### Strategic Water Resources Development Plan

Summary of Wastewater Treatment Systems
Gateway Area Development District

Water Resources Development Commission

March, 2000

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#### GATEWAY AREA DEVELOPMENT DISTRICT

Main and Slate Streets P.O. Box 1070 Owingsville, KY 40360 (606) 674-6355

#### ADD SEWER SUMMARY

#### ADD Sewer Service (map)

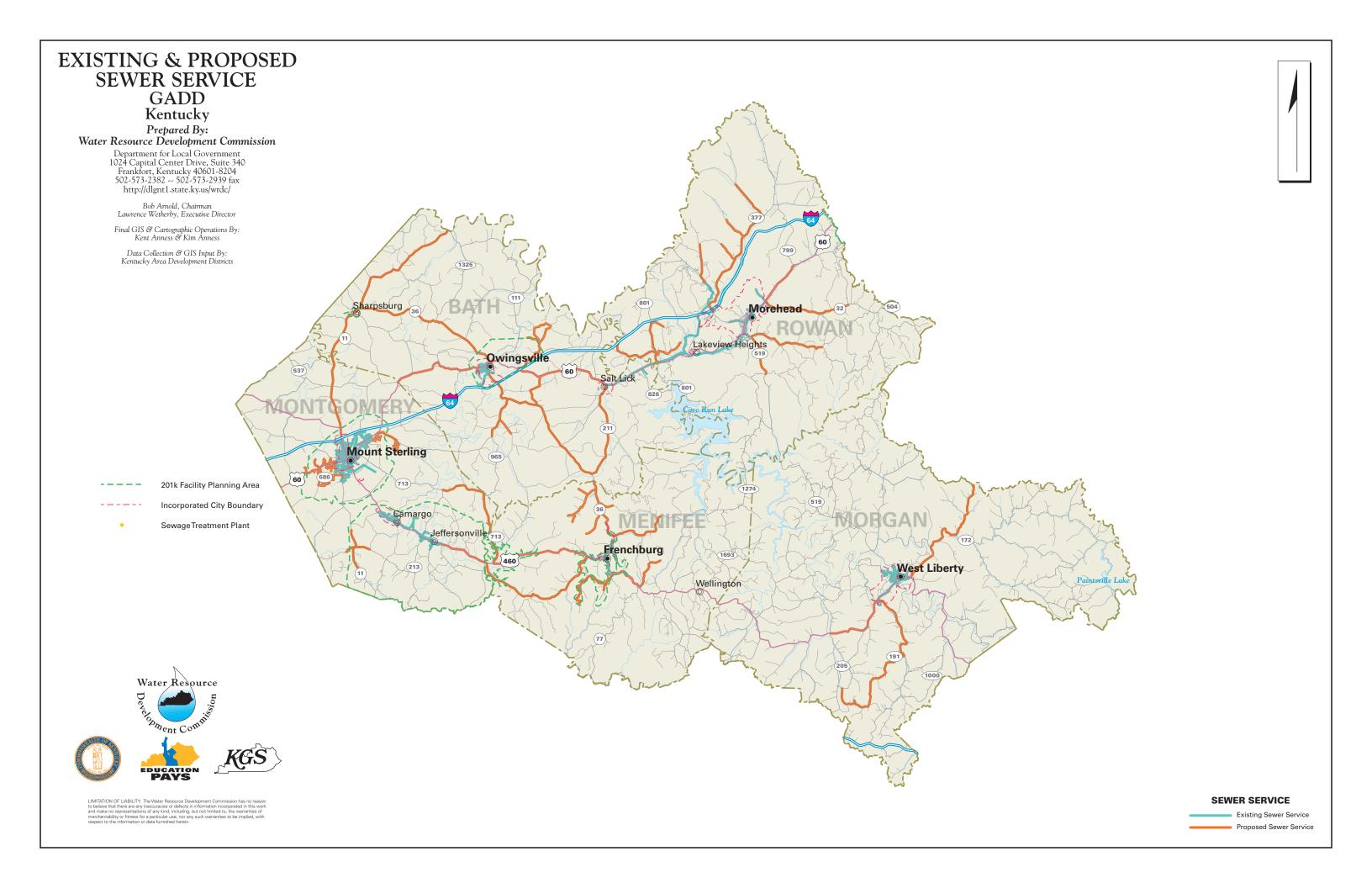
- Estimated 1999 population of 67,200--36% on public sewer
- Estimated 2020 population of 74,300--54% on public sewer
- Proposed projects would connect about 4,750 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$29,000,000
- Estimated funding needs for public sewer 2006-2020--\$54,100,000

