

Strategic Water Resource Development Plan

Summary of Wastewater Treatment Systems Pennyrile Area Development District

Water Resource Development Commission

March, 2000

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MAP LISTING

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Pennyriple Area Development District

300 Hammond Drive
Hopkinsville, KY 42240
(502) 886-9484

ADD WASTEWATER SUMMARY

ADD Sewer Service (map)

- Estimated 1999 population of 207,000--52% on public sewer
- Estimated 2020 population of 228,000--60% on public sewer
- Proposed projects would connect about 6,500 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$76,200,000
- Estimated funding needs for public sewer 2006-2020--\$0

The Pennyriple Area Development District region had an estimated population of 206,990 (83,759 households) in 1999 with a projected population of 222,700 (94,600 households) in 2020. Public sewer systems serve 108,000 area residents, or 52 percent of the population. Proposed sewer line extensions for the period 2000-2020 would provide service to an additional 6,500 households. About 99,000 people in the region currently rely on onsite treatment systems.

Estimated populations and public sewer service for the nine counties in the region are given below (26 public sewer systems serve the region):

County	1999 Pop	On Public	2020 Pop	On Public
Caldwell	13,300	6,700 (50%)	13,700	7,500 (55%)
Christian	66,700	46,700 (70%)	77,500	58,100 (75%)
Crittenden	9,350	3,300 (35%)	8,950	3,400 (38%)
Hopkins	45,700	27,400 (60%)	44,800	26,900 (60%)
Livingston	9,300	2,500 (27%)	9,300	3,400 (37%)
Lyon	6,800	2,200 (32%)	7,300	3,300 (45%)
Muhlenberg	32,000	11,200 (35%)	34,100	15,300 (45%)
Todd	11,200	3,900 (35%)	11,100	4,400 (40%)
Trigg	12,600	4,200 (25%)	16,000	10,400 (65%)
<i>Region</i>	207,000	108,000 (52%)	223,000	133,000(60%)

EXISTING & PROPOSED SEWER SERVICE

PEADD Kentucky

Prepared By:

Water Resource Development Commission

Department for Local Government
1024 Capital Center Drive, Suite 340
Frankfort, Kentucky 40601-8204
502-573-2382 -- 502-573-2939 fax
<http://dlgnt1.state.ky.us/wrdc/>

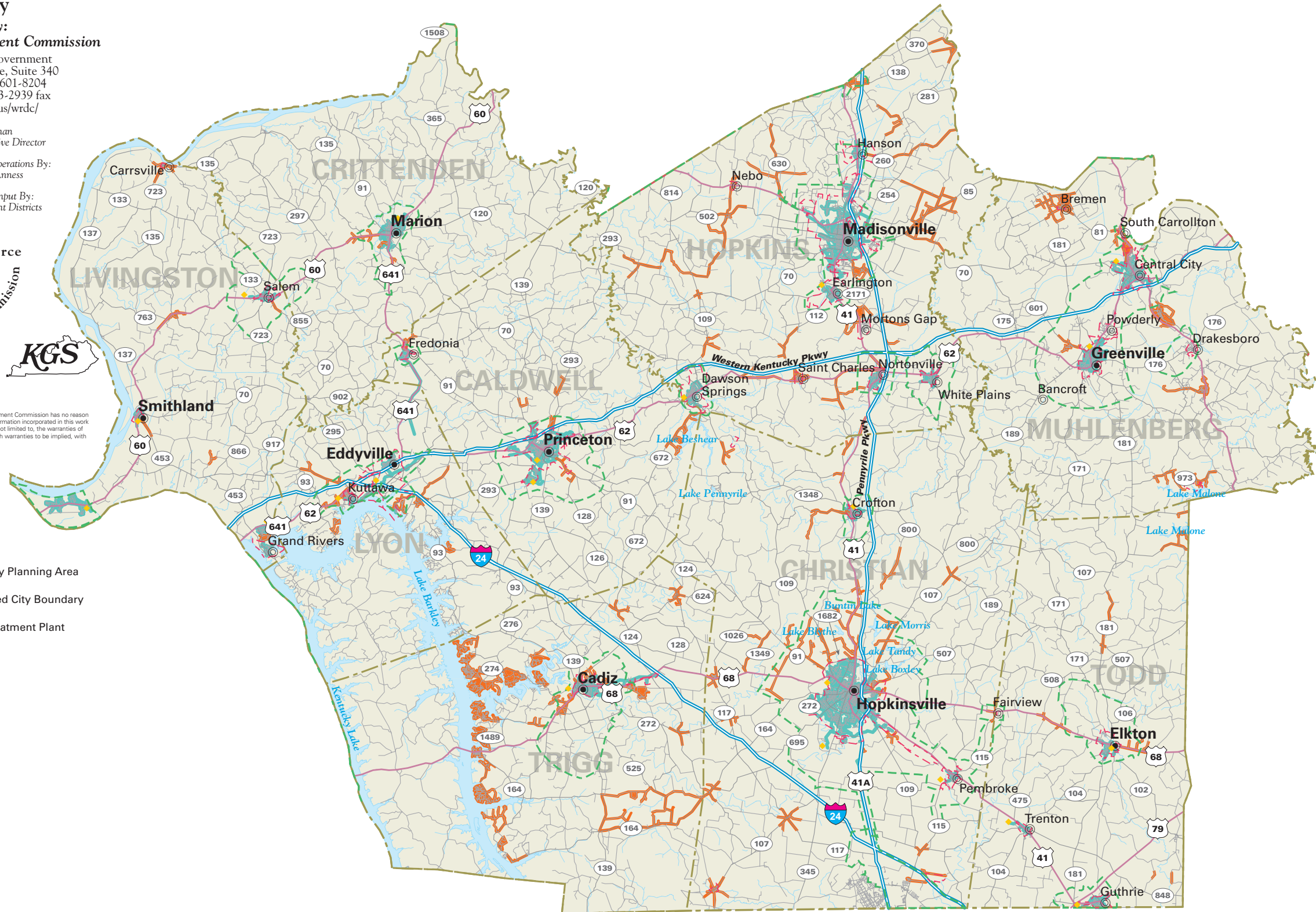
Bob Arnold, Chairman
Lawrence Wetherby, Executive Director

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
— 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 (\$1,000)	Line Upgrade (\$1,000)	Treatment Expansion (\$1,000)	New Treatment (\$1,000)	Lift Stations, and other (\$1,000)	Total Costs (\$1,000)
CALDWELL							-
No Jurisdiction	288	3,000					3,000
Princeton	42	500					500
Fredonia	5	100					100
County Total	335	3,600					3,600
							-
CHRISTIAN							-
Outside existing Jurisdiction	700	8,952					8,952
Oak Grove	225	2,250					2,250
Hopkinsville	395	3,950					3,950
Crofton	20	200					200
County Total	1,340	15,352					15,352
							-
CRITTENDEN							-
Marion	104	1,070					1,070
							-
HOPKINS							none
							-
LIVINGSTON							-
Outside existing systems	313	3,100					3,100
Grand River 21139005	65	950					950
Smithland 2139003	24	1,250					1,250
County Total	402	5,300					5,300
							-
LYON							-
Outside existing jurisdictions	199	2,500					2,500
Eddyville	239	2,500	-	2,000			4,500
County Total	438	5,000	-	2,000			7,000
							-
MUHLENBERG							-
Outside existing systems	1,232	15,250					15,250
							-
TODD							-
Outside existing systems	305	3,600					3,600
							-
TRIGG							-
Barkley Lake Area*	2,336	25,000					25,000
*Costs under lines includes							
an allowance for a treatment							
plant.							
Pennyrile ADD Total	6,492	74,172		2,000			76,172

Proposed Projects 2006-2020

All sewer needs were for the period 2000-2005.

CALDWELL COUNTY

Caldwell County Sewer Service (map)

- Estimated 1999 population of 13,300--50% on public sewer
- Estimated 2020 population of 13,700--55% on public sewer
- Proposed projects would connect about 335 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$3,600,000
- Estimated funding needs for public sewer 2006-2020--\$0

Caldwell County had an estimated population of 13,331 (5,707 households) in 1999 with a projected population of 13,741 (6,123 households) in 2020. Public sewer is provided to about 50 percent of the county's residents. About 2,850 households in the county use on-site wastewater treatment. About 335 customers could be added to public sewer service through new line extensions in 2000-2020.

CALDWELL COUNTY SEWER PLAN

Proposed Projects 2000-2005

System	New Customers Served	Cost (\$1,000)	Line Upgrade (\$1,000)	Treatment Expansion (\$1,000)	New Treatment (\$1,000)	Lift Stations, and other (\$1,000)	Total Costs (\$1,000)
CALDWELL							-
No Jurisdiction							-
SX21033001	96	400					400
SX21033002	6	100					100
SX21033003	25	400					400
SX21033004	8	100					100
SX21033006	153	2,000					2,000
Total	288	3,000					3,000
Princeton	42	500					500
Fredonia	5	100					100
County Total	335	3,600					3,600

Proposed Projects 2006-2020

All sewer needs were for the period 2000-2005.

