%)
Union	14,800	8,900 (60%)	17,300	10,400 (60%)
Webster	13,300	5,300 (40%)	12,600	5,700 (45%)
<i>Region</i>	204,000	124,000 (61%)	213,000	134,000 (63%)

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

EXISTING & PROPOSED SEWER SERVICE

GRADD
Kentucky

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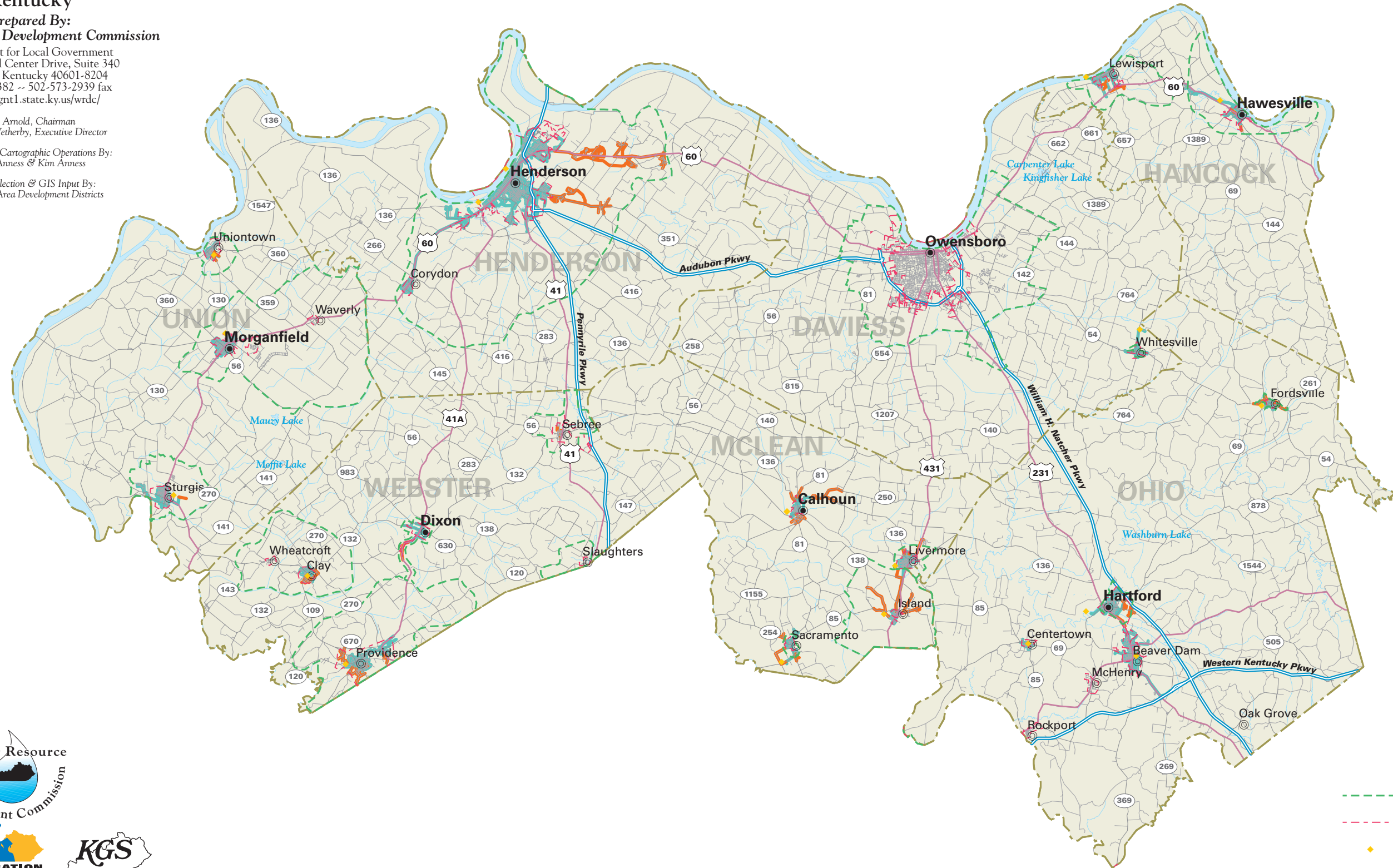
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Kentucky Area Development Districts



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

SEWER SERVICE*

- Existing Sewer Service
- Proposed Sewer Service

* Sewer System Information is unavailable for Owensboro.



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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)
DAVISS							-
Whitesville				600			600
County Total				600			600
HANCOCK							-
Hawsville		35	-	-	-		35
Lewisport		82	15	-	-		97
County Total	248	117	15				132
HENDERSON							-
Henderson.	-	-	3,106	1,248	-	-	4,354
County Total	-	-	3,106	1,248	-	-	4,354
McLEAN							-
Livermore		10	50	-	-	-	60
Calhoun	150	720	-	1,500	-	-	2,220
Island	105	2,000	-	100	-	-	2,100
Sacramento	104	32	-	-	-	-	32
County Total	359	2,762	50	1,600			4,412
OHIO							-
Centertown	-	-	2,300	-	-	-	2,300
Fordsville	29	98	-	-	-	-	98
Hartford	30	375	-	-	4,000	-	4,375
County Total	59	473	2,300	-	4,000		6,773
UNION							-
Uniontown	46	550	200	250	-	-	1,000
Sturgis	pot	21	2,000	-	-	-	2,021
Morganfield						25	25
County Total	46	571	2,200	250	-	25	3,046
WEBSTER							-
Clay City	87	378	-	1,200	-	-	1,578
Dixon	15+Ind	90					90
Providence	127	520	200	-	-	770	1,490
County Total	214	988	200	1,200	-	770	3,158
Green River ADD Total	926	4,911	7,871	4,898	4,000	795	22,475

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)
DAVISS							none
							-
HANCOCK							-
Lewisport	-	-	6	-	-	-	6
County Total	-	-	6	-	-	-	6
HENDERSON							-
Henderson.	1,016	13,316	-	-	-	-	13,316
County Total	1,016	13,316	-	-	-	-	13,316
McLEAN							-
Livermore		1,300					1,300
Calhoun	70	280	-	-	-	-	280
Island	55	1,750	-	-	-	-	1,750
Sacramento	130	3,245	-	-	-	-	3,245
County Total	295	6,575					6,575
							-
OHIO							-
Fordsville	71	295	-	-	-	-	295
Hartford	119	430	-	-	-	-	430
County Total	190	725					725
							-
UNION							-
Uniontown	Ind	10					10
County Total	Ind	10					10
WEBSTER							-
Providence	50	1,000					1,000
County Total	50	1,000					1,000
Green River ADD Total	1,551	21,626	6	-	-	-	21,632

DAVISS COUNTY

Daviss County Sewer Service (map)

- Estimated 1999 population of 90,300--73% on public sewer
- Estimated 2020 population of 94,100--73% on public sewer
- Estimated funding needs for public sewer 2000-2005--\$600,000
- Estimated funding needs for public sewer 2006-2020--\$0

Daviss County had an estimated population of 90,324 (36,831 households) in 1999 with a projected population of 94,100 (41,500 households) in 2020. Public sewer is provided to about 73 percent of the county's residents. About 9,900 households in the county use on-site wastewater treatment.

DAVISS 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)
DAVISS							
Whitesville 21-059-001				600			600
County Total				600			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)
DAVISS							none

Residents of Daviss County are presently served by two wastewater systems. These systems are the Regional Water Resource Agency and the Whitesville Water Works.

REGIONAL WATER RESOURCE AGENCY

This system serves approximately 23,000 connections, of which 20,944 are residential, 1,752 are commercial, and 319 are industrial. About 80% of the sewer lines are 20 years old or older. There are over 20,000 manholes associated with this system. There are two wastewater treatment plants associated with this system. The west plant has a design capacity of 12 MGD and operates at an average of 92% capacity or 11 MGD. The east plant has a design capacity of 6.8 MGD and operates at an average of 48% capacity or 3.2 MGD. Effluent is

SEWER SERVICE AREAS DAVIESS COUNTY Kentucky



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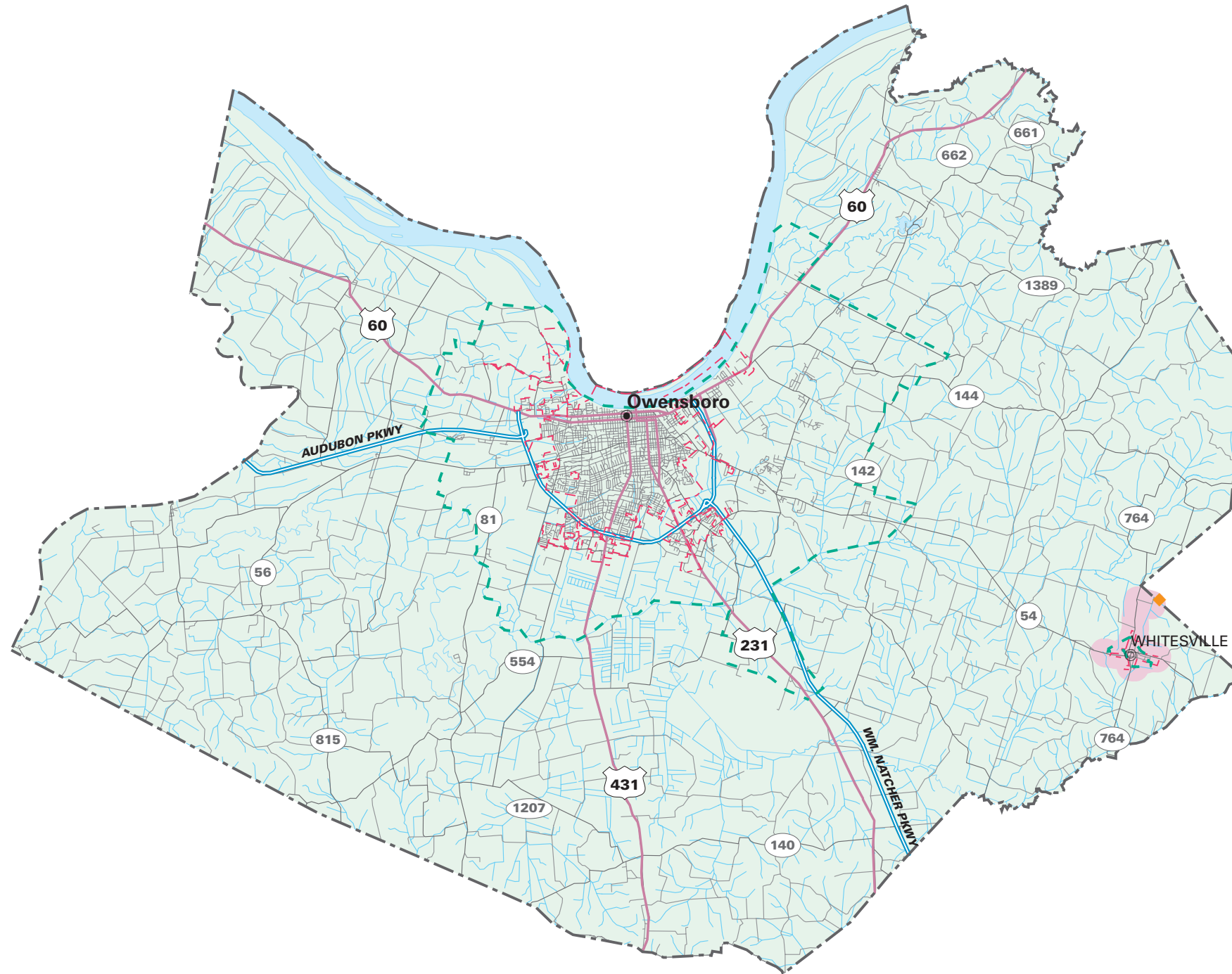
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- - - 201k Facility Planning Area
- - - Incorporated City Boundary
- ◆ Sewage Treatment Plant