Gateway Area Development District had an estimated population of 67,238 (27,313 households) in 1999 with a projected population of 74,286 (32,747 households) in 2020. Public sewer systems serve 24,000 area residents, or 36 percent of the population. Proposed sewer line extensions for the period 2000-2020 would provide service to an additional 4,750 households. About 43,000 people in the region currently rely on onsite treatment systems.

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

County	1999 Pop	On Public	2020 Pop	On Public
Bath	10,300	2,100 (20%)	10,900	4,900 (45%)
Menifee	5,600	560 (10%)	6,650	3,000 (45%)
Montgomery	21,100	11,600 (55%)	23,600	16,500 (70%)
Morgan	11,900	1,550 (13%)	12,600	2,500 (20%)
Rowan	18,300	8,200 (45%)	20,600	13,400 (65%)
Region	67,200	4,000 (36%)	74,300	40,300 (54%)

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



#### Proposed Projects 2000-2005

System	New Customers Served	Cost (\$1000)	Line Upgrade (\$1000)	Treatment Expansion (\$1000)	New Treatment (\$1000)	Lift Stations, and other (\$1000)	Total Costs (\$1000)
BATH							
Owensville	285	5,000	,				5,000
MONTGOMERY							-
Mt. Sterling	605	7,000	,	2,000	-		9,000
Sanitation District #2	133	2,300	,	,			2,300
County Total	738	9,300	,	2,000			11,300
MENIFEE							-
Frenchburg	107	3,000	,	,			3,000
ROWAN							-
Morehead	1,017	7,700	,				7,700
MORGAN							-
West Liberty	120	2,000	,				2,000
Gateway ADD Total	2,267	27,000		2,000		-	29,000

#### 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)
BATH							,
Owensville	461	9,400	,	2,000	,		11,400
Sharpsburg	355	7,500	,	1,000	,		8,500
County total	816	16,900		3,000			19,900
MONTGOMERY							
Mt. Sterling	281	3,600	,	-	500		4,100
Sanitation District #2	143	1,400	,	-	,		1,400
County Total	424	5,000	,		500		5,500
MENIFEE							
Frenchburg	650	15,600	,		,		15,600
ROWAN							-
Morehead	397	7,000	,				7,000
MORGAN							-
West Liberty	157	6,100					6,100
Gateway ADD Total	2,484	50,600	•	3,000	500		54,100

#### **ON-SITE TREATMENT SYSTEMS**

Existing sewer lines within the Gateway region tend to be located only within the city limits. Much of the land within the region is described by the local environmentalist as having a fragipan (hard pan) in conjunction with a perched water table. This is further described as an area with slow permeability due to the extremely fine silt loam to silty clay loam soil texture. When traditional septic systems are installed in this type of soil the sewage effluent comes to the surface due to the high water. Straight-line pipes and failing septic systems plague the region. The majority of the streams tested for fecal coliform resulted in levels unsafe for skin contact. It is imperative that public sewer lines or non-traditional sewer systems be extended throughout the counties.