CITY OF FREDONIA WATER AND SEWER DEPARTMENT

The City of Fredonia operates a sanitary sewer collection system which serves all of the residences and businesses within its' corporate limits. The system, established in 1995 is

composed of both gravity flow and force main lines of various sizes. Once the wastewater has been collected, it is then pumped by one of the systems two pump stations to the city of Eddyville's treatment facility for treatment. Fredonia currently has a contractual agreement with the city of Eddyville for treatment services at its 750,000 gallons per day treatment facility.

The system currently has a total of 217 service connections, of which 203 are residential connections and 14 are commercial. The minimum bill for a customer of the system is \$21.30 for the first 2000 gallons with each additional 1,000 gallons costing an additional \$2.90. Due to the newness of its collection system, there are very few repair needs, but as a result of population growth in and around the city of Fredonia, the following project has been documented.

Proposed Projects

SX21033005

Area: along highway 902 just outside of the city of Fredonia

Number of Lots: 3-5

Problem: Small lots and Shallow soil depth

CITY OF PRINCETON WATER & WASTEWATER COMMISSION

The City of Princeton operates a sanitary sewer collection and treatment system which serves all of the residences and businesses within its' corporate limits. The collection system, established in 1997 is composed of both gravity flow and force main lines of various sizes. Once the wastewater has been collected, it is then pumped by one of the systems six pump stations to the city's treatment facility for treatment. Princeton's treatment facility currently has a capacity of 1.57 million gallons per day and is currently operating at approximately 70% of its design capacity.

The system currently has a total of 3,400 service connections, of which 3,060 are residential, 338 are commercial and 2 are industrial connections. The minimum bill for a customer of the system is \$5.78 for the first 150 cubic feet of water usage with the next 800 cubic feet costing \$3.53 per 100 cubic feet. Due to the newness of its collection system, there are very few repair needs, but due to the terrain in and around the city there are areas that are as of

now not provided with Publicly administered services. The following listing details those areas.

<u>Area:</u>	<u>Problem</u>	<u>Number of Lots</u>
Sandlick Road Area (#637-1431)	Heavy rock content	approx. 13
Hopkinsville Road (UK center to KY stone)	Heavy rock content	approx. 19
Lakeshore Drive & Morse Ave	Heavy rock content	approx. 05
N. Jefferson & Oak Street	Elevation problems	approx. 05

ON-SITE TREATMENT SYSTEMS

Of all the Caldwell County residents only those residing within the city limits of Princeton and Fredonia have access to public sewer services. The remaining residents are afforded the services via individual septic systems. Caldwell County has mostly an agricultural based economy and those areas outside of city limits of Princeton and Fredonia are very sparsely populated and therefore the extension of sewer lines throughout the county maybe financially unfeasible. However, there are some developments within areas of the county that are experiencing problems and could possibly benefit from some sort of cluster system. The areas listed below have been determined to be problem areas due to lack of properly functioning septic systems. The extension of the lines and boundaries of existing municipal systems have been determined to be the best solution for those areas that lie within an acceptable distance from existing service. For the areas that are located outside of any municipal systems' jurisdiction and (in most cases) a cluster system has been identified as a possible solution, the following would apply:

- 1.) A wetlands or lagoon would best serve any area with a daily flow of less than 7,000 gallons per day (i.e. twenty 3-bedroom homes).

Before this recommendation can be made the following must be taken into account:

- The required amount of land for this area must be available
- A soil type and depth analysis must be performed to determine if both are adequate
- The operations & maintenance issue must be addressed.

- 2.) A package treatment plant would best serve any area with a daily waste flow of more than 7,000 gallons per day (i.e. twenty 3-bedroom homes).

Before this recommendation can be made the following must be taken into account:

- This plant must be permitted by the EPA and have a surface discharge.

- This plant must also be located near a “Blue Line Stream that can handle the discharge from the facility
- The required amount of land for the facility must be available
- The operations & maintenance issue must be addressed.

Proposed Projects

SI21033002

Area: Railroad Lake Subdivision off of Highway 91 South (bordered by Hwy 91, Hwy 128 & Pool Cemetery Road)

Number of Lots: six (2-7 acre) tracts

Problem: Shallow Fragipan, limestone outcroppings and limestone bedrock

SI21033001

Area: Scarlett Oaks (Pines) Subdivision off of Hwy 139 North (bordered by Carner Hill Rd & Easy Street)

Number of Lots: 96 Lots (10 are occupied)

Problems: Shallow Fragipan and massive amounts of clay deposits

SI21033003

Area: Green Acres Subdivision off of Hwy 293 North (bordered by Hwy 293 & Old Wilson Warehouse Rd)

Number of Lots: Approximately 25 (6 currently occupied)

Problems: Shallow Fragipan

SI21033004

Area: Sugar Creek Subdivision off of Hwy 293 North (bordered by Hwy 293, Hwy 1119 & Sugar Creek Rd)

Number of Lots: Approximately 8

Problem: Shallow Fragipan and elevation doesn't allow curtain drains to gravity drain into roadside ditches

SI21033006

<i>Area:</i>	<i>Lake Beshears Area Subdivisions</i>	<i>Number of Lots</i>
	Redden Boat Dock Road	21
	Lakewood Drive	approx. 15
	Lisanby Point Road	6
	Bayshore Drive	3
	Lakeshore Drive	32
	Amon Lisanby Road & Rotweiller Lane	30

Amon Lisanby Spur Road	3
Island Cove Road & Island Cove Lane	19
Big Bluff (gated community)	approx. 15
Markham Road	9

Problem: Small lot sizes, limestone deposits, and area are scheduled to get county water and will become a high growth area creating more problems in area of sewer disposal

CHRISTIAN COUNTY

Christian County Sewer Service (map)

- Estimated 1999 population of 66,700--70% on public sewer
- Estimated 2020 population of 77,500--75% on public sewer
- Proposed projects would connect about 1,350 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$15,400,000
- Estimated funding needs for public sewer 2006-2020--\$0

Christian County had an estimated population of 66,747 (25,098 households) in 1999 with a projected population of 77,456 (29,756 households) in 2020. Public sewer is provided to about 70 percent of the households. About 7,500 households use on-site systems. About 1,350 customers could be added to public sewer service through new line extensions in 2000-2020.

CHRISTIAN COUNTY SEWER PLAN

Proposed Projects 2000-2005

System	New Customers Served	Cost (\$1,000)	Line Upgrade (\$1,000)	Treatment Expansion (\$1,000)	New Treatment (\$1,000)	Lift Stations, and other (\$1,000)	Total Costs (\$1,000)
CHRISTIAN							-
Outside existing Jurisdiction							-
SX21047001	20	200					200
SX21047002	25	350					350
SX21047004	20	200					200
SX21047005	50	500					500
SX21047007	50	500					500
SX21047008	20	300					300
SX21047009	100	1,000					1,000
SX21047012	20	200					200
SX21047013	70	1,000					1,000
SX21047018	50	700					700
SX21047019	50	750					750
SX21047020	50	750					750
SX21047021	50	750					750
SX21047022	50	750					750
SX21047023	50	750					750
SX21047024	25	252					252
Total	700	8,952					8,952

Oak Grove							-
21047017	200	2,000					2,000
21047016	25	250					250
Total	225	2,250					2,250
Hopkinsville							-
SX2147008	100	1,000					1,000
SX2147010	40	400					400
SX2147011	40	400					400
SX2147014	25	250					250
SX2147015	40	400					400
SX2147026	150	1,500					1,500
Total	395	3,950					3,950
Crofton 21047003	20	200					200
County Total	1,340	15,352					15,352

Proposed Projects 2006-2020

All sewer needs were for the period 2000-2005.

CITY OF CROFTON WATER DEPARTMENT

The City of Crofton operates a sanitary sewer collection and treatment system which serves all of the residences and businesses within its corporate limits. The collection system is composed of both gravity flow and force main lines of various sizes. Once the wastewater has been collected, it is then pumped by one of the systems four pump stations to the city's treatment facility for treatment.

The system currently has a total of 613 service connections, of which 591 are residential, 20 are commercial and 2 are industrial connections. Customers of the system are charged according to the following rate structure:

- city residential customers are charged a minimum of \$10.71 for the first 1,000 gallons of usage with all above being charged at \$4.06 per 1,000 gallons;
- county residential customers are charged a minimum of \$12.21 for the first 1,000 gallons of usage with all above being charged at \$4.06 per 1,000 gallons;
- business customers are charged a minimum of \$13.21 for the first 1,000 gallons of usage with all above being charged at \$4.06 per 1,000 gallons.

The Christian County Health Department has identified the following project area as having potential or existing problems with their septic systems. It has also been determined that a possible solution would be the extension of the existing system boundary to provide adequate service.

Proposed Projects

SX21047003

Area: North Christian County area along Hwy 800 and Old Palestine Road

Number of Lots: approximately 20

Problems: Poor soil content

CITY OF OAK GROVE WATER DEPARTMENT

The City of Oak Grove operates a sanitary sewer collection and treatment system which serves all of the residences and businesses within its' corporate limits. The collection system is composed of both gravity flow and force main lines of various sizes. Once the wastewater has been collected, it is then pumped by one of the systems eleven pump stations to the city's treatment facility for treatment.