SEWER SERVICE STATUS BY OWNER*

EXISTING SERVICE AREA	PROPOSED SERVICE AREA	
		CITY OF WHITESVILLE

* Sewer System Information is unavailable for Owensboro.

discharged into the Ohio River. The collection system consists of all types of pipes ranging in size from 8 to 96-inches. There are 35 sewage pumping stations and 29 sewage pumps. System failures rarely occur. Pumping station failure is the cause of the rare failures.

Regional Water Resource Agency did not participate in the Phase I or Phase II of the WRDC GIS Database; therefore system needs were unable to be determined.

WHITESVILLE WATER WORKS

This system serves approximately 281 connections. None of the sewer lines are 20 years old or older. There are 185 manholes associated with this system. There is one wastewater treatment plant with a design capacity of 100,000 gallons per 24-hour period. The plant operates at about 40% of its capacity or 40,000 gallons per 24-hour period. Effluent is discharged into Panther Creek. The collection system consists of 8-inch PVC pipe. There are 6 sewage pumping stations and 3 sewage pumps. System failures rarely occur. Pumping station failure is the cause of the rare failures.

This system is fairly new constructed in 1984. It currently serves the city limits of Whitesville. Upgrades of the treatment plant and several lines are this system's current needs.

Proposed Projects 2000-2005

21-059-001

This project will involve upgrading the existing treatment plant by installing an additional clarifier and additional aerators.

Priority: I
Project Owner: Whitesville Water Works
Cost Estimate: \$600,000
Effected Customers/Area: Entire District

Note: The wastewater system will have to upgrade the existing lines as the need arises.

HANCOCK COUNTY

Hancock County Sewer Service (map)

- Estimated 1999 population of 9,200--42% on public sewer
- Estimated 2020 population of 12,200--45% on public sewer
- Proposed projects would connect about 250 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$132,000
- Estimated funding needs for public sewer 2006-2020--\$6,000

Hancock County had an estimated population of 9,247 (3,588 households) in 1999 with a projected population of 12,200 (5,200 households) in 2020. Public sewer is provided to about 42percent of the households. About 2,100 households use on-site systems. About 250 customers could be added to public sewer service through new line extensions in 2000-2020.

HANCOCK 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)
HANCOCK							-
Hawsville							-
21-091-008	2 + com	22					22
21-091-009	(Trl Pk)50	13					13
Total	52 + com	35					35
Lewisport							-
21-091-001	86	32					32
21-091-002	50		10				10
21-091-003	Industry		5				5
21-091-005	60	50					50
Total	196+ind	82	15				97
County Total	248	117	15				132

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)
HANCOCK							-
Lewisport							-
21-091-006			6				6

The residents of Hancock County are presently served by two wastewater systems. These systems are Hawesville Water Works and Lewisport Municipal Water Works. Hancock County is currently seeking to regionalize its systems.

SEWER SERVICE AREAS HANCOCK COUNTY Kentucky

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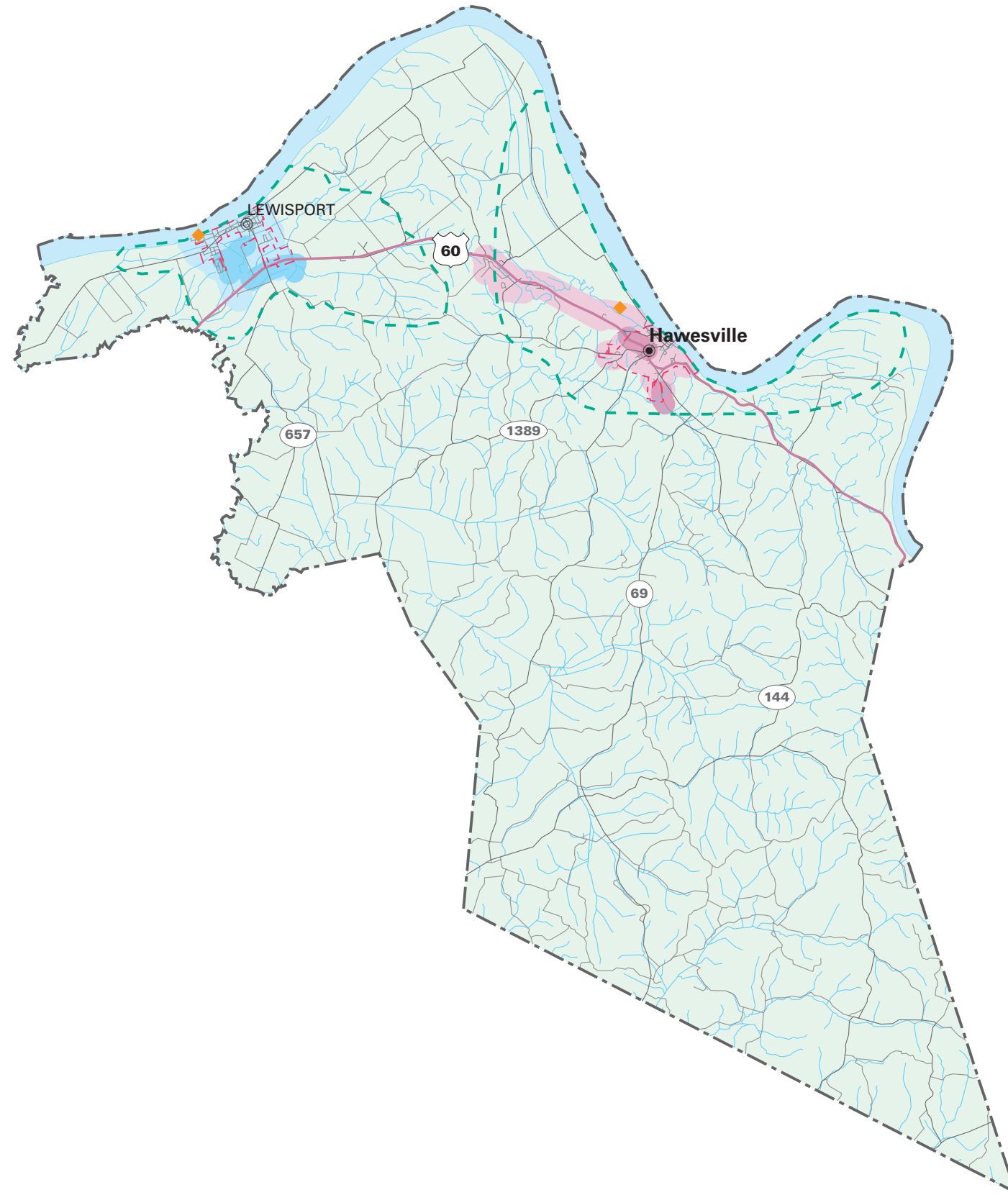
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- - - 201k Facility Planning Area
- - - Incorporated City Boundary
- ◆ Sewage Treatment Plant



SEWER SERVICE STATUS BY OWNER

EXISTING SERVICE AREA	PROPOSED SERVICE AREA	
		LEWISPORT WATER WORKS
		HAWESVILLE WATER WORKS

HAWESVILLE WATER WORKS

This system currently serves 488 connections, all of which are residential. All of the sewer lines in this system are 20 years old or older. There is one wastewater treatment plant with a design capacity of 250,000 gallons per 24-hour period. The plant operates at about 68% of its design capacity or 170,000 gallons per 24-hour period. Effluent is discharged into Lead Creek. The collection system consists of 8-inch lines. There are 9 sewage pumping stations and one sewage pump. System failures occur periodically due to pumping station failure.

This system currently needs upgrades and extensions to serve rapidly developing residential and industrial areas. Plant upgrades are needed to meet increasingly stringent environmental regulations and demand.

Proposed Projects 2000-2005

21-091-008

This project will extend sewer main along Hwy 60 to accommodate approximately 2 commercial sites.

Priority: I
Project Owner: Hawesville Water Works
Cost Estimate: \$21,500
Effectuated Customers/Area: Commercial sites along Hwy 60

21-091-009

This project will extend sewer main out to a new trailer park off Hwy 60 east. There are 50 undeveloped lots.
Priority: I
Project Owner: Hawesville Water Works
Cost Estimate: \$13,000
Effectuated Customers/Area: 50 lots for residential customers within the new trailer park

LEWISPORT MUNICIPAL WATER WORKS

This system currently serves 658 connections, of which 562 are residential, 37 are commercial, 1 industrial, and 9 institutional. About 90% of the system lines are 20 years old or older. There are 171 manholes associated with the sewer collection system. One wastewater treatment plant is associated with this system. It has a design capacity of 250,000 gallons per 24-hour period. On average the plant operates at 68% of its capacity or 170,000 gallons per 24-hour period. Effluent is discharged into the Ohio River. The collection system consists of 8-inch iron pipes. There are 5 sewage pumping stations and one sewage pump. Periodic system failures occur due to power outages.

This system currently needs upgrades and extensions to serve rapidly developing residential and industrial areas. Plant upgrades are needed to meet increasingly stringent environmental regulations and demand.

Proposed Projects 2000-2005

21-091-001

This project involves the connecting of a new subdivision, which has the potential for 86 homes.

Priority: I
Project Owner: Lewisport Water Works
Cost Estimate: \$31,500
Effectuated Customers/Area: 86 residences

21-091-002

This project will rehabilitate the sewer main along Lincoln Rd. to accommodate a 50 home subdivision. This project will contribute to growth in the area.