#### **BATH COUNTY**

#### Bath County Sewer Service (map)

- Estimated 1999 population of 10,300--20% on public sewer
- Estimated 2020 population of 10,900--45% on public sewer
- Proposed projects would connect about 1,100 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$5,000,000
- Estimated funding needs for public sewer 2006-2020--\$19,900,000

Bath County had an estimated population of 10,347 (4,307 households) in 1999 with a projected population of 10,853 (4,872 households) in 2020. Public sewer is provided to about 20 percent of the county's residents. About 3,400 households in the county use on-site wastewater treatment. About 1,100 customers could be added to public sewer service through new line extensions in 2000-2020.

#### BATH 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)
BATH							-
Owensville							-
SW21011001	140	2100					2,100
SW21011007	145	2,900					2,900
Total	285	5,000					5,000

### SEWER SERVICE AREAS **BATH 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 1325 Data Collection & GIS Input By: Kentucky Area Development Districts Water Resource 111 SHARPSBURG (36) Owingsville SALT LICK - - - 201k Facility Planning Area - - - - - Incorporated City Boundary 211 Sewage Treatment Plant LIMITATION OF LIABILITY: The Water Resource Development Commission has no reasor to believe that there are any inaccuracies or defects in information incorporated in the word 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. 965 **SEWER SERVICE STATUS BY OWNER** EXISTING PROPOSED SERVICE AREA SERVICE AREA UNKNOWN MOREHEAD UTILITY PLANT BOARD CITY OF SHARPSBURG CITY OF OWINGSVILLE

#### 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)
BATH							,
Owensville							,
SW21011005	80	2,700					2,700
SW21011006	68	2,000		2,000			4,000
SW21011007							1
SW21011008	122	1,700					1,700
SW21011009	52	800					800
SW21011010	139	2,200					2,200
Total	461	9,400		2,000			11,400
Sharpsburg							,
SW21011002	160	3,500					3,500
SW21011003	158	2,800		1,000			3,800
SW21011004	37	1,200	•		•		1,200
Total	355	7,500		1,000			8,500
County total	816	16,900		3,000	•		19,900

#### Project Descriptions

#### SW21011001

Extends traditional public sewer from the City of Owingsville Treatment Plant down Highway 36 to Highway 965 in Preston. This is an immediate project, there area 140 households in the project area. A package treatment plant would be constructed on Mill Creek in the Preston area.

#### SW21011002

Public sewer would be extended from highway 36 in Owingsville to highway 11 in Sharpsburg. There are 160 homes. Sewage would be treated at the Sharpsburg plant, which would require an upgrade.

#### SW21011003

Public sewer extended from the city of Sharpsburg to the Fleming county line. Area contains 158 homes, sewage to be treated by the city of Sharpsburg, (requires upgrade).

#### SW21011004

Public sewer extended from City of Sharpsburg to the Montgomery county line contains 37 homes. Sewage would be treated by City of Sharpsburg (requires upgrade).

#### SW21011005

Extends public sewer from Highway 965 on Highway 36 to the Menifee County line. There are 80 homes along this road. Sewage would be transferred down Highway 211 to Salt Lick where traditional sewer is in place and treated by the Morehead Utility Plant Board.

#### SW21011006

Highway 60 from Owingsville to Montgomery County line contains 68 homes. Sewage to be treated by the City of Owingsville, requires upgrade.

#### SW21011007

The Peasticks area of the county is heavily populated with 145 homes in less than 8-mile section. Sewage would be carried along Highway 36 to Salt Lick for treatment by Morehead

Utility Plant Board.

#### SW21011008

Highway 60 from Owingsville to Salt Lick contains 122 homes. Salt Lick has existing sewer lines and sewage treated by Morehead Utility Plant Board.

#### SW21011009

Highway 965 between Highway 60 and Highway 36 contains 52 homes in less than 1 miles. Sewage would blow back to Highway 60 to Salt Lick.

#### SW21011010

Highway 211 from Salt Lick to Highway 36 contains 139 homes. Sewage would be transported to Morehead Utility Plant Board via Salt Lick sewer.