The system currently has a total of 1,804 service connections, of which 1701 are residential and 103 are commercial. Customers of the system are charged according to the following rate structure:

- residential customers are charged a minimum of \$12.10 for the first 1,000 gallons of usage with all above being charged at \$3.60 per 1,000 gallons
- commercial customers are charged minimums (1,000 gallons of usage) based on the size of the meters from which they are served: 5/8 x3/4 inch - \$15.00; 1inch - \$28.00; 1.5 inch - \$35.00; 2 inch - \$60.00; 3 inch - \$105.00; 4 inch - \$145.00; and 6 inch \$325.00 with each additional 1,000 gallons of usage being \$4.25.

The Christian County Health Department has identified the following project area as having potential or existing problems with their septic systems. It has also been determined that a possible solution would be the extension of the existing system boundary to provide adequate service.

Proposed Projects

SX21047017

Area: Southeast Christian County, developments along Good Hope Cemetery Road, Derby Park, Bumpus Mill Road Carneal Lane and Anderson Estates

Number of Lots: approximately 200

Problems: Poor soil content and Small lot sizes

SX21047016

Area: Southeast Christian County, the St. Elmo Community

Number of Lots: approximately 25

Problems: Sink holes and Small lot sizes

HOPKINSVILLE WATER ENVIRONMENT AUTHORITY

The Hopkinsville Water Environment Authority operates a sanitary sewer collection and treatment system which serves all of the residences and businesses within its' corporate limits, the citizens of Pembroke as well as a number of residents located out in the county. The collection system, established in 1896 which has experienced tremendous growth and improvements, is composed of both gravity flow and force main lines of various sizes. Once the wastewater has been collected, it is then pumped by one of the systems seventy or so pump stations to one of the system's two-treatment facility for treatment. The Hammond-Wood Treatment plant, the systems largest, has a design capacity of 6.0 million gallons per day. At present it is operating at 40% of its design capacity. The systems other facility, the Northside Wastewater treatment plant, has a 2.88 MGD capacity and is operating at 54% of its capacity.

The system currently has a total of 11,719 service connections, of which 10,113 are residential connections 1,454 are commercial, 98 are institutional and 54 are industrial connections. The minimum bill for a customer of the system is \$7.47 for up to 300 cubic feet of water usage. The systems rate structure is as follows:

- \$2.490 per 100 cubic feet for up to 3000 cubic feet of usage
- \$2.157 per 100 cubic feet for usage of greater than 3000 cubic feet up to 6000 cubic feet
- \$1.804 per 100 cubic feet for usage of greater than 6000 cubic feet up to 9000 cubic feet
- \$1.532 per 100 cubic feet for usage of greater than 9000 cubic feet

The Christian County Health Department has identified the following project areas as having potential or existing problems with their septic systems. It has also been determined that a possible solution would be the extension of the existing system boundary to provide adequate service.

Proposed Projects

SX21047026

Area: North Christian County area along Butler & Gospel Peace Road

Number of Lots: approximately 150

Problems: Small lot sizes and Poor Drainage

SX21047008

Area: North Christian County area that includes developments along Hwy 41 North, Billy Goat Road, Green Hill Road, Mt Zoar Road and Latham Road

Number of Lots: approximately 100

Problems: Small lot sizes and Poor soil conditions

SX21047010

Area: North Christian County area along Dawson Springs Road

Number of Lots: approximately 40

Problems: Small lot sizes and Poor soil conditions

SX21047011

Area: North Christian County area along Princeton Road (including 3 subdivisions – Country Acres, Ridgehill & Happy Hollow)

Number of Lots: approximately 40

Problems: Poor soil conditions

SX21047014

Area: Southeast Christian County – the Caskey Community

Number of Lots: approximately 25

Problems: Small lot sizes and Poor soil conditions

SX21047015

Area: Southeast Christian County area along Hwy 41-A (existing line exists)

(Trailer Park & subdivision - Berry's Mobile Home Park & Pleasant View Acres)

Number of Lots: approximately 40

Problems: Small lot sizes and Poor soil conditions

ON-SITE TREATMENT SYSTEMS

Of all the Christian County residents only those residing within the city limits of Crofton, Oak Grove, Pembroke and Hopkinsville have access to public sewer services (with the

possible exceptions of residents that live in areas outside of the Hopkinsville City Limits). The remaining residents are afforded the services via individual septic systems. Because of the County's large Industrial base and the activities of the nearby Fort Campbell Army Installation, the county has experienced tremendous growth in its rural areas. Due to the expansive area of Christian County and the great distances between developments, the extension of sewer lines throughout the county maybe financially unfeasible. However, due to this rapid growth, there are some developments within areas of the county that are experiencing problems and could possibly benefit from some sort of cluster system. The areas listed below have been determined to be problem areas due to lack of properly functioning septic systems. The extension of the lines and boundaries of existing municipal systems have been determined to be the best solution for those areas that lie within an acceptable distance from existing service. For the areas that are located outside of any municipal systems' jurisdiction and (in most cases) a cluster system has been identified as a possible solution, the following would apply:

- 1.) A wetlands or lagoon would best serve any area with a daily flow of less than 7,000 gallons per day (i.e. twenty 3-bedroom homes).

Before this recommendation can be made the following must be taken into account:

- The required amount of land for this area must be available
- A soil type and depth analysis must be performed to determine if both are adequate
- The operations & maintenance issue must be addressed.

- 2.) A package treatment plant would best serve any area with a daily waste flow of more than 7,000 gallons per day (i.e. twenty 3-bedroom homes).

Before this recommendation can be made the following must be taken into account:

- This plant must be permitted by the EPA and have a surface discharge.
- This plant must also be located near a "Blue Line Stream that can handle the discharge from the facility
- The required amount of land for the facility must be available
- The operations & maintenance issue must be addressed.

Proposed Projects

SI21047009

Area: North Christian County along Greenville Road, Cansler Road and Woodburn Highway

Number of Lots: approximately 100

Problems: Poor Drainage

SI21047001

Area: North Christian County along Johnson Mills Road

Number of Lots: approximately 20

Problems: Poor Soil Conditions

SI21047013

Area: North Christian County, the Community of Fairview

Number of Lots: approximately 70

Problems: Very Small Lots, Large Rock Deposits, and Poor Soil Conditions

SI21047007

Area: North Christian County, the Community of Kelly

Number of Lots: approximately 50

Problems: Very Small Lots and Poor Soil Conditions

SI21047006

Area: North Christian County, the Lake Beshears area off Hwy 109

Number of Lots: approximately 20

Problems: Large Rock Deposits, and Poor Soil Conditions

SI21047005

Area: North Christian County, the Community of Mannington off KY Hwy 407

Number of Lots: approximately 50

Problems: Very Small Lots and Poor Soil Conditions

SI21047004

Area: North Christian County, the Community of Empire off US Hwy 41

Number of Lots: approximately 20

Problems: Very Small Lots and Poor Soil Conditions

SI21047002

Area: North Christian County, the Community of Fearsville off KY Hwy 107

Number of Lots: approximately 25

Problems: Very Small Lots and Poor Soil Conditions

SI21047012

Area: North Christian County, the area along Gilkey & Whitty Lane

Number of Lots: approximate 20

Problems: Very Small Lots and Poor Soil Conditions

SI21047025

Area: Southwestern Christian County, area on Everett's Lane and Petsch Lane

Number of Lots: approximately 75

Problems: Large Rock Deposits, Sinkholes and Poor Soil Conditions

SI21047023

Area: Southwestern Christian County, area on Quisenberry Lane (KY 1349)

Number of Lots: approximately 50

Problems: Large Rock Deposits, Sinkholes and Poor Soil Conditions

SI21047018

Area: Southwestern Christian County, Community of Lafayette

Number of Lots: approximately 50

Problems: Water Table

SI21047022

Area: Southwestern Christian County, Community of Gracey

Number of Lots: approximately 50

Problems: Extremely Small Lots and Poor Soil Conditions

SI21047019

Area: Southwestern Christian County, Community of Herndon

Number of Lots: approximately 50

Problems: Extremely Small Lots and Poor Soil Conditions

SI21047021

Area: Southwestern Christian County, Community of Julien

Number of Lots: approximately 50

Problems: Extremely Small Lots and Poor Soil Conditions

SI21047024

Area: Southwestern Christian County, area on Shurdan Creek Road (off of KY hwy 1349)

Number of Lots: approximately 25

Problems: Large Rock Deposits

SI21047020

Area: Southwestern Christian County, area on Binns Mill Road (in the area of KY hwy 164)

Number of Lots: approximately 50

Problems: Large Rock Deposits, Elevation problems and extremely small lots.