Priority: I
Project Owner: Lewisport Water Works
Cost Estimate: \$10,000
Effectuated Customers/Area: 50 residences

21-091-003

This project will run a service main out to Dal-Tile Co. This project has the potential to attract new industry near the site and therefore, creating jobs for the residents in the area.

Priority: I
Project Owner: Lewisport Water Works
Cost Estimate: \$5,000
Effectuated Customers/Area: 1 industry

21-091-004

This project will extend the sewer main running along Fallin Lane eastward approximately .35 miles. This project will pickup approximately 8 commercial customers and has an estimated cost of \$80,000. This project has already been bid. By bringing sewer into the area, more commercial customers will mover into the area and thus, bringing economic growth to the area.

Priority: I
Projected Owner: Lewisport Water Works
Cost Estimate: \$80,000
Effectuated Customers/Area: 8 commercial sites

21-091-005

This project will extend the Fallin Lane project further eastward approximately ½ mile. This project will pick up the Hartland Villa Apartments, which has approximately 20 units.

Priority: I
Project Owner: Lewisport Water Works
Cost Estimate: \$50,000
Effectuated Customers/Area: 60+ customers

Proposed Projects 2006-2020

21-091-006

This project will change the current flow of the sewer main to accommodate the Fallin Lane extensions. This project will also, attract commercial growth to the area and thus, creating economic growth for the area.

Priority: L
Project Owner: Lewisport Water Works
Cost Estimate: \$6,000
Effectuated Customers/Area: 10

Note: This city just upgraded extended many of the existing lines and built a new treatment plant using funds acquire from the Community Development Block Grant Economic Development funds and the Economic Development Administration Sewer Extensions

HENDERSON COUNTY

Henderson County Sewer Service (map)

- Estimated 1999 population of 44,300--65% on public sewer
- Estimated 2020 population of 44,200--70% on public sewer
- Proposed projects would connect about 1,000 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$4,350,000
- Estimated funding needs for public sewer 2006-2020--\$13,300,000

Henderson County had an estimated population of 44,347 (18,284 households) in 1999 with a projected population of 44,200 (20,000 households) in 2020. Public sewer is provided to about 65 percent of the county's residents. About 6,400 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.

HENDERSON 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)
HENDERSON							-
Henderson.							-
21-101-001			1,019				1,019
21-101-002			2,087				2,087
21-101-003				1,248			1,248
21-101-004	Storm water						-
County Total			3,106	1,248			4,354

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)
HENDERSON							-
Henderson.							-
21-101-005	1,016	13,316					13,316

Residents of Henderson County are presently served by two wastewater systems. These systems are Henderson City Municipal Water and Corydon Municipal Wastewater System.

SEWER SERVICE AREAS HENDERSON COUNTY Kentucky



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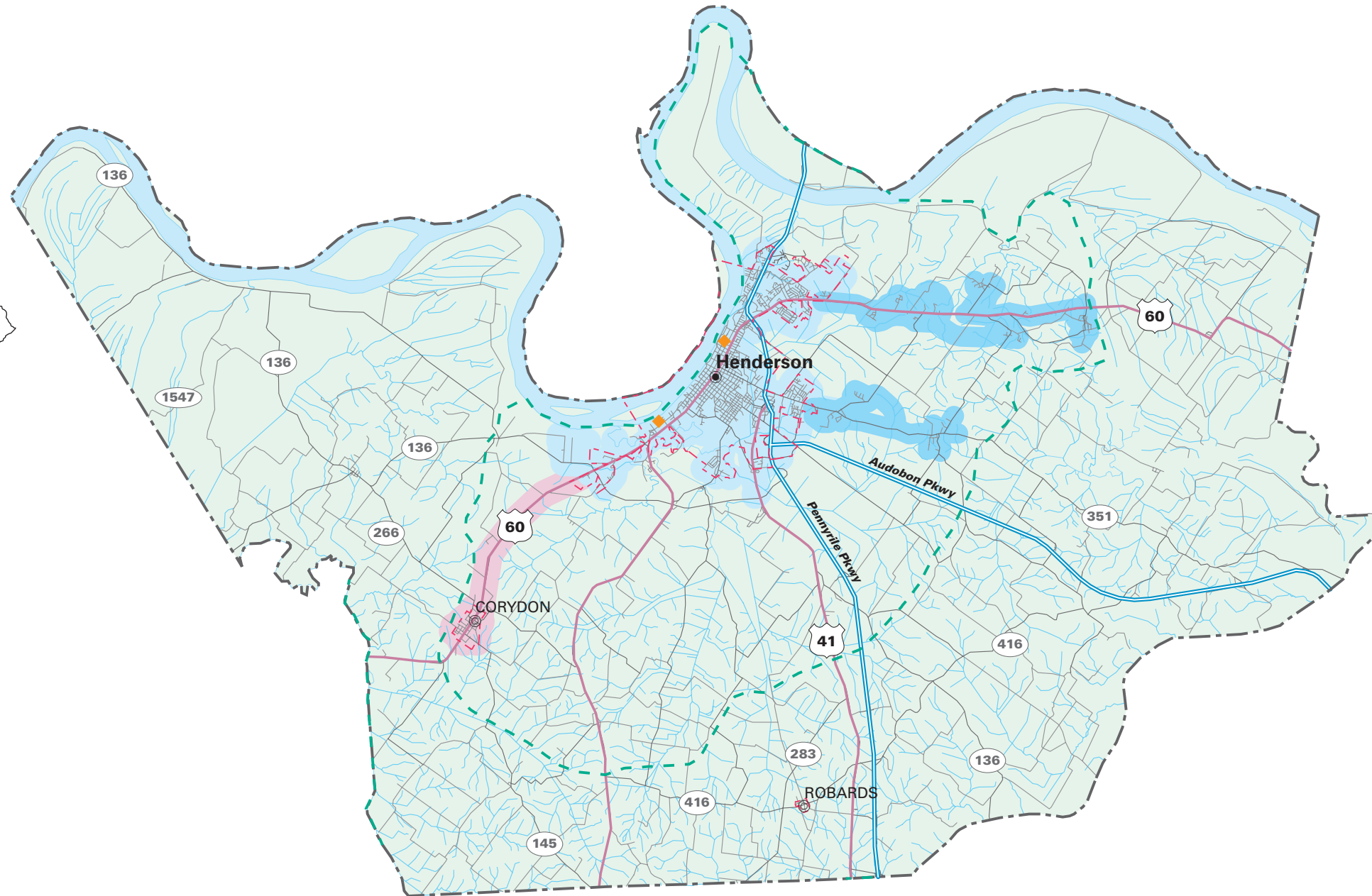
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- Sewage Treatment Plant



SEWER SERVICE STATUS BY OWNER

EXISTING SERVICE AREA	PROPOSED SERVICE AREA	
		HENDERSON CITY MUNICIPAL WATER
		CITY OF CORYDON

HENDERSON CITY MUNICIPAL WATER

This system serves approximately 9,878 connections, of which 8,811 are residential, 950 commercial, 51 industrial and 79 institutional. Approximately 75% of the sewer lines are 20 years old or older. There are over 6,000 manholes associated with the system. Two wastewater treatment plants operate within the system. The main plant on Drury Lane has a design capacity of 15 MGD and operates at about 50% capacity or 6.5 MGD. The south plant has a design capacity of 4 MGD and operates at about 75% capacity or 2.5 MGD. Effluent from the Drury Lane plant is discharged into the Ohio River. Effluent from the south plant is discharged into the Green River. There are 47 pumping stations and 7 sewage pumps. System failures rarely occur and are mainly caused by pumping station failure.

The current need in this system is to repair and upgrade several lines and pump stations throughout the system.

Proposed Projects 2000-2005

21-101-001

This project is the upgrade and repair of lines throughout the system.

Priority: I
Project Owner: Henderson City MW
Cost Estimate: \$1,019,000
Effectuated Customers/Area: system wide

21-101-002

This project is the upgrade, repair, and maintenance of sewer pump stations throughout the sewer system.

Priority: I
Project Owner: Henderson City MW
Cost Estimate: \$2,086,600
Effectuated Customers/Area: system wide

21-101-003

This project is the upgrade/rehabilitation of the north sewer treatment plant.

Priority: I
Project Owner: Henderson City MW
Cost Estimate: \$1,248,000
Effectuated Customers/Area: plant upgrade

21-101-004

This project is the upgrade and improvement of the stormsewer system.

Priority: I
Project Owner: Henderson City MW
Cost Estimate: \$470,000
Effectuated Customers/Area: stormsewer upgrade

Proposed Projects 2006-2020

21-101-005

This project is the sewer line extension to several communities west of Henderson city limits along US 60.

Priority:	L
Project Owner:	Henderson City MW
Cost Estimate:	\$13,316,549
Effected Customers/Area:	1,016 new customers

CORYDON MUNICIPAL WASTEWATER SYSTEM

This system serves approximately 298 connections, of which 290 are residential, 7 commercial, and 1 institutional. None of the lines are 20 years old or older. There are 56 manholes within the system. The city of Henderson treats the wastewater. The collection system consists of 6 to 8-inch PVC pipes. There are 3 sewage-pumping stations associated with the system. System failures rarely occur and are due to failure of control panel elements at the lift stations.

This system is new constructed in 1994. There are no immediate needs for this system.

MCLEAN COUNTY

McClean County Sewer Service (map)

- Estimated 1999 population of 9,700--35% on public sewer
- Estimated 2020 population of 9,500--50% on public sewer
- Proposed projects would connect about 675 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$4,410,000
- Estimated funding needs for public sewer 2006-2020--\$6,580,000

McLean County had an estimated population of 9,658 (4,051 households) in 1999 with a projected population of 9,500 (4,400 households) in 2020. Public sewer is provided to about 35 percent of the county's residents. About 2,600 households treat wastewater on-site. About 675 customers could be added to public sewer service through new line extensions in 2000-2020.