#### **MENIFEE COUNTY**

#### Menifee County Sewer Service (map)

- Estimated 1999 population of 5,600--10% on public sewer
- Estimated 2020 population of 6,650--40% on public sewer
- Proposed projects would connect about 750 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$3,000,000
- Estimated funding needs for public sewer 2006-2020--\$15,600,000

Menifee County had an estimated population of 5,631 (2,252 households) in 1999 with a projected population of 6,631 (3,001 households) in 2020. Public sewer is provided to about 10 percent of the county's residents. About 2,000 households in the county use on-site wastewater treatment. About 750 customers could be added to public sewer service through new line extensions in 2000-2020.

#### MENIFEE 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)
MENIFEE							-
Frenchburg							-
SW21165002	55	2,000					2,000
SW21165003	52	1,000			200		1,200
Total	107	3,000					3,000

#### 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)
MENIFEE							-
Frenchburg							-
SW21165001	145	3,700					3,700
SW21165004	106	4,200					4,200
SW21165005	113	2,400					2,400
SW21165006	144	2,900					2,900
SW21165007	142	2,400					2,400
Total	650	15,600					15,600

#### Project Descriptions

#### SW21165001

Highway 36 from the Bath county line through Sudith and several side roads contains 145 homes. The area is extremely hilly and a force main or lift station would be required. Sewage would be treated by the City of Frenchburg.

## SEWER SERVICE AREAS MENIFEE COUNTY Kentucky

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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







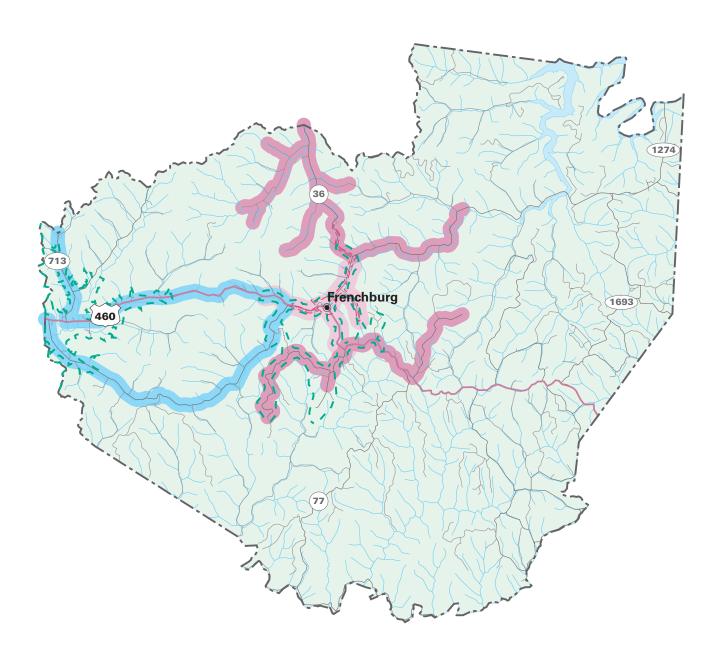


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- - - 201k Facility Planning Area

---- Incorporated City Boundary

Sewage Treatment Plant



#### **SEWER SERVICE STATUS BY OWNER**



#### SW21165002

Highway 1274 toward Cave Run Lake has 55 homes. This is extremely rocky, however has a huge potential to contaminate the drinking water source.

#### SW21165003

Highway 713 at Means where a package treatment plant is currently located contains 52 homes, which could be added on to the existing plant.

#### SW21165004

Highway 713 from Means back through Fagen and Indian Creek is heavily populated in sections. The terrain is extremely rocky and rugged. Treatment by the city of Frenchburg.

#### SW21165005

Highway 460 to Mariba lies next to an existing sewer main going back to Frenchburg. This is a force main built to serve the nursing home.

#### SW21165006

Highway 460 from Frenchburg to Means is extremely rocky terrain and