CRITTENDEN COUNTY

Crittenden County Sewer Service (map)

- Estimated 1999 population of 9,350--35% on public sewer
- Estimated 2020 population of 8,950--38% on public sewer
- Proposed projects would connect about 100 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$1,070,000
- Estimated funding needs for public sewer 2006-2020--\$0

Crittenden County had an estimated population of 9,354 (3,955 households) in 1999 with a projected population of 8,955 (4,108 households) in 2020. Public sewer is provided to about 35 percent of the county's residents. About 2,600 households in the county use on-site treatment systems. About 100 customers could be added to public sewer service through new line extensions in 2000-2020.

CRITTENDEN COUNTY SEWER PLAN

Proposed Projects 2000-2005

System	New Customers Served	Cost (\$1,000)	Line Upgrade (\$1,000)	Treatment Expansion (\$1,000)	New Treatment (\$1,000)	Lift Stations, and other (\$1,000)	Total Costs (\$1,000)
CRITTENDEN							-
Marion Sewer System							-
SX21055001	65	270					270
SX21055002	27	650					650
SX21055003	12	150					150
Total	104	1,070					1,070

Proposed Projects 2006-2020

All sewer needs were for the period 2000-2005.

Crittenden County residents are provided water services by two water systems, the City of Marion Water / Sewer System which services 1,730 customers and the Crittenden-Livingston Water District which serves 1,260 of the County's residents. Of these two systems only the City of Marion Water / Sewer System provides the residents of the City of Marion publicly operated sewer services. The remaining residents are afforded the services via individual septic systems.

SEWER SERVICE AREAS CRITTENDEN COUNTY Kentucky

Prepared By:
Water Resource Development Commission

Department for Local Government
1024 Capital Center Drive, Suite 340
Frankfort, Kentucky 40601-8204
502-573-2382 -- 502-573-2939 fax
<http://dlgnt1.state.ky.us/wrdc/>




Bob Arnold, Chairman
Lawrence Wetherby, Executive Director

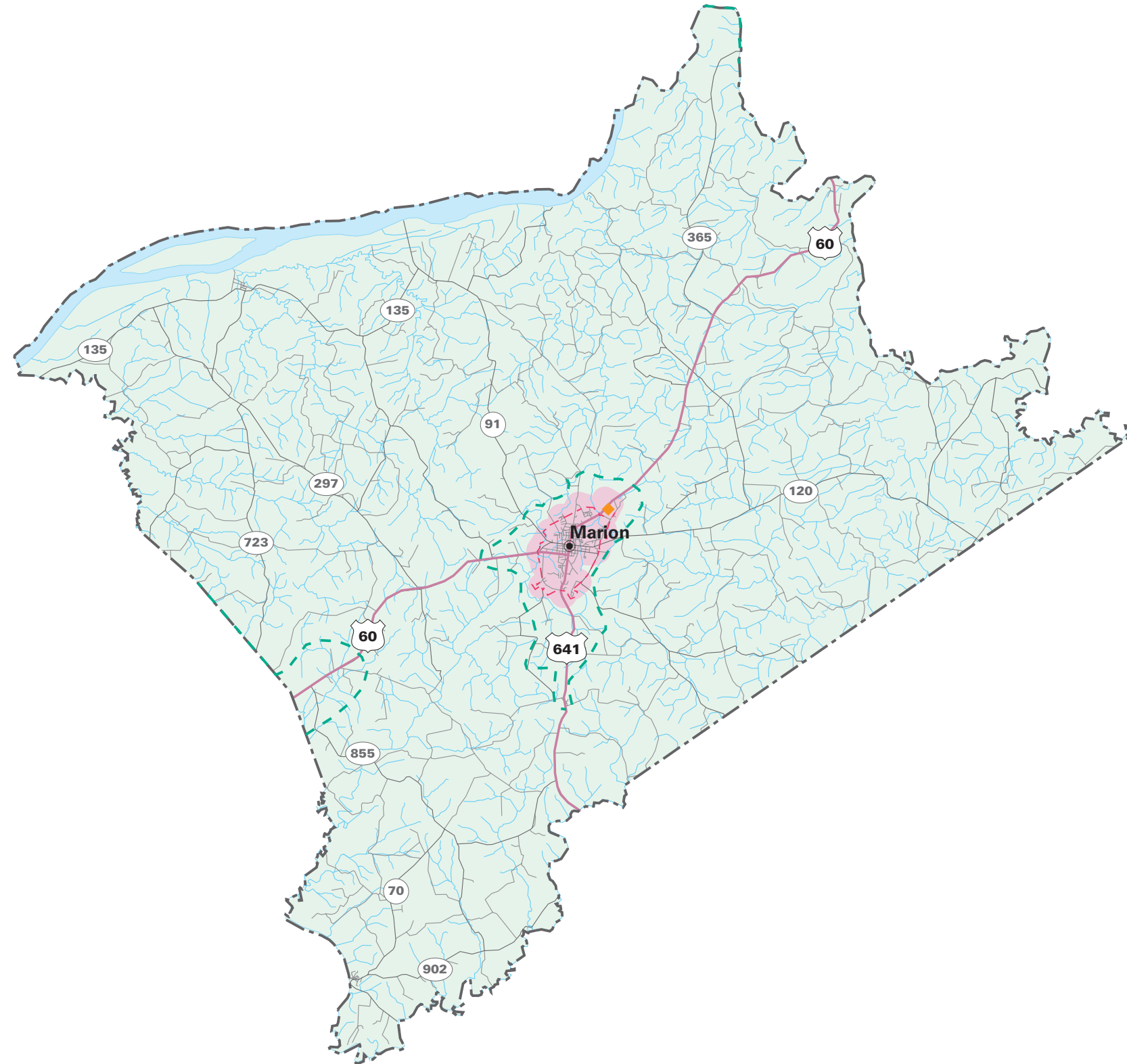
Final GIS & Cartographic Operations By:
Kent Anness & Kim Anness

Data Collection & GIS Input By:
Kentucky Area Development Districts





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

		CITY OF MARION
EXISTING SERVICE AREA	PROPOSED SERVICE AREA	

MARION WATER SYSTEM

The City of Marion operates a sanitary sewer collection and treatment system which serves all of the residences and businesses within its' corporate limits. The collection system, established in 1924 is composed of both gravity flow and force main lines of various sizes. Once the wastewater has been collected, it is then pumped to the city's treatment facility for treatment. Marion's treatment facility currently has a capacity of 0.66 million gallons per day and is currently operating at approximately 124 % of its design capacity. Marion is in dire need of treatment facility expansion, not only to meet the demand of its' existing customer base but also to meet the needs created by any future expansion projects. The system is frequently in non-compliance due to its Inflow and Infiltration problem which is primarily due to the age of its' system.

The Crittenden County Health Department has identified the following project areas as having potential or existing problems with their septic systems. It has also been determined that a possible solution would be the extension of the existing system boundary to provide adequate service.

Proposed Projects

SX21055001

Area: Area just to the west of the city limits of Marion down Hwy 60, along Airport Road and down to Taylor Road (at the top of Moore Hill)

Number of Lots: 57 residences and 8 commercial establishments

Problem: Bad soil content

SX21055003

Area: The Rudd-Hart and Oak Hill Subdivisions (located on Hart Street and Oak Hill Road within the city of Marion)

Number of Lots: 12 residences

Problem: Bad soil content and uneven slopes

ON-SITE TREATMENT SYSTEMS

Since Crittenden County has mostly an agricultural based economy and those areas outside of city limits of Marion are very sparsely populated, the extension of sewer lines throughout the county maybe financially unfeasible. However, there are some developments within areas of the county that are experiencing problems and could possibly benefit from some sort

of cluster system. The areas listed below have been determined to be problem areas due to lack of properly functioning septic systems. The extension of the lines and boundaries of existing municipal systems have been determined to be the best solution for those areas that lie within an acceptable distance from existing service. For those areas that are located outside of any municipal systems' jurisdiction and (in most cases) a cluster system has been identified as a possible solution, the following would apply:

- 1.) A wetlands or lagoon would best serve any area with a daily flow of less than 7,000 gallons per day (i.e. twenty 3-bedroom homes).

Before this recommendation can be made the following must be taken into account:

- The required amount of land for this area must be available
- A soil type and depth analysis must be performed to determine if both are adequate
- The operations & maintenance issue must be addressed.

- 2.) A package treatment plant would best serve any area with a daily waste flow of more than 7,000 gallons per day (i.e. twenty 3-bedroom homes).

Before this recommendation can be made the following must be taken into account:

- This plant must be permitted by the EPA and have a surface discharge.
- This plant must also be located near a "Blue Line Stream that can handle the discharge from the facility
- The required amount of land for the facility must be available
- The operations & maintenance issue must be addressed.

Proposed Projects

SI21055002

Area: Area off Hwy 91 along Coleman Road

Number of Lots: 12 residences and approximately 15 developable lots

Problem: Small lots and Bad soil content

HOPKINS COUNTY

Hopkins County Sewer Service (map)

- Estimated 1999 population of 45,700--60% on public sewer
- Estimated 2020 population of 44,800--60% on public sewer
- Estimated funding needs for public sewer 2000-2005--no estimate
- Estimated funding needs for public sewer 2006-2020--no estimate

Hopkins County had an estimated population of 45,683 (18,815 households) in 1999 with a projected population of 44,756 (19,795 households) in 2020. Public sewer is provided to about 60 percent of the county's residents. About 7,500 households treat wastewater on site.