MCLEAN 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)
McLEAN							-
Livermore							-
21-149-017	6+pot	10					10
21-149-018			50				50
Total	6+pot	10	50				60
Calhoun							-
21-149-001				1,500			1,500
21-149-002	100	600					600
21-149-003	50	120					120
Total	150	720		1,500			2,220
Island							-
21-149-006	45	500					500
21-149-007	ind + 10	500					500
21-149-008	50	1,000					1,000
21-149-009				100			100
Total	105	2,000		100			2,100
Sacramento							-
21-149-012	100	17					17
21-149-013	4	15					15
Total	104	32					32
County Total	359	2,762	50	1,600			4,412

SEWER SERVICE AREAS MCLEAN COUNTY Kentucky



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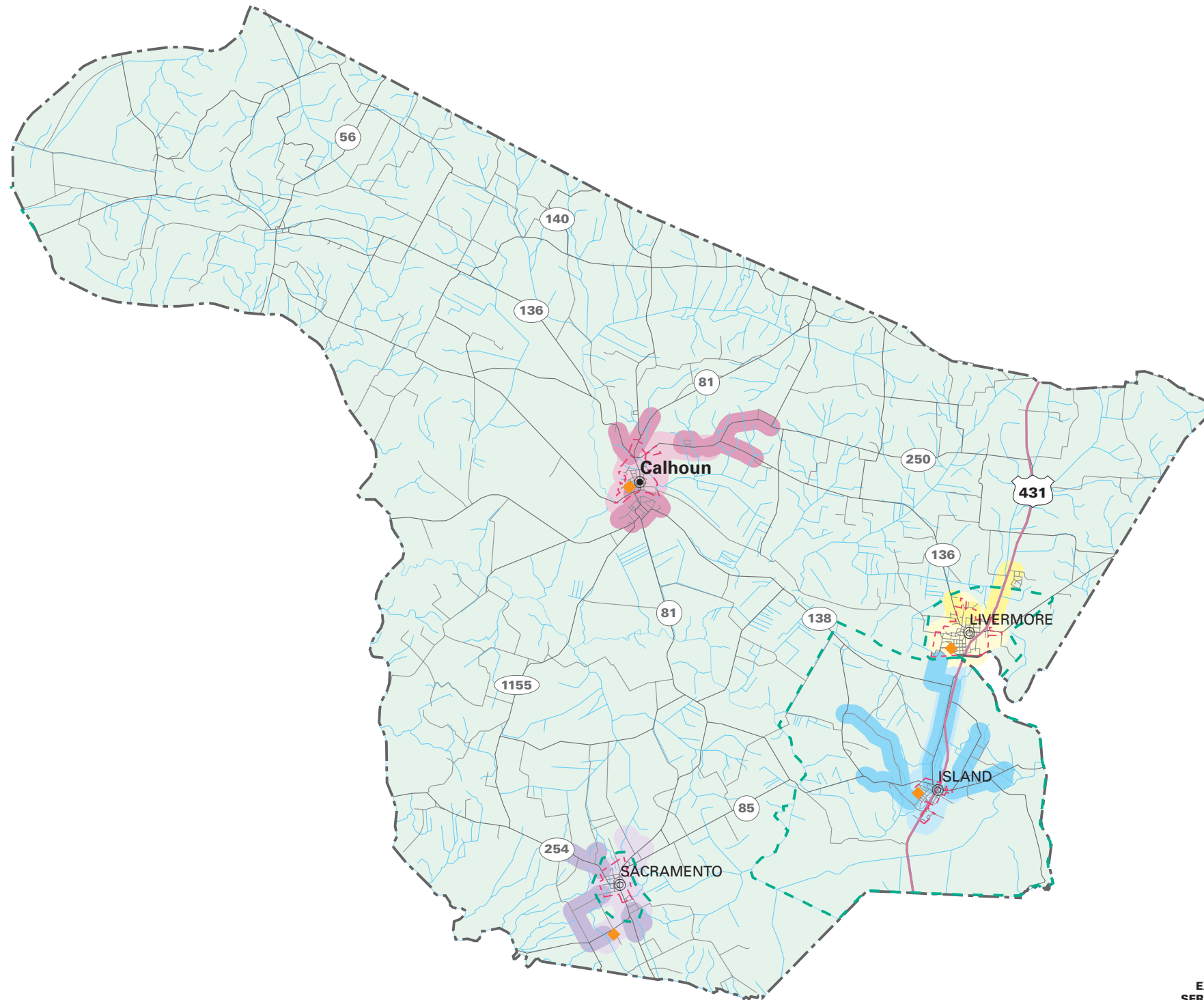
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Data Collection & GIS Input By:
Kentucky Area Development Districts



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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	
		SACRAMENTO WATER WORKS
		LIVERMORE WATER WORKS
		ISLAND WATER DEPARTMENT
		CALHOUN WATER WORKS

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)
McLEAN							-
Calhoun							-
21-149-004	20	130					130
21-149-005	50	150					150
Total	70	280					280
Island							-
21-149-010	30	1,000					1,000
21-149-011	25	750					750
Total	55	1,750					1,750
Sacramento							-
21-149-014	15	145					145
21-149-015	100	3,000					3,000
21-149-016	15	100					100
Total	130	3,245					3,245
Livermore							-
21-149-019	20	300					300
21-149-020	40 + com	1,000					1,000
Total	60+com	1,300					1,300
County Total	315+com	6,575					6,575

The residents of McLean County are presently served by four wastewater systems. These systems include Calhoun Wastewater System, Island Water Department, Sacramento Water Works, and Livermore Water Works.

CALHOUN WASTEWATER SYSTEM

This system serves approximately 409 connections, of which 370 are residential, 37 commercial, 2 industrial and 9 institutional. About 90% of the sewer lines are 20 years old or older. There are 115 manholes associated with the collection system. There are 2 wastewater treatment plants with a capacity of 400,000 gallons per 24-hour period. The plants operate at about 37.5% of their capacity or 163,000 gallons per 24-hours. The effluent destination is the Green River. The collection system consists of 6-inch clay, PVC, and iron lines. There are 2 sewage pumping stations and 1 sewage pump. System failures rarely occur. When they do occur, it is due to high river levels.

This system's current needs include system extensions out to growth areas of Calhoun. Also, upgrades to the existing plant need to be addressed with increasing environmental regulations. A long-term goal is a river crossing to serve areas south of Calhoun.

Proposed Projects 2000-2005

21-149-001

This project will involve upgrading the existing plant to meet the growth needs within the city.

Priority: I
Project Owner: Calhoun Water Works
Cost Estimate: \$1,500,000
Effectuated Customers/Area: Entire District

21-149-002

This project will provide sanitary sewer for the Rumsey Community. Approximately 100 homes will hook onto the system if installed.

Priority: I
Project Owner: Calhoun Water Works
Cost Estimate: \$250,000
Effectuated Customers/Area: Rumsey Community—100 homes

21-149-003

This project will provide sanitary sewer along Hwy 136. This project will serve approximately 50 homes. The Superintendent of the sewer system was unable to give an estimated cost for the project.

Priority: I
Project Owner: Calhoun Water Works
Cost Estimate: \$30,000
Effectuated Customers/Area: 50 residences

Proposed Projects 2006-2020

21-149-004

This project will extend 8" sewer main out Hwy 81. The Superintendent was unable to determine the cost of the project or the number of homes in the area.

Priority: L
Project Owner: Calhoun Water Works
Cost Estimate: \$30,000
Effectuated Customers/Area: 20 residences

21-149-005

This project will extend sewer main east out Hwy 136. The superintendent was unable to estimate the number of homes in the area and the estimated cost of the project.

Priority: L
Project Owner: Calhoun Water Works
Cost Estimate: \$150,000
Effectuated Customers/Area: 50 residences

ISLAND WATER DEPARTMENT

This system serves approximately 233 connections, of which 216 are residential, and 17 are commercial. No sewer lines are 20 years old or older in this system. There are 95 manholes associated with the collection system. There is 1 wastewater treatment plant, 2 sewage pumping stations, and two, 5-hp, submersible sewage pumps. The collection system consists of PVC pipe. System failures rarely occur. When they do, it is due to power outages.

This system's current needs include system extension out to growth areas of Island. Also, upgrades to the existing plant need to be addressed with increasing environmental regulations and line extensions.

Proposed Projects 2000-2005

21-149-006

This project will provide sewer to the residents of the Buttonsberry area. This project will require the installation of approximately 2-4 lift stations due to the terrain and therefore, makes the project more costly.

Priority: I
Project Owner: Island Water Department
Cost Estimate: \$500,000
Effectuated Customers/Area: 45 residences

21-149-007

This project will extend a sewer line out Hwy 431 to the Green River. This project will require the installation of approximately 2-4 lift stations, which makes the project more costly. Also, by extending this main, the site becomes more attractive to industry and contributes to the economic growth of the area.

Priority: I
Project Owner: Island Water Department
Cost Estimate: \$500,000
Effectuated Customers/Area: 10 residences and 2 industrial sites

21-149-008

This project will extend a sewer line approximately 3 miles. Due to the terrain of the area this project will require the installation of 3-4 lift stations, therefore the project becomes more costly.

Priority: I
Project Owner: Island Water Department
Cost Estimate: \$1,000,000
Effectuated Customers/Area: 50 residences

21-149-009

In order for the city to service these new areas the sewer treatment plant will have to be upgraded. The plant will require the installation of at least 2 pumps, an additional oxidation ditch and an additional clarifier.

Priority: I
Project Owner: Island Water Department
Cost Estimate: \$100,000
Effectuated Customers/Area: Entire District

Proposed Projects 2006-2020

21-149-010

The project will extend sewer service out Fox Hollow Rd approximately 3 miles. This extension will require the installation of approximately 4 lift stations; therefore the project becomes more costly.

Priority: L
Project Owner: Island Water Department
Cost Estimate: \$1,000,000
Effectuated Customers/Area: 30 residences

21-149-011

The project will extend out Hwy 85 approximately 6 miles.

Priority: L
Project Owner: Island Water Department
Cost Estimate: \$750,000
Effectuated Customers/Area: 25 residences

SACRAMENTO WATER WORKS

This system serves approximately 328 connections (327 residential, 1 commercial). No sewer lines are over 20 years old. There are no manholes associated with this system because it is a pressure system. There is 1 wastewater treatment plant with a 24-hour design capacity of 62,000 gallons. It operates at about 85% capacity or 50,000 gallons per 24-hour period. This

plant has exceeded its peak daily flow. It is a lagoon system that discharges its effluent into the Pond River. The collection system consists of 6-inch PVC lines. There are 2 sewage pumping stations and three, 7-hp, submersible sewage pumps. System failures occur periodically because of pumping station failures.

This system's current need is to provide sewer to growth areas of Sacramento and to provide more capacity for treatment. Maximum capacity has been exceeded before. Plant upgrades are also needed to meet new environmental regulations.

Proposed Projects 2000-2005

21-149-012

This service area is a new subdivision located within the city limits, therefore sewer service will more than likely be required by the Division of Water for the area.

Priority: I
Project Owner: Sacramento Water Works
Cost Estimate: \$17,000
Effected Customers/Area: Approximately 100

21-149-013

A sewer extension line running along Hwy 81 for approx. ¼ mile.

Priority: I
Project Owner: Sacramento Water Works
Cost Estimate: \$15,000
Effected Customers/Area: 4 residences

Proposed Projects 2006-2020

21-149-014

This sewer extension line will run along Hwy 254 will serve approx. 15 homes and extend ½ mile. The estimated cost is difficult to determine. As of today the cost is \$3,000 per house just to hook on. This does not include the cost of labor, the cost of line, etc.

Priority: L
Project Owner: Sacramento Water Works
Cost Estimate: \$45,000
Effected Customers/Area: 15 residences

21-149-015

The Community of Breeman has expressed interest in possibly connecting the City of Sacramento to treat their wastewater. The Superintendent of Sacramento was unable to provide me with a number of potential customers or an estimated cost.

Priority: L
Project Owner: Sacramento Water Works
Cost Estimate: Unknown
Effected Customers/Area: Community of Breeman

21-149-016

The project would consist of extending sewer line that would connect Fifth Street to Hwy 85. This area was just recently provided with water and sewer will probably need to be provided with the anticipated growth to the area.

Priority: L
Project Owner: Sacramento Water Works
Cost Estimate: \$81,500
Effectuated Customers/Area: 15

LIVERMORE WATER WORKS

This system serves a population of 2,366. Approximately 80% of the sewer lines are 20 years old or older. There are 50 manholes associated with this collection system. One wastewater treatment plant is associated with this system. It has a 24-hour design capacity of 315,000 gallons. The plant operates at about 65% of its design capacity or 180,000 gallons per 24-hour period. Effluent is discharged into the Green River. The collection system consists of 6 to 12-inch clay, PVC, and concrete lines. There are 5 sewage-pumping stations. The minimum user charge for sewer is \$7.10. Periodic system failures occur due to line blockages.

Needs for this system include the upgrade of all sewer lift stations and pump stations associated with the system. Plant upgrades are also needed to meet new environmental regulations.

Proposed Projects 2000-2005

21-149-017

This sewer project is a system extension to serve six homes in a developing neighborhood.

Priority: I
Project Owner: Livermore Water Works
Cost Estimate: \$10,000
Effectuated Customers/Area: 6 homes & (?) potential

21-149-018

This project is an upgrade for all sewer lift stations and pump stations by reconstruction them so they are out of the flood plain. Water quality will be improved by this project.

Priority: I
Project Owner: Livermore Water Works
Cost Estimate: \$50,000
Effectuated Customers/Area: system-wide improvement

Proposed Projects 2006-2020

21-149-019

This project consists of construction of a new pump station and a water line extension.

Priority: L
Project Owner: Livermore Water Works
Cost Estimate: \$300,000
Effectuated Customers/Area: 20 homes

21-149-020

This future project is a realignment and upgrade of several lines to meet future needs.

Priority: L
Project Owner: Livermore Water Works
Cost Estimate: \$1,000,000
Effectuated Customers/Area: 40 homes & 3 businesses

This project consists of a sewer line extension to service the Hickory Hills area.

21-149-021

This future project is a realignment and upgrade of several lines to meet future needs.

Priority: L
Project Owner: Livermore Water Works
Cost Estimate: \$?
Effectuated Customers/Area: system-wide improvement

OHIO COUNTY

Ohio County Sewer Service (map)

- Estimated 1999 population of 22,000--35% on public sewer
- Estimated 2020 population of 23,400--35% on public sewer
- Proposed projects would connect about 250 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$6,770,000
- Estimated funding needs for public sewer 2006-2020--\$725,000

Ohio County had an estimated population of 21,972 (8,933 households) in 1999 with a projected population of 23,400 (10,200 households) in 2020. Public sewer is provided to about 35 percent of the county's residents. About 5,800 households treat wastewater on-site. About 250 customers could be added to public sewer service through new line extensions in 2000-2020.

OHIO 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)
OHIO							-
Centertown 21-183-015 (urgent)			2,300				2,300
Fordsville							-
21-183-010	6	45					45
21-183-012	5	10					10
21-183-013	3	10					10
21-183-016	15	33					33
Total	29	98					98
							-
Hartford							-
21-183-003	10 +com	175					175
21-183-004	20	200					200
21-183-008					4,000		4,000
Total	30	375			4,000		4,375
County Total	59	473	2,300	-	4,000		6,773

SEWER SERVICE AREAS

OHIO COUNTY

Kentucky

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Water Resource Development Commission

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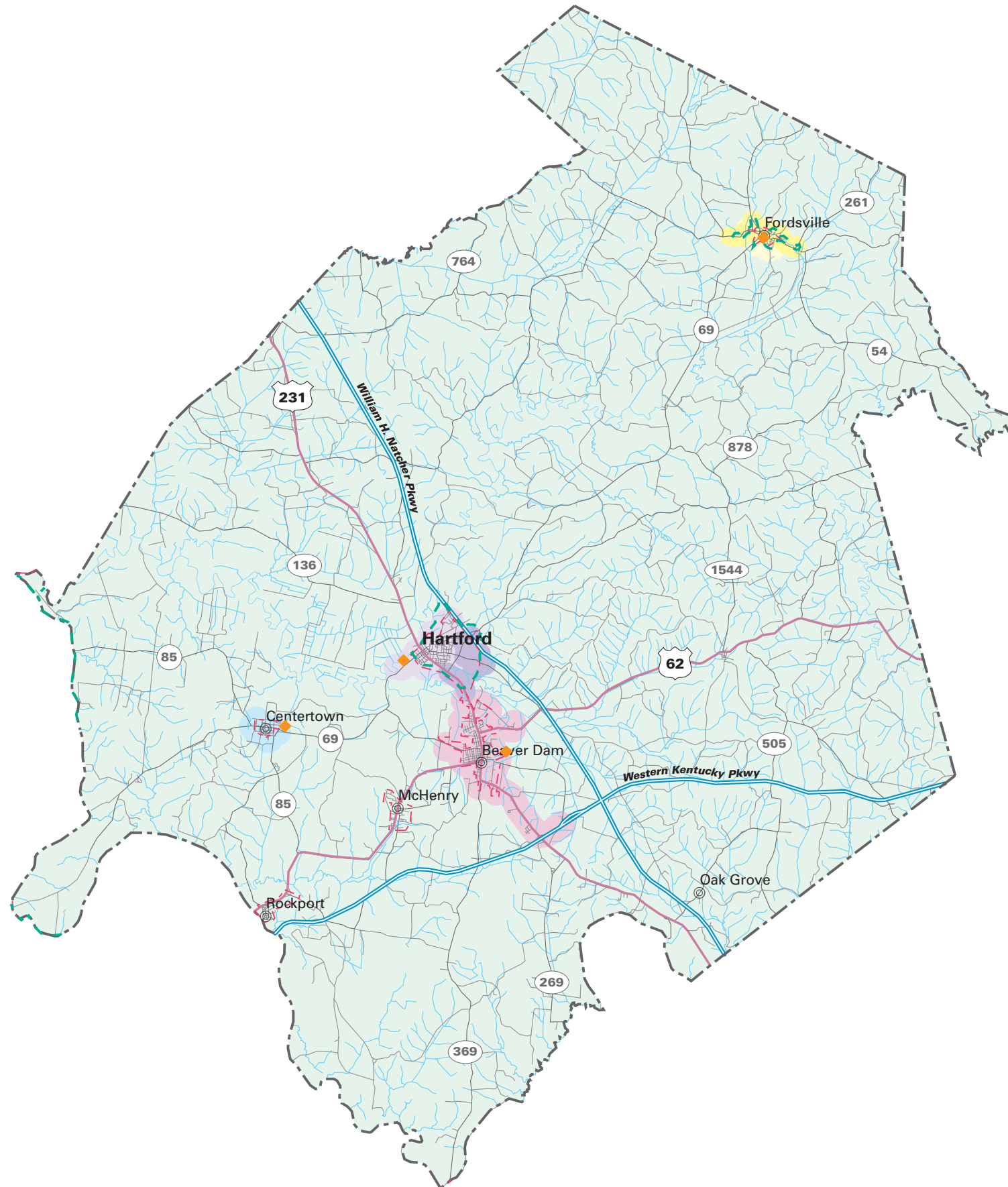
Final GIS & Cartographic Operations By:
 Kent Anness & Kim Anness

Data Collection & GIS Input By:
 Kentucky Area Development Districts



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- 201k Facility Planning Area
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- Sewage Treatment Plant



SEWER SERVICE STATUS BY OWNER

EXISTING SERVICE AREA	PROPOSED SERVICE AREA	OWNER
		HARTFORD MUNICIPAL WATER WORKS
		FORDSVILLE WATER & SEWER DISTRICT
		CITY OF CENTERTOWN
		CITY OF BEAVER DAM



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)
OHIO							-
Fordsville							-
21-183-009	6	65					65
21-183-011	50 pot	80					80
21-183-014	15	150					150
Total	71	295					295
Hartford							-
21-183-005	8 com	80					80
21-183-006	100	225					225
21-183-007	11	125					125
Total	119	430					430
County Total	190	725					725

The residents of Ohio County are presently served by four wastewater systems. These systems include Hartford Municipal Water Works, Fordsville Water System, Beaver Dam Municipal Water and Sewer, and Centertown Water System. Ohio County is currently seeking options, such as regionalization, to make the systems more cost efficient.

BEAVER DAM MUNICIPAL WATER & SEWER

This system serves approximately 1,322 connections, of which 1,114 are residential, 185 commercial, and 23 are institutional. About 80% of the sewer lines in this system are 20 years old or older. There are 530 manholes associated with the system. There is 1 wastewater treatment plant with a capacity of 1.4 MGD. It operates at about 45-50% of its capacity. There are 3 system operators. The permitted 24-hour design capacity is 711,000 gallons. The effluent destination is an unnamed tributary. The collection system consists of 8 to 16 inch clay lines. There are 6 sewage pumping stations and 3, five horsepower, submersible sewage pumps. The current charges for sewer tap on fee is \$3,000. The minimum charge for 2,000 gallons is \$4.58. Periodic system failures occur due to line blockage.

This system currently serves all practical households within the city limits. Needs include improvements to the treatment plant in order to comply with new environmental regulations.

Proposed Projects 2000-2005

21-183-001

This project will be funded totally by Wal-Mart.