HOPKINS COUNTY SEWER PLAN

Proposed Projects 2000-2005

System	New Customers Served	Cost (\$1,000)	Line Upgrade (\$1,000)	Treatment Expansion (\$1,000)	New Treatment (\$1,000)	Lift Stations, and other (\$1,000)	Total Costs (\$1,000)
HOPKINS							none

Proposed Projects 2006-2020

NONE

Of the seven municipal water systems -- Dawson Springs, Earlington, Hanson, Madisonville, Mortons Gap, Nortonville and White Plains -- only White Plains has yet to offer publicly operated sewer services to its residents. Dawson Springs, Nortonville, and Madisonville are the only systems in the county that actually operate a treatment facility.

ON-SITE TREATMENT SYSTEMS

Hopkins County, in times past has been heavily strip mined and now contains a large portion of its land that is uninhabited because of it. Another large portion of the county is agricultural and yet another is mostly forest land and wetlands. Due to these land uses, population growth has primarily taken place in pockets, which makes the extension of sewer throughout the county fiscally and in some cases physically unfeasible. However, there are some developments within areas of the county that are experiencing problems and could possibly benefit from some sort of cluster system.

The areas listed below have been determined to be problem areas due to lack of properly functioning septic systems or it has been determined because of the density of the area, that a cluster system might be warranted. The extension of the lines and boundaries of existing municipal systems have been determined to be the best solution for those areas that lie within an acceptable distance from existing service. For the areas that are located outside of any municipal systems' jurisdiction and (in most cases) a cluster system has been identified as a possible solution, the following would apply:

- 1.) A wetlands or lagoon would best serve any area with a daily flow of less than 7,000 gallons per day (i.e. twenty 3-bedroom homes).

Before this recommendation can be made the following must be taken into account:

- The required amount of land for this area must be available
- A soil type and depth analysis must be performed to determine if both are adequate
- The operations & maintenance issue must be addressed.

- 2.) A package treatment plant would best serve any area with a daily waste flow of more than 7,000 gallons per day (i.e. twenty 3-bedroom homes).

Before this recommendation can be made the following must be taken into account:

- This plant must be permitted by the EPA and have a surface discharge.
- This plant must also be located near a "Blue Line Stream that can handle the discharge from the facility
- The required amount of land for the facility must be available
- The operations & maintenance issue must be addressed.

LIVINGSTON COUNTY

Livingston County Sewer Service (map)

- Estimated 1999 population of 9,300--27% on public sewer
- Estimated 2020 population of 9,300--37% on public sewer
- Proposed projects would connect about 400 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$5,300,000
- Estimated funding needs for public sewer 2006-2020--\$0

Livingston County had an estimate population of 9,339 (4,025 households) in 1999 with a projected population of 9,252 (4,398 households) in 2020. Public sewer is provided to about 27 percent of the county's residents. About 2,900 households treat wastewater on site. About 400 customers could be added to public sewer service through new line extensions in 2000-2020.

LIVINGSTON COUNTY SEWER PLAN

Proposed Projects 2000-2005

System	New Customers Served	Cost (\$1,000)	Line Upgrade (\$1,000)	Treatment Expansion (\$1,000)	New Treatment (\$1,000)	Lift Stations, and other (\$1,000)	Total Costs (\$1,000)
LIVINGSTON							-
Outside existing systems							-
SX21139001	100	350					350
SX21139002	200	2,500					2,500
SX21139004	13	250					250
Total	313	3,100					3,100
Grand River 21139005	65	950					950
Smithland 2139003	24	1,250					1,250
County Total	402	5,300					5,300

Proposed Projects 2006-2020

All sewer needs were for the period 2000-2005.

The residents of Livingston County are presently provided water service by five different water systems: the cities of Grand Rivers, Smithland, and Salem, the Ledbetter Water District and the Crittenden-Livingston Water District. The Livingston county residents that reside within the city limits of Grand Rivers, Smithland, and Salem along with those that are within the territory of the Ledbetter Water District are afforded sewer services via a

publicly operated sewer system. The remaining residents are afforded the services by means of individual septic systems.

CITY OF GRAND RIVERS WATER AND SEWER DEPARTMENT

The City of Grand Rivers operates a sanitary sewer collection and treatment system which serves all of the residences and businesses within its' corporate limits as well as those within the limits of the nearby Lake City. The system, established in 1968 is composed of both gravity flow and force main lines of various sizes. Once the wastewater has been collected, it is then pumped by one of the systems five pump stations to the city's treatment facility for treatment. Grand Rivers' treatment facility currently has a capacity of 300,000 gallons per day and is currently operating at approximately 66 % of its design capacity.

The Livingston County Health Department has identified the following project areas as having potential or existing problems with their septic systems. It has also been determined that a possible solution would be the extension of the existing system lines as well as the other necessary equipment to provide adequate service.

Proposed Projects

SX21139006

Area: Unsewered areas of Grand River/Lake City (down Depot, Railroad Hill, Ridge, Hill, Megan, Kendale, Cheryl and Brandon Streets)

Number of Lots: approximately 65 residences.

Problem: Bad soil content, uneven slopes and small lots

CITY OF SMITHLAND WATER WORKS

The City of Smithland operates a sanitary sewer collection and treatment system which serves all of the residences and businesses within its corporate limits, which totals about 304 customers. The system is composed of both gravity flow and force main lines of various sizes. Once the wastewater has been collected, it is then pumped by one of the systems two pump stations to the city's treatment facility for treatment. Smithland's treatment facility currently has a capacity of 700,000 gallons per day and is currently operating at approximately 150 % of its design capacity.

Over the past several years the city has and continues to experience numerous deficiencies in their wastewater system. The system, which was constructed in 1970, consists primarily of clay tile pipe is in dire need of comprehensive repair and improvement. Some of the problems of the system include, overflowing manhole covers and effluent discharge limit violations resulting from severe inflow and infiltration. These problems have resulted in raw sewage overflowing into ditches, yards and its groundwater supply.

Also, the system is exceeding of the treatment facility's design capacity. On an average day the system treats over 50% more wastewater than it was designed to treat and over the past year has seen days where it treated double its capacity. Therefore, monies will also be needed to upgrade its treatment capacity. The cost of this upgrade will be determined after the collection has been repaired using the over \$700,000.00 provided by a Community Development Block Grant, a grant from Rural Development and a Rural Development loan.

Proposed Projects

SX21139001

Area: Area just outside of the city limits along hwy 133

Number of Lots: 25 residences

Problems: Bad soil with uneven elevations

SX21139004

Area: Down Hwy 453 from the NE corner of the city limits to Coon Chapel Road

Number of Lots: approximately 24 residences

Problem: Bad soil content and small lots

ON-SITE TREATMENT SYSTEMS

Livingston County has mostly an agricultural based economy and those areas outside of the incorporated areas of the county are very sparsely populated and therefore the extension of sewer lines throughout the county maybe financially unfeasible. However, there are some developments within areas of the county that are experiencing problems and could possibly benefit from some sort of cluster system. The areas listed below have been determined to be problem areas due to lack of properly functioning septic systems. The extension of the lines and boundaries of existing municipal systems have been determined to be the best solution for those areas that lie within an acceptable distance from existing service. For the areas that

are located outside of any municipal systems' jurisdiction and (in most cases) a cluster system has been identified as a possible solution, the following would apply:

- 1.) A wetlands or lagoon would best serve any area with a daily flow of less than 7,000 gallons per day (i.e. twenty 3-bedroom homes).

Before this recommendation can be made the following must be taken into account:

- The required amount of land for this area must be available
- A soil type and depth analysis must be performed to determine if both are adequate
- The operations & maintenance issue must be addressed.

- 2.) A package treatment plant would best serve any area with a daily waste flow of more than 7,000 gallons per day (i.e. twenty 3-bedroom homes).

Before this recommendation can be made the following must be taken into account:

- This plant must be permitted by the EPA and have a surface discharge.
- This plant must also be located near a "Blue Line Stream that can handle the discharge from the facility
- The required amount of land for the facility must be available
- The operations & maintenance issue must be addressed.

The Livingston County Health Department has identified the following project areas as having potential or existing problems with their septic systems. It has also been determined that a possible solution would be the extension of the existing system lines as well as the other necessary equipment to provide adequate service.

Proposed Projects

SI21139003

Area: The community of Burna along Hwy 60 from North Livingston Elementary School down to Mitchell Road

Number of Lots: 155 residences, 8 commercial establishments and 2 subdivisions under development that will contain at least 20 lots each.

Problem: Bad soil content and very small lots

SI21139005

Area: Area off of Newbern Road down Ringstaff Road

Number of Lots: 12 residences and 1 Church

Problems: Impoverished area with no way of upgrading septic systems

SI21139002

Area: The community of Carrsville along Highways 135 & 137

Number of Lots: 100 residences

Problem: Bad soil content and very small lots

LYON COUNTY

Lyon County Sewer Service (map)

- Estimated 1999 population of 6,800--32% on public sewer
- Estimated 2020 population of 7,300--45% on public sewer
- Proposed projects would connect about 450 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$7,000,000
- Estimated funding needs for public sewer 2006-2020--\$0

Lyon County had an estimated population of 6,780 (3,090 households) in 1999 with a projected population of 7,340 (3,445 households) in 2020. Public sewer is provided to about 32 percent of the county's residents. About 2,100 households treat wastewater on site. About 450 customers could be added to public sewer service through new line extensions in 2000-2020.

LYON COUNTY SEWER PLAN

Proposed Projects 2000-2005

System	New Customers Served	Cost (\$1,000)	Line Upgrade (\$1,000)	Treatment Expansion (\$1,000)	New Treatment (\$1,000)	Lift Stations, and other (\$1,000)	Total Costs (\$1,000)
LYON							-
Outside existing jurisdictions							-
SX21147001	65	700					700
SX21147002	37	400					400
SX21147005	20	400					400
SX21147006	20	400					400
SX21147007	57	600					600
Total	199	2,500					2,500
Eddyville							-
SX2147003	143	1,500					1,500
SX2147004	39	400		2,000			2,400
SX2147008	57	600					600
Total	239	2,500		2,000			4,500
							-
County Total	438	5,000	-	2,000			7,000

Proposed Projects 2006-2020

All sewer needs were for the period 2000-2005.

The residents of Lyon County are presently provided water by a total of three public water systems. Those systems are the Lyon County Water District, the City of Kuttawa Water System and the City of Eddyville Water Department. Only residents of Eddyville and

Kuttawa have access to public sewer services. The remaining residents rely on individual septic systems. Since the 1990 census the areas household population has grown by an estimated 33% and it has been projected that by the year 2020 expected growth will be around 46%. The areas experiencing the highest growth have tended to be the lakefront areas along the banks of Lake Barkley.

EDDYVILLE WATER DEPARTMENT

The City of Eddyville operates a sanitary sewer collection and treatment system which serves all of the residences and businesses within its' corporate limits. The collection system, established in 1960 is composed of both gravity flow and force main lines of various sizes. Once the wastewater has been collected, it is then pumped by one of the systems nine pump stations to the city's treatment facility for treatment. Eddyville's treatment facility currently has a capacity of 375,000 gallons per day and is currently operating at approximately 80% of its design capacity.

- city residential customers are charged a minimum of \$9.25 for the first 2,000 gallons of usage with the next 8,000 costing \$2.00 per 1,000 gallons and all above 10,000 being charged at \$50 per 1,000 gallons.
- county residential customers are charged a minimum of \$10.49 for the first 2,000 gallons of usage with all above being charged at \$2.00 per 1,000 gallons.
- city business customers are charged a minimum of \$11.25 for the first 2,000 gallons of usage, with the next 8,000 costing \$2.00 per 1,000 gallons, with the next 40,000 costing \$1.82 per 1,000 gallons, with the next 50,000 costing \$1.68 per 1,000 gallons with all above 100,000 being charged at \$1.20 per 1,000 gallons.
- county business customers are charged a minimum of \$12.94 for the first 2,000 gallons of usage, with the next 8,000 costing \$2.00 per 1,000 gallons, with the next 40,000 costing \$1.82 per 1,000 gallons, with the next 50,000 costing \$1.68 per 1,000 gallons with all above 100,000 being charged at \$1.20 per 1,000 gallons.

The Lyon County Health Department has identified the following project areas as having potential or existing problems with their septic systems. It has also been determined that a possible solution would be the extension of the existing system boundary to provide adequate service.

Proposed Projects

SX1147008

Area: The area down hwy 62 between the Eddyville city limits and the community of Suwanee

Number of Lots: Approximately 56 households, 1 restaurant and 1 hotel

Problem: Shallow Fragipan and small lots with High clay deposits.

SX21147003

Area: The Eddyville Shores subdivision

Number of Lots: Approximately 143 households

Problem: Small lots in a high poverty area (numerous failing systems)

SX21147004

Area: Country Lake Estates Subdivision

Number of Lots: Approximately 39 households, 1 restaurant and 1 hotel

Problem: Shallow Fragipan and small lots with High clay deposits.

ON-SITE TREATMENT SYSTEMS

Due to the growth patterns of the county (growth along the lakefront), the extension of sewer lines throughout the county maybe financially unfeasible. However, due to this rapid growth, there are some developments within areas of the county that are experiencing problems and could possibly benefit from some sort of cluster system. The areas listed below have been determined to be problem areas due to lack of properly functioning septic systems. The extension of the lines and boundaries of existing municipal systems have been determined to be the best solution for those areas that lie within an acceptable distance from existing service. For the areas that are located outside of any municipal systems' jurisdiction and (in most cases) a cluster system has been identified as a possible solution, the following would apply:

- 1.) A wetlands or lagoon would best serve any area with a daily flow of less than 7,000 gallons per day (i.e. twenty 3-bedroom homes).

Before this recommendation can be made the following must be taken into account:

- The required amount of land for this area must be available
- A soil type and depth analysis must be performed to determine if both are adequate
- The operations & maintenance issue must be addressed.

- 2.) A package treatment plant would best serve any area with a daily waste flow of more than 7,000 gallons per day (i.e. twenty 3-bedroom homes).

Before this recommendation can be made the following must be taken into account:

- This plant must be permitted by the EPA and have a surface discharge.
- This plant must also be located near a "Blue Line Stream that can handle the discharge from the facility

- The required amount of land for the facility must be available
- The operations & maintenance issue must be addressed.

Proposed Projects

SI21147005

Area: The Eddy Bay Subdivision, bordered by highway 93 & Friendship Church Road

Number of Lots: Approximately 20 households

Problem: Shallow Fragipan and small lots with High clay deposits.

SI21147006

Area: The Champion Hills Subdivision

Number of Lots: Approximately 20 households

Problem: Shallow Fragipan and small lots with High clay deposits.

SI21147007

Area: The area along highway 93 between Interstate 24 & Hwy 810

Number of Lots: Approximately 57 households

Problem: Shallow Fragipan

SI21147001

Area: The area along highway 818 between Hwy 293 & Leroy Drive

Number of Lots: Approximately 65 households

Problem: Shallow Fragipan.

SI21147002

Area: Eddyville Springs Estates Subdivision

Number of Lots: Approximately 37 households

Problem: Uneven Contours and small lots with high clay deposits.

MUHLENBERG COUNTY

Muhlenberg County Sewer Service (map)

- Estimated 1999 population of 32,000--35% on public sewer
- Estimated 2020 population of 34,100--45% on public sewer
- Proposed projects would connect about 1,250 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$15,300,000
- Estimated funding needs for public sewer 2006-2020--\$0

Muhlenberg County had an estimated population of 32,037 (12,944 households) in 1999 with a projected population of 34,112 (14,566 households) in 2020. Public sewer is provided to 35 about percent of the county's residents. About 8,400 of the county's households treat wastewater on site. About 1,250 customers could be added to public sewer service through new line extensions in 2000-2020.

MUHLENBERG COUNTY SEWER PLAN

Proposed Projects 2000-2005

System	New Customers Served	Cost (\$1,000)	Line Upgrade (\$1,000)	Treatment Expansion (\$1,000)	New Treatment (\$1,000)	Lift Stations, and other (\$1,000)	Total Costs (\$1,000)
MUHLENBERG							-
<i>Outside existing systems</i>							-
SX21177001	291	3,500					3,500
SX21177002	70	1,000					1,000
SX21177003	475	6,000					6,000
SX21177004	207	2,000					2,000
SX21177005	71	750					750
SX21177006	118	2,000					2,000
Total	1,232	15,250					15,250

Proposed Projects 2006-2020

All sewer needs were for the period 2000-2005.

Of all the Muhlenberg County residents only those residing within the city limits of Greenville, Central City and Drakesboro have access to public sewer services. The remaining residents are afforded this service via individual septic systems.

ON-SITE TREATMENT SYSTEMS

Muhlenberg County, in times past has been heavily strip mined and now contains a large portion of its land that is uninhabited because of it. Another large portion of the County is Agricultural and yet another is mostly forest land and wetlands. Due to these land uses, population growth has primarily taken place in pockets, which makes the extension of sewer throughout the county fiscally and in some cases physically unfeasible. However, there are some developments within areas of the county that are experiencing problems and could possibly benefit from some sort of cluster system. The areas listed below have been determined to be problem areas due to lack of properly functioning septic systems. The extension of the lines and boundaries of existing municipal systems have been determined to be the best solution for those areas that lie within an acceptable distance from existing service. For the areas that are located outside of any municipal systems' jurisdiction and (in most cases) a cluster system has been identified as a possible solution, the following would apply:

- 1.) A wetlands or lagoon would best serve any area with a daily flow of less than 7,000 gallons per day (i.e. twenty 3-bedroom homes).

Before this recommendation can be made the following must be taken into account:

- The required amount of land for this area must be available
- A soil type and depth analysis must be performed to determine if both are adequate
- The operations & maintenance issue must be addressed.

- 2.) A package treatment plant would best serve any area with a daily waste flow of more than 7,000 gallons per day (i.e. twenty 3-bedroom homes).

Before this recommendation can be made the following must be taken into account:

- This plant must be permitted by the EPA and have a surface discharge.
- This plant must also be located near a "Blue Line Stream that can handle the discharge from the facility
- The required amount of land for the facility must be available
- The operations & maintenance issue must be addressed.

Proposed Projects

SI21177003

Area: The Beechmont-Beechcreek area that is located 5 miles south of the City of

Drakesboro along highways 431 & 246

Number of Lots: Approximately 475 households

Problem: Shallow Fragipan and older systems were installed too deep into the fragipan and now have failed.

SI21177006

Area: The Community of Bremen, located in the northern part of the county along State Routes 81,181 and 175.

Number of Lots: Approximately 118 households

Problem: The soil in the area has a seasonal water table and a shallow fragipan and older systems were installed too deep into the fragipan and now have failed.

SI21177004

Area: The Cleaton community that is located 2 miles south of the City of Central City along highway 431 and State Route 2107

Number of Lots: Approximately 207 households

Problem: Many of the houses have no system or improper ones that are no more than containers and some even pipe into a ditch.

SI21177001

Area: The Lake Malone area in the southern end of the county from rosewood to Dunmor

Number of Lots: Approximately 291 households with an additional 53 currently under development

Problem: Soil has high sand and rock content that is close to the surface.

SI21177002

Area: The Luzerne area that is located just west of the City of Greenville along State Route 601

Number of Lots: Approximately 70 households

Problem: Very shallow fragipan of less than 30 inches, a high water table and the older systems were installed too deep into the fragipan and now are failing.

SI21177005

Area: The Community of South Carrollton that is located 2 miles from downtown Central City

Number of Lots: Approximately 71 households

Problem: Shallow Fragipan and older systems were installed too deep into the fragipan and now have failed.

TODD COUNTY

Todd County Sewer Service (map)

- Estimated 1999 population of 11,200--35% on public sewer
- Estimated 2020 population of 11,100--40% on public sewer
- Proposed projects would connect about 300 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$3,600,000
- Estimated funding needs for public sewer 2006-2020--\$000

Todd County had an estimated population of 11,165 (4,577 households) in 1999 with a projected population of 11,150 (4,855 households) in 2020. Public sewer is provided to about 35 percent of the county's residents. About 3,000 of the county's households treat wastewater on site. About 300 customers could be added to public sewer service through new line extensions in 2000-2020.

TODD COUNTY SEWER PLAN

Proposed Projects 2000-2005

System	New Customers Served	Cost (\$1,000)	Line Upgrade (\$1,000)	Treatment Expansion (\$1,000)	New Treatment (\$1,000)	Lift Stations, and other (\$1,000)	Total Costs (\$1,000)
TODD							-
Outside existing systems							-
SX21219001	30	300					300
SX21219002	30	300					300
SX21219003	50	500					500
SX21219004	120	1,500					1,500
SX21219005	75	1,000					1,000
Total	305	3,600					3,600

Proposed Projects 2006-2020

All sewer needs were for the period 2000-2005.

Todd County residents within the city limits of Elkton, Guthrie and Trenton have access to public sewer services (with the possible exceptions of residents that live in areas just outside of those municipalities). The remaining residents rely on individual septic systems. Because the activities of the nearby Fort Campbell Army Installation, the county has experienced tremendous growth in its rural areas. Due to the expansive area of Todd County and the great distances between developments, the extension of sewer lines throughout the county

may be financially unfeasible. However, due to this rapid growth, there are some developments within areas of the county that are experiencing problems and could possibly benefit from some sort of cluster system. The areas listed below have been determined to be problem areas due to lack of properly functioning septic systems. The extension of the lines and boundaries of existing municipal systems have been determined to be the best solution for those areas that lie within an acceptable distance from existing service.

ON-SITE TREATMENT SYSTEMS

For the areas that are located outside of any municipal systems' jurisdiction and (in most cases) a cluster system has been identified as a possible solution, the following would apply:

- 1.) A wetlands or lagoon would best serve any area with a daily flow of less than 7,000 gallons per day (i.e. twenty 3-bedroom homes).

Before this recommendation can be made the following must be taken into account:

- The required amount of land for this area must be available
- A soil type and depth analysis must be performed to determine if both are adequate
- The operations & maintenance issue must be addressed.

- 2.) A package treatment plant would best serve any area with a daily waste flow of more than 7,000 gallons per day (i.e. twenty 3-bedroom homes).

Before this recommendation can be made the following must be taken into account:

- This plant must be permitted by the EPA and have a surface discharge.
- This plant must also be located near a "Blue Line Stream that can handle the discharge from the facility
- The required amount of land for the facility must be available
- The operations & maintenance issue must be addressed.

Proposed Projects

SI21219004

Area: Lake Malone Area

Number of Lots: 120 homes

Problem: Very little topsoil with heavy rock content

SI21219001

Area: Area along Highway 181

Number of Lots: approximately 30 homes

Problem: Shallow fragipan and bad soil content

SI21219002

Area: Area along Highway 68/80 West of City Limits of Elkton

Number of Lots: approximately 30 homes and various subdivisions being planned

Problem: Shallow fragipan and bad soil content

SI21219003

Area: Area along Highway 68/80 East of City Limits of Elkton

Number of Lots: approximately 50 homes

Problem: Shallow fragipan and bad soil content

SI21219005

Area: Hodgenville Area

Number of Lots: 75 homes

Problem: Very little topsoil with heavy rock content

TRIGG COUNTY

Trigg County Sewer Service (map)

- Estimated 1999 population of 12,600--25% on public sewer
- Estimated 2020 population of 16,000--65% on public sewer
- Proposed projects would connect about 2,350 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$25,000,000
- Estimated funding needs for public sewer 2006-2020--\$000

Trigg County had an estimated population of 12,552 (5,549 households) in 1997 with a projected population of 15,985 (7,518 households) in 2020. Public sewer is provided to about 25 percent of the county's residents. About 4,200 of the county's households treat wastewater on site. About 2,350 customers could be added to public sewer service through new line extensions in 2000-2020.

TRIGG COUNTY SEWER PLAN

Proposed Projects 2000-2005

System	New Customers Served	Cost (\$1,000)	Line Upgrade (\$1,000)	Treatment Expansion (\$1,000)	New Treatment (\$1,000)	Lift Stations, and other (\$1,000)	Total Costs (\$1,000)
TRIGG							-
Barkley Lake Area*							-
SX21221001	75	803					803
SX21221002	120	1,284					1,284
SX21221003	50	525					525
SX21221004	375	4,013					4,013
SX21221005	68	728					728
SX21221006	8	86					86
SX21221007	127	1,359					1,359
SX21221008	135	1,445					1,445
SX21221010	86	920					920
SX21221012	45	482					482
SX21221013	55	589					589
SX21221014	256	2,750					2,750
SX21221016	85	910					910
SX21221018	150	1,605					1,605
SX21221020	39	417					417
SX21221021	41	439					439
SX21221023	149	1,594					1,594
SX21221026	35	375					375
SX21221027	32	342					342
SX21221028	44	471					471
SX21221029	213	2,279					2,279
SX21221030	137	1,466					1,466
SX21221031	11	118					118

SEWER SERVICE AREAS

TRIGG COUNTY

Kentucky

Prepared By:
Water Resource Development Commission

Department for Local Government
 1024 Capital Center Drive, Suite 340
 Frankfort, Kentucky 40601-8204
 502-573-2382 -- 502-573-2939 fax
<http://dlgnt1.state.ky.us/wrdc/>




Bob Arnold, Chairman
 Lawrence Wetherby, Executive Director

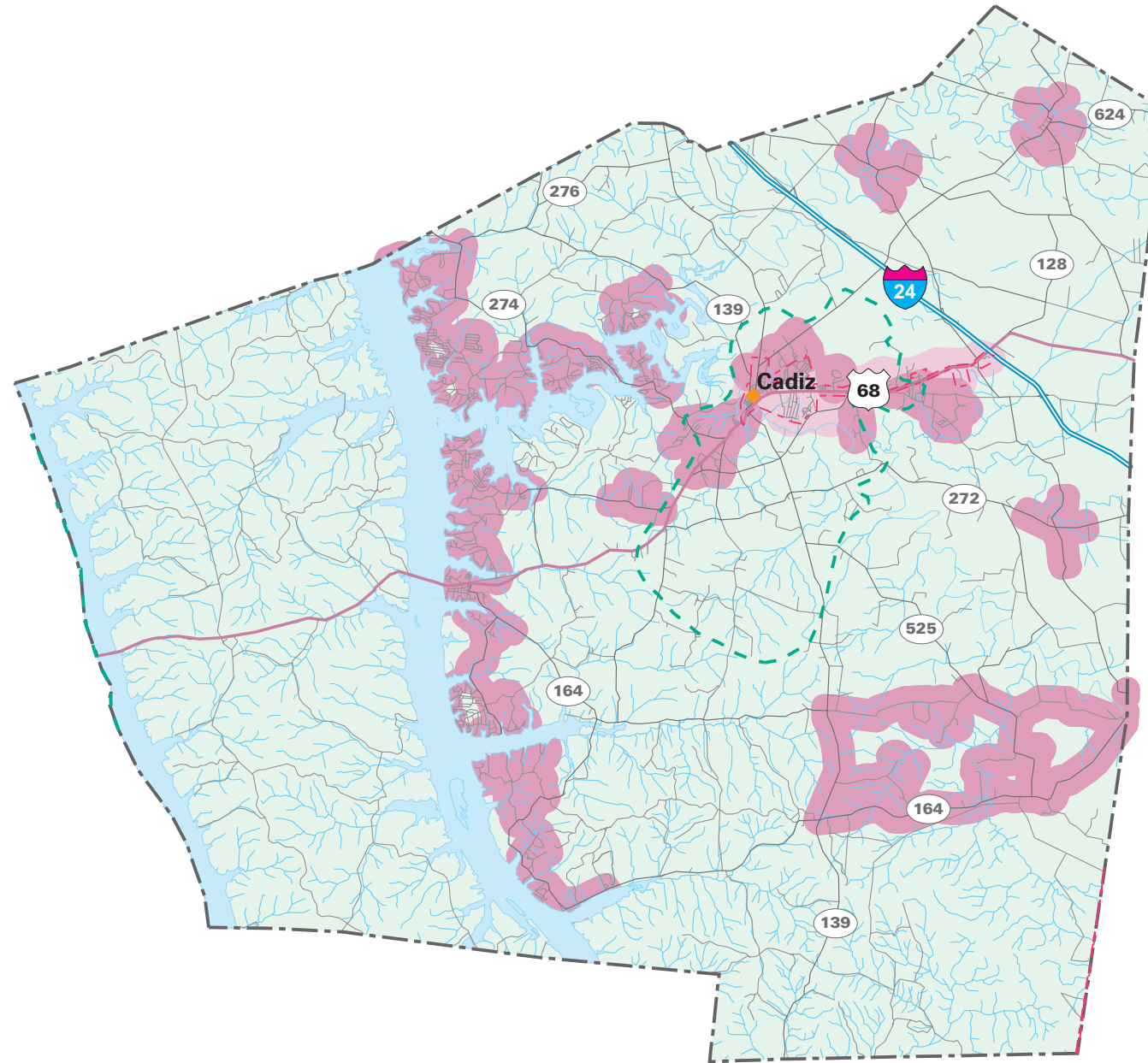
Final GIS & Cartographic Operations By:
 Kent Anness & Kim Anness

Data Collection & GIS Input By:
 Kentucky Area Development Districts



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

- | | | |
|---|---|---------------|
|  |  | CITY OF CADIZ |
| EXISTING SERVICE AREA | PROPOSED SERVICE AREA | |

Total	2,336	25,000					25,000
*Costs under lines includes							
an allowance for a treatment							
plant.							
.							

Proposed Projects 2006-2020

All sewer needs were for the period 2000-2005.

The residents of Trigg County are presently provided water by two systems: the Barkley Lake Water District and the City of Cadiz Waterworks. Only the Cadiz Waterworks, which services the resident of the city of Cadiz, has a sewer component to it. The remaining residents of Trigg County rely on individual septic systems. Over the past decade this area has experienced tremendous growth due to the development of its Lakefront areas. Since the 1990 census the areas household population has grown by an estimated 26% and it has been projected that by the year 2020 expected growth will be around 45%. The areas experiencing the highest growth have tended to be the lakefront areas along the banks of Lake Barkley.

ON-SITE TREATMENT SYSTEMS

Due to the growth patterns of the county (growth along the lakefront), the extension of sewer lines throughout the county maybe financially unfeasible. However, due to this rapid growth, there are some developments within areas of the county that are experiencing problems and could possibly benefit from some sort of cluster system. The areas listed below have been determined to be problem areas due to lack of properly functioning septic systems. The extension of the lines and boundaries of existing municipal systems have been determined to be the best solution for those areas that lie within an acceptable distance from existing service. For the areas that are located outside of any municipal systems' jurisdiction and (in most cases) a cluster system has been identified as a possible solution, the following would apply:

- 1.) A wetlands or lagoon would best serve any area with a daily flow of less than 7,000 gallons per day (i.e. twenty 3-bedroom homes).

Before this recommendation can be made the following must be taken into account:

- The required amount of land for this area must be available
- A soil type and depth analysis must be performed to determine if both are adequate
- The operations & maintenance issue must be addressed.

- 2.) A package treatment plant would best serve any area with a daily waste flow of more than 7,000 gallons per day (i.e. twenty 3-bedroom homes).

Before this recommendation can be made the following must be taken into account:

- This plant must be permitted by the EPA and have a surface discharge.
- This plant must also be located near a “Blue Line Stream that can handle the discharge from the facility
- The required amount of land for the facility must be available
- The operations & maintenance issue must be addressed.

Proposed Projects

SI21221013

Area: Gray’s Hillview and Prizer Point Area

Number of Lots: 55 homes

Problem: Small lots with very steep elevations

SI21221012

Area: Gray’s Acres and Carriage Cove Area

Number of Lots: 45 homes

Problem: Small lots with very steep elevations

SI21221014

Area: Rockcastle Shores

Number of Lots: 256 homes and numerous vacant lots for development

Problem: Small lots with older homes that don’t meet today’s regulations of size or depth

SI21221016

Area: Parkview Shores, Enchanted Shores and Everlasting Springs Area

Number of Lots: 85 homes

Problem: Small lots with very poor soil content

SI21221010

Area: Little River Estates

Number of Lots: 86 homes

Problems: Extremely small lots limiting repair options

SI21221008

Area: The Hall Road Area

Number of Lots: 135 homes

Problems: Extremely small lots limiting repair options, poor soil content and drainage problems

SI21221007

Area: The Allen & Whitecrest Subdivisions, Woodlawn Estates an area along 68 west of the city of Cadiz

Number of Lots: 127 homes

Problems: Extremely small lots with poor soil (high clay content)

SI21221006

Area: Blue Ridge Estates

Number of Lots: 8 homes

Problems: Poor drainage

SI21221005

Area: Countryside Estates

Number of Lots: 68 total lots (17 homes)

Problems: Poor drainage, shallow fragipan

SI21221018

Area: Blue Springs Estates

Number of Lots: 150 homes

Problems: Large homes located on small lots limiting repair options, most of which will not comply with today's regulatory requirements

SI21221020

Area: Canton Shores

Number of Lots: 39 homes

Problems: Extremely small lots with poor soil (high clay content)

SI21221021

Area: LBL Subdivision

Number of Lots: 41 homes and numerous vacant lots

Problems: The upland lots have poorly draining soil with high clay content. The lots are also extremely small, limiting repair options.

SI21221023

Area: Cumberland Shores and Terrapin Creek Area

Number of Lots: 149 homes and numerous vacant lots

Problems: The lots are extremely small limiting repair options.

SI21221001

Area: the Calendonia Community

Number of Lots: 75 homes

Problems: Densely populated area.

SI21221002

Area: the Cerulean Community

Number of Lots: 120 homes

Problems: Densely populated area.

SI21221003

Area: the Wallonia Community

Number of Lots: 50 homes

Problems: Densely populated area.

SI21221004

Area: the Area adjacent to the Fort Campbell Military Installation

Number of Lots: 375 (or more) homes

Problems: Densely populated area with high expectation of future growth.

SI212210026

Area: the Linton Community

Number of Lots: 35 homes

Problems: Densely populated area.

SI21221027

Area: an area along Rhett Blvd.

Number of Lots: 32 homes

Problem: Very poor soil content

SI21221028

Area: an area that includes Glenwood Estates and houses along Glenwood Mill Road

Number of Lots: 44 homes

Problem: Very poor soil content

SI21221029

Area: an area which includes Dogwood Estate, Kings Chapel Estates, Valleyview

Subdivision, Kingspoint Subdivision along with houses along Hopkinsville & Kings Chapel Roads

Number of Lots: 213 homes

Problem: Very poor soil content (high rock content)

SI21221030

Area: an area along Noel Drive, Joey Drive, Westend Street & Cerulean Road

Number of Lots: 137 homes

Problem: Very poor soil content (high rock content)

SI21221031

Area: an area along Will Jackson Road

Number of Lots: 11 homes

Problem: Very poor soil content

Other areas of projected growth within the county:

SI21221015

Area: Woodfield Estates

SI21221011

Area: Woodland Acres I & II

SI21221009

Area: Siloam Point Subdivision (phase I & II)

SI21221017

Area: Rimcrest, Shawnee Hills and Sutherland Winds

SI21221019

Area: Canton Heights I, II & III

SI21221022

Area: Waterford I, II, III & IV

SI21221024

Area: Cumberland Hills Shores, Fisherman's Paradise & Donaldson Bay Estates

SI21221025

Area: Howdy Doody Drive