Priority: I

Project Owner: Beaver Dam MWS
Cost Estimate: \$?
Effectuated Customers/Area: 1 business

HARTFORD MUNICIPAL WATER WORKS

This system serves approximately 936 connections, of which 866 are residential, 55 are commercial, 4 are industrial, and 11 are institutional. About 90% of the sewer lines in this system are 20 years old or older. There are 210 manholes associated in this sewer collection system. There is 1 wastewater treatment plant with a capacity of 1.4 MGD. It operates at 100%+ of its design capacity which is 180,000 gallons in 24-hours. The average daily flow is 219,000 gallons in 24-hours. It is a lagoon system that discharges effluent into the Rough River. The collection system consists of 6-inch iron lines. There are 5 sewage-pumping stations. The current charges for sewer tap on fee is \$2,975. The rate charges for sewage use is 80% of the customers water usage. Periodic system failures occur due to pumping station failure.

This system serves most of the population of Hartford. Growth continues in Hartford and this adds pressure to an already over-capacity treatment plant. Need exists to upgrade the plant to meet increasing demand, new environmental regulations, and Division of Water Mandates.

Proposed Projects 2000-2005

21-183-003

This project is a sewer extension along highway 231. It will include 2 pump stations and about .33 miles of line.

Priority: I
Project Owner: Hartford MWW
Cost Estimate: \$175,000
Effectuated Customers/Area: 10 businesses

21-183-004

This project is a sewer extension along highway 69 that will go under the Natcher Parkway. It is for future development.

Priority: I
Project Owner: Hartford MWW
Cost Estimate: \$200,000
Effectuated Customers/Area: (?) potential

Proposed Projects 2006-2020

21-183-005

This project is an extension from project 21-183-002. It will extend sewer down highway 1543 to the state garage and pick up a cluster of homes.

Priority: L
Project Owner: Hartford MWW
Cost Estimate: \$80,000
Effectuated Customers/Area: 7 homes & 1 business

21-183-006

This project is an extension from project 21-183-002. It will consist of 4 separate extensions into a rapidly developing area.

Priority: L
Project Owner: Hartford MWW
Cost Estimate: \$225,000
Effectuated Customers/Area: 100 potential homes

21-183-007

This project is an extension from project 21-183-002 to serve a cluster of homes.

Priority: L
Project Owner: Hartford MWW
Cost Estimate: \$125,000
Effectuated Customers/Area: 11 homes

21-183-008

This project is the addition of a new wastewater treatment plant, new 12" raw line, and a new pump station.

Priority: L
Project Owner: Hartford MWW
Cost Estimate: \$1,700,000
Effectuated Customers/Area: system-wide

FORDSVILLE WATER DISTRICT

This system serves approximately 237 connections. About 80 manholes exist in the sewer collection system. There is 1 wastewater treatment plant with a capacity of 125,000 gallons. It operates at about 60% of its design capacity or 75,000 gallons in 24-hours. It is an aeration system that discharges its effluent into a receiving stream. The collection system consists of 6 to 8-inch PVC lines. There is 1 sewage pumping station and 1 grinder, submersible sewage pump. The current charge for sewer is \$11.00 for 2,000 gallons. System failures rarely occur, but are due to pumping station failure.

This system is operating at about 60% capacity. The current need is line extensions into the growth areas of Fordsville. Plant upgrades will be needed as more customers are added and as stricter environmental regulations take effect.

Proposed Projects 2000-2005

21-183-010

This project is a new line extension of about 1,056 feet east of Fordsville out Highway 54.

Priority: I
Project Owner: Fordsville Water District
Cost Estimate: \$45,000
Effectuated Customers/Area: 6 new customers

21-183-012

This project is a new line extension about 200 feet north on Highway 1700 from Highway 54 West.

Priority: I
Project Owner: Fordsville Water District
Cost Estimate: \$10,000
Effectuated Customers/Area: 5 new customers

21-183-013

This project is a new line extension about 200 feet west out Wallace Street from Church Street.

Priority: I
Project Owner: Fordsville Water District
Cost Estimate: \$10,000
Effectuated Customers/Area: 3 new customers

21-183-016

This extension project is 3,855 feet of new line. It will extend west on Highway 54 from the existing pump station.

Priority: I
Project Owner: Fordsville Water District
Cost Estimate: \$33,000
Effectuated Customers/Area: 15 new customers

Proposed Projects 2006-2020

21-183-009

This project is a new line extension of about 1,584 feet east of Fordsville out Wallace Road.

Priority: L
Project Owner: Fordsville Water District
Cost Estimate: \$65,000
Effectuated Customers/Area: 6 new customers

21-183-011

This project is a new line extension from 21-183-10 about 1,984 feet east of Fordsville out Highway 54.

Priority: L
Project Owner: Fordsville Water District
Cost Estimate: \$80,000
Effectuated Customers/Area: 50 new customers

21-183-014

This extension project is about 3,168 feet of new line. Approximately 1,584 feet of line will be north on Wallace from project 21-183-013. Approximately 1,584 feet will be from Wallace north to Highway 1700 from project 21-183-012.

Priority: L
Project Owner: Fordsville Water District
Cost Estimate: \$150,000
Effectuated Customers/Area: 15 new customers

CENTERTOWN MUNICIPAL WATER

This system serves approximately 191 connections. There is only 1 manhole associated with this collection system. The Enviro-Vac collection system is an EPA declared failed technology. There is 1 wastewater treatment plant with a capacity of 45,000 gallons per 24-hour period. It operates at about 50% of its capacity or 20,000 gallons per 24-hour period. It is a RBC facility and discharges its effluent into the Rough River. The collection system consists of 4-inch PVC lines. There are 2 sewage pumping stations and 8 grinder sewage pumps. High maintenance costs are leading to very high sewer rates. System failures occur often and are due to vacuum leaks and pumping station failure. These failures occur over the entire system.

This system is in dire need of total replacement. Serious health problems have occurred several times in direct relation to this system. The system has to be replaced before anything else can be done to this system. The City of Centertown is requesting \$500,000 in RECD Grant Assistance. This would be combined with a \$1,000,000 CDBG and \$700,000 grant from the Environmental Protection Agency (EPA) to replace the faulty sewer collection system with a conventional gravity flow system. The current system was constructed as an alternative technology system in 1986 under the EPA's construction Grants Program. The system started experiencing problems immediately after construction and in 1994 was finally declared a failed system by the EPA. The EPA agreed to replace the system 100% if it was deemed a failure but, according to Mario Machado, Acting Chief of the Municipal Facilities Branch of the EPA, adequate grant money is not available through EPA to replace the

system entirely (see attachment A). The City Council and the staff of the Green River Area Development District (GRADD) have met with the Department for Local Government and representatives of the Governor's office in the event that some other sources of funding may come about. Since the city cannot afford to fund any aspect of the project through loans, GRADD, in cooperation with the city, is exhausting all sources for funding of this project.

The current sewer system is based on Enviro-Vac technology. This is a vacuum sewer system that uses two-inch valves in a constant vacuum system. While the vacuum system is inherently troublesome and expensive to operate, this system has all those problems and more. The valve system used has been determined to be a failed technology. The EPA indicated in the 1991 *Manual of Alternative Collection Systems* that there were only four of these types of systems constructed and all but Centertown had been reworked due to problems.

After looking at several alternatives, it was determined that the best option was to install a new gravity flow collection system. The proposed system will include: approximately 5.76 miles of sewer main, new lateral lines to all current customers, a new pump station, manholes and other small items associated with the system.

The proposed system will be much cheaper to operate and it will prevent the backing up of sewage into residents' homes, which is a regular occurrence with the current system. This will make not only for a healthier environment for residents but for a stable environment in which they do not have to worry about spending a very large percentage of their income on their sewer bill.

The current sewer system is riddled with a multitude of problems. The valves on the system will often fail to open, when this happens it causes sewage backup problems. Sewage will not only backup into people's yard but also their homes. This is a regular occurrence, which is extremely unhealthy. The sewage is reported to overflow into homes out of not only the toilet but bathtubs and sinks as well. It is believed that this unsanitary problem has led to reported cases of hepatitis throughout the community. The sewer system manager stays on call 24-hours per day in order to fix these problems as they come up, but by the time he is aware there is problem a house will already have sewage on its floor. Another common

problem is the sticking open of valves, which causes a lack of vacuum pressure and without this vacuum there is nothing to transport the sewage to the plant. This situation results in the pooling of sewage in the lines, and if not fixed very quickly, the backup of sewage into homes. These problems are not caused by a lack of maintenance on the city's part, but rather by the faulty system. The EPA has pronounced this a failed system due to the technology and not as a result of improper maintenance.

In addition to its sanitary problems, the current sewer system is also extremely costly to operate and maintain. The system has two 20 horsepower motors that run vacuum pumps to keep the system operating. The system was designed to operate off of only one pump the majority of the time, but due to valve problems and other leaks; both of these motors run almost constantly which makes for an extremely expensive utility bill. The city currently spends between \$1,000 and \$1,500 per month on electricity to run these pumps. Under the proposed gravity system, the pumps would be completely eliminated giving the city a great deal of savings each month. Another large expense in operating this system is replacement parts. The valves in the system that must be replaced frequently as they go bad are extremely difficult to obtain. As no other such system is located in the U.S. these parts must be specially imported at an exorbitant cost. The valves consist of nothing more than a small rubber disc with an aluminum backing approximately two inches across, yet these valves cost the city over \$60 each. There are many other pieces of equipment in the system that are also very expensive that would not be needed in the gravity flow system. Labor must also be kept at a high rate due to the fact that there are so many problems that must be dealt with. The extremely high operating cost is very important due to the fact that the current system does not pay for itself and the city has had to default on its loan with RECD as a result.

Proposed Projects 2000-2005

21-183-015

The city currently operates an Enviro-Vac system that was install in the mid-1980's under the EPA Alternative Systems Program. The system has been declared a failure and the collection system must be replace with a gravity flow system. Without the replacement of the collection system the city will continue to pay high rates in order to keep the system operational and they will continue to endure raw sewage backing up into their homes whenever the system fails.

Priority: I
Project Owner: Centertown MWW

Cost Estimate: \$2,200,000
Effected Customers/Area: Entire District

UNION COUNTY

Union County Sewer Service (map)

- Estimated 1999 population of 14,800--60% on public sewer
- Estimated 2020 population of 17,300--60% on public sewer
- Proposed projects would connect about 50 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$3,050,000
- Estimated funding needs for public sewer 2006-2020--\$10,000

Union County had an estimated population of 14,824 (5,865 households) in 1999 with a projected population of 17,300 (6,600 households) in 2020. Public sewer is provided to about 60 percent of the county's residents. About 2,300 households treat wastewater on-site. About 50 customers could be added to public sewer service through new line extensions in 2000-2020.

UNION 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)
UNION							-
Uniontown							-
21-225-004				250			250
21-225-005	20	50	200				250
21-225-007	26	500					500
Total	46	550	200	250			1,000
Sturgis							-
21-225-002	pot	21					21
21-225-003			2,000				2,000
Total		21	2,000				2,021
Morganfield 21-225-001						25	25
County Total	46	571	2,200	250	-	25	3,046

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)
UNION							-
Uniontown 21-225-006	Ind	10					10

The residents of Union County are presently served by Morganfield Water Works, Sturgis Water Works and Uniontown Water & Sewer District.

SEWER SERVICE AREAS

UNION COUNTY

Kentucky

Prepared By:
Water Resource Development Commission

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Bob Arnold, Chairman
 Lawrence Wetherby, Executive Director

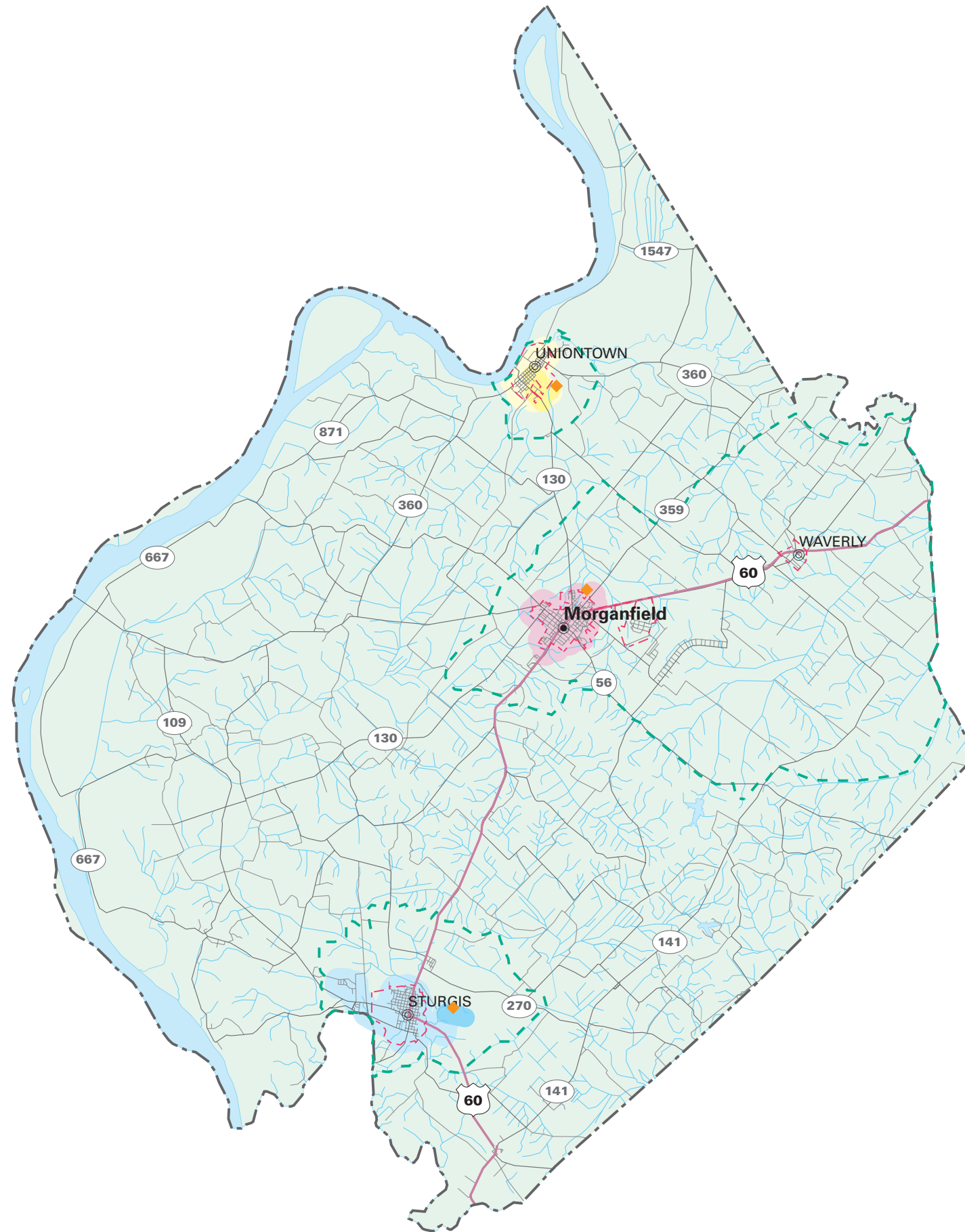
Final GIS & Cartographic Operations By:
 Kent Anness & Kim Anness

Data Collection & GIS Input By:
 Kentucky Area Development Districts



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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	OWNER
		UNIONTOWN WATER WORKS
		STURGIS WATER WORKS
		CITY OF MORGANFIELD



MORGANFIELD WATER WORKS

This system serves approximately 1,694 connections, of which 1,481 are residential, 208 commercial, and 9 industrial. About 90% of the sewer lines are 20 years old or older. There is 1 wastewater treatment plant with a design capacity of 3.5 MGD. The plant operates at about 60% capacity or 1.8 MGD. Effluent is discharged into a receiving stream. There are 18 sewage pumping stations and 4 sewage pumps. There is a sewer tap on fee of \$900 and a usage fee of \$2.01 per 1,000 gallons of water used. System failures periodically occur due to pumping station failure.

This system currently serves all practical households within the city limits. The current need is to upgrade the west main lift station.

Proposed Projects 2000-2005

21-225-001

This project is the upgrade of the west main lift station. It is needed to improve service to the area.

Priority:	I
Project Owner:	Morganfield WW
Cost Estimate:	\$25,000
Effected Customers/Area:	area

STURGIS WATER WORKS

This system serves approximately 867 connections, of which 795 are residential and 72 are commercial. About 95% of the sewer lines are 20 years old or older. There are 284 manholes associated with the sewer collection system. One wastewater treatment plant is associated with this system. It has a design capacity of 500,000 gallons per 24-hour period. The plant operates at about 80% of its design capacity or 331,000 gallons per 24-hour period. Effluent is discharges into Cypress Creek. The collection system is a combination of 8-inch PVC and iron pipes. There are 2 sewage pumping stations associated with the system. The minimum charge for base sewer usage is \$5.76 for 1,000 gallons of water used and \$2,64 for each additional 1,000 gallons of water used. System failures rarely occur due to power outages.

The entire system is in need of replacement.

Proposed Projects 2000-2005

21-225-002

This project is an extension of sewer behind the airport for future development of the airport.

Priority: I
Project Owner: Sturgis Water Works
Cost Estimate: \$ 21,150
Effectuated Customers/Area: Airport

21-225-003

This project is an upgrade/replacement of the entire sewer system.

Priority: I
Project Owner: Sturgis Water Works
Cost Estimate: \$2,000,000
Effectuated Customers/Area: Entire District

UNIONTOWN WATER & SEWER DISTRICT

This system serves approximately 587 connections, of which 573 are residential, 9 commercial, 1 industrial, and 4 institutional. Approximately 99% of the sewer lines are 20 years old or older. There is one wastewater treatment plant associated with this system. It has a design capacity of 160,000 gallons per 24-hour period. There are 4 sewage pumping stations associated with this system. System failures rarely occur and are due to pumping station failure.

This system's needs include line extensions to subdivision areas. Plant upgrades are also needed to meet new environmental regulations.

Proposed Projects 2000-2005

21-225-004

This project involves connecting the lower lagoon to a storm drain sewer just south of the Uniontown Heights Sub-Division and adding an ultraviolet treatment light at the lagoon. This project is in the planning stages and is expected to be complete by March 2000

Priority: I
Project Owner: Uniontown Water Works
Cost Estimate: \$ 250,000
Effectuated Customers/Area: 587

21-225-005

This project involves extending a line through the Uniontown Heights Sub-Division approximately 1,500 feet along Ruark Drive. Twenty new customers are expected to be served as a result of this project.

Priority: I
Project Owner: Uniontown Water Works

Cost Estimate: \$ 250,000
Effectuated Customers/Area: 20

21-255-007

This project involves the extension of a sewer line about one mile along HWY 130 to the Cunningham Acres Sub-Division. This project is expected to add about 26 new customers.

Priority: I
Project Owner: Uniontown Water Works
Cost Estimate: \$ 50,000
Effectuated Customers/Area: Cunningham Acres Subdivision

Proposed Projects 2006-2020

21-255-006

This project involves extending sewer service to the Uniontown Industrial Park.

Priority: L
Project Owner: Uniontown Water Works
Cost Estimate: \$ 8,500
Effectuated Customers/Area: Industrial Park

WEBSTER COUNTY

Webster County Sewer Service (map)

- Estimated 1999 population of 13,300--40% on public sewer
- Estimated 2020 population of 12,600--45% on public sewer
- Proposed projects would connect about 260 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$3,160,000
- Estimated funding needs for public sewer 2006-2020--\$1,000,000

Webster County had an estimated population of 13,278 (5,450 households) in 1999 with a projected population of 12,600 (5,500 households) in 2020. Public sewer is provided to about 40 percent of the county's residents. About 3,300 of the county's households treat wastewater on-site. About 260 customers could be added to public sewer service through new line extensions in 2000-2020.

WEBSTER 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)
WEBSTER							-
Clay City							-
21-233-002				1,200			1,200
21-233-003	30	100					100
21-233-004	30	208					208
21-233-005	7	30					30
21-233-006	20	40					40
Total	87	378		1,200			1,578
Dixon	21-233-001	15+Ind	90				90
Providence							-
21-233-007	100	450				750	1,200
21-233-008	13	30					30
21-233-010	14	40					40
21-233-011						20	20
21-233-012			200				200
Total	127	520	200			770	1,490
County Total	214	988	200	1,200	-	770	3,158

SEWER SERVICE AREAS

WEBSTER COUNTY

Kentucky



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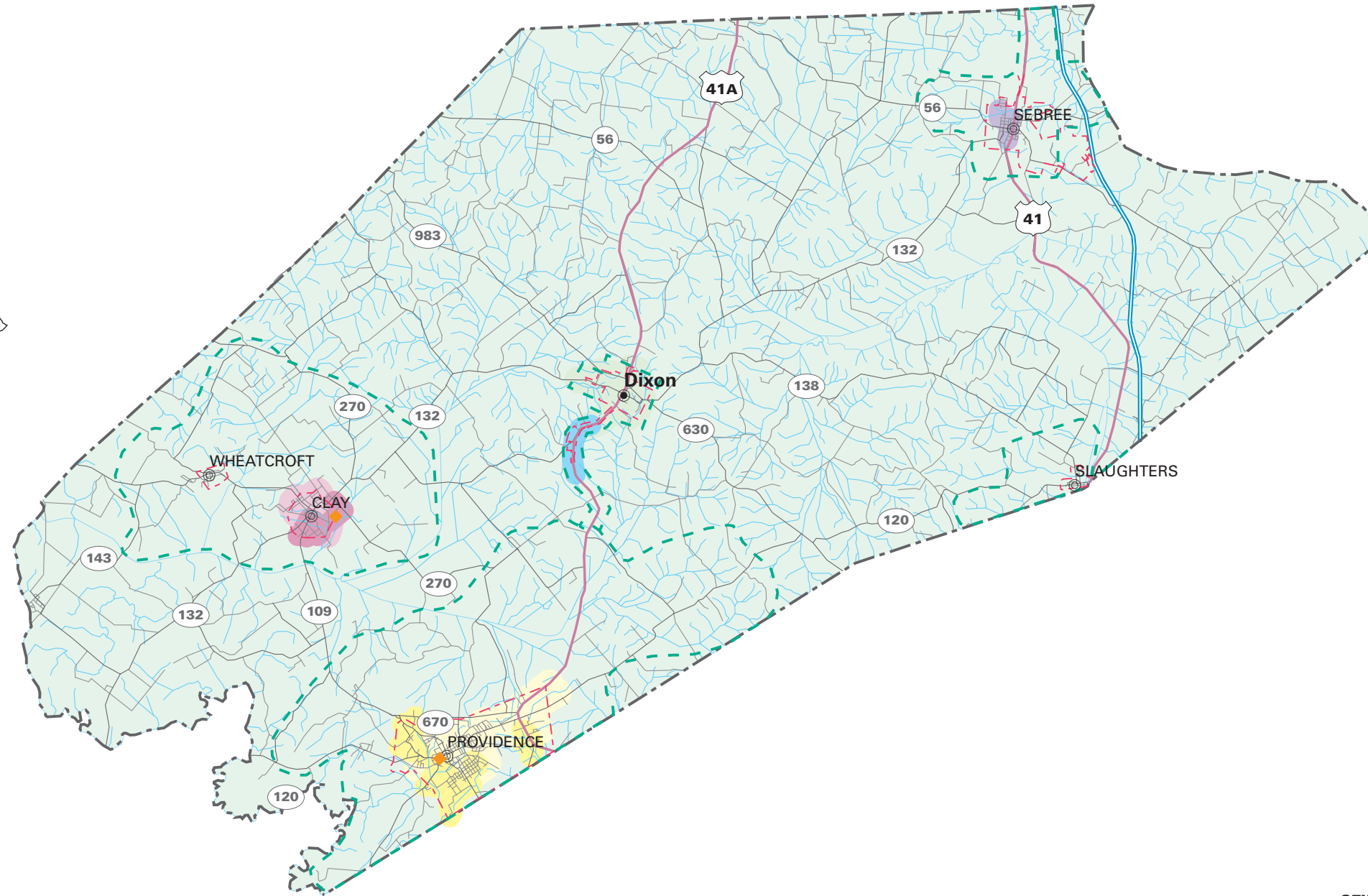
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LIMITATION OF LIABILITY: The Water Resource Development Commission has no reason to believe that there are any inaccuracies or defects in information incorporated in this work and make no representations of any kind, including, but not limited to, the warranties of merchantability or fitness for a particular use, nor any such warranties to be implied, with respect to the information or data furnished herein.

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



SEWER SERVICE STATUS BY OWNER

EXISTING SERVICE AREA	PROPOSED SERVICE AREA	OWNER
■	■	WEBSTER COUNTY COLLECTION SYSTEM
■	■	SEBREE WATER DEPARTMENT
■	■	PROVIDENCE WATER WORKS
■	■	DIXON WATER DEPARTMENT
■	■	CLAY WATER WORKS

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)
WEBSTER							
Providence 21-233-009	50	1,000					1,000

The residents of Webster County are presently provided wastewater service by four systems: the Dixon Water Department, Clay Water Works, Providence Water Department, and Sebree Water Department.

DIXON WATER DEPARTMENT

The City of Dixon currently does not operate a Wastewater Treatment Plant. The City of Providence is responsible for treatment of Dixon’s wastewater. The City of Dixon is responsible for the operation and maintenance of the collection system. The system currently maintains six (6) sewage pump stations.

Dixon on has one sewer line extension project that it wishes to undertake. The district would like to extend the existing sewer main out Hwy 41 approximately 2.5 miles. This extension will service the Dapco Industry that has recently located in the area. To meet current as well as future needs of the county the following projects have been ranked by Dixon Water Department system representatives, elected officials, and the Green River Area Development District Water Supply Planning Council as being crucial to the future growth and development of the region.

Proposed Projects 2000-2005

21-233-001

This project will extend the existing sewer main out Hwy 41 approximately 2.5 miles to pick up the new Dapco Industry.

Priority: I
 Project Owner: Dixon Water Department
 Cost Estimate: \$90,000
 Effected Customers/Area: 15

CLAY WATER WORKS

The Clay Water Department operates a 200,000-gallon per day wastewater treatment plant. The system currently serves approximately 617 residential customers. The district only operates and maintains two pump stations, one at the treatment site and one located within

the collection system. The water district has 2 certified employees for operation and distribution. The other employees provide billing and financial oversight.

The Clay Water Department would like to upgrade the existing wastewater treatment plant by installing an additional pump station to transport effluent water to the Tradewater River that will serve as a secondary effluent site. The Division of Water has mandated this project. The district would also like to make four (4) extensions. One includes the extension of existing sewer main along East Vick St. The second project involves the extension of sewer main along Hwy 109 for approximately one mile. This project will require the installation of a pump station. The third project involves the extension of sewer main just off of the existing line running adjacent E. Vick St. The fourth extension project involves the extension of sewer main by connecting to an existing main and running parallel Hwy 132 and extending up Hwy 270. To meet current as well as future needs of the county the following projects have been ranked by Dixon Water Department system representatives, elected officials, and the Green River Area Development District Water Supply Planning Council as being crucial to the future growth and development of the region.

Proposed Projects 2000-2005

21-233-002

This project involves the upgrading of the existing plant by installing an additional pump station to transport effluent water to the Tradewater River that will serve as a secondary effluent site. The Division of Water mandated this project.

Priority: I
Project Owner: Clay Water Works
Cost Estimate: \$1,200,000
Effected Customers/Area: 370

21-233-003

This project involves the extending of sewer main along East Vick St.

Priority: I
Project Owner: Clay Water Works
Cost Estimate: \$100,000
Effected Customers/Area: 30 additional customers along E. Vick St.

21-233-004

This project involves the extension of sewer main along Hwy 109 for approximately one mile. This project will require the installation of a pump station.

Priority: I
Project Owner: Clay Water Works
Cost Estimate: \$208,000

Effectuated Customers/Area: 30 residents

21-233-005

This project involves the extension of sewer main just off of the existing line running adjacent E. Vick St.

Priority: I
Project Owner: Clay Water Works
Cost Estimate: \$30,000
Effectuated Customers/Area: 7 residents

21-233-006

This project involves the extension of sewer main by connecting to an existing main and running parallel Hwy 132 and extending up Hwy 270.

Priority: I
Project Owner: Clay Water Works
Cost Estimate: \$40,000
Effectuated Customers/Area: 20 residents

PROVIDENCE WATER WORKS

The Providence Water Works currently operates a 629,000-gallon per day wastewater treatment plant. The system currently maintains eight (8) pumps station, two of which are located at the treatment plant. The wastewater district has four (4) certified employees for operation of the plant and the collection system. The other employees provide billing and financial oversight.

The Providence Water Works have several projects they would like to pursue. The system would like to extend sewer mains along Hwy 293 approximately 1.5 miles. This extension will require the installation of two pump stations. The district would also like to extend sewer mains along North Highland Street approximately 650 feet. A third extension includes the extension of sewer mains out Elder Lane, Mitchell Street, Tower Drive, Ewing Drive, Oak Lawn, and Lake Road. The fourth extension involves the extension of sewer mains along Barnes Street, College Avenue, and Coleman Street. The fifth project involves the refurbishing of an existing pump station. The last project involves the installation of a pump station and sewer main along Hwy 814 for approximately 4, 000 feet. To meet current as well as future needs of the county the following projects have been ranked by Providence Water Works system representatives, elected officials, and the Green River Area Development District Water Supply Planning Council as being crucial to the future growth and development of the region.

Proposed Projects 2000-2005

21-233-007

This project will extend sewer mains along Hwy 293 approximately 1.5 miles. With these extensions, two lift stations will be necessary.

Priority: I
Project Owner: Providence Water Department
Cost Estimate: \$1,200,500
Effectuated Customers/Area: 100 new customers

21-233-008

This project will extend sewer mains along North Highland Street approximately 650 feet from Evergreen Street.

Priority: I
Project Owner: Providence Water Department
Cost Estimate: \$30,000
Effectuated Customers/Area: 13 new customers

21-233-010

This project will extend sewer mains along Barnes St, College Ave, and Coleman St. approximately 1,000 feet.

Priority: I
Project Owner: Providence Water Department
Cost Estimate: \$40,000
Effectuated Customers/Area: 14 new customers

21-233-011

This project involves the refurbishing the existing pump station by installing a new wet well.

Priority: I
Project Owner: Providence Water Department
Cost Estimate: \$20,000
Effectuated Customers/Area: Entire District

21-233-012

This project involves the installation of a pump station and sewer main extension along Hwy 814 for approximately 4,000 feet.

Priority: I
Project Owner: Providence Water Department
Cost Estimate: \$200,000
Effectuated Customers/Area: Hwy 814

Proposed Projects 2006-2020

21-233-009

This project will extend sewer mains to several streets adjacent to Hwy 1480. These streets are Elder Lane, Mitchell St., Tower Drive, Ewing Drive, Oak Lawn, and Lake Rd. This extension is approximately 1.5 miles.

Priority: L
Project Owner: Providence Water Department
Cost Estimate: \$1,000,000

Effected Customers/Area: 50 new customers

SEBREE WATER DEPARTMENT

The Sebree Water Department did not participate in the Phase I Wastewater Survey.

The need for this system is the replacement of the main trunk line that runs to the wastewater treatment plant. This action is mandated by the Division of Water.

Proposed Projects 2000-2005

21-233-013

This project involves the replacement of the main trunk line that runs to the wastewater treatment plant. The replacement of this main has mandated by the Division of Water due to I and I problems.

Priority: I
Project Owner: Sebree Water Department
Cost Estimate: \$300,000
Effected Customers/Area: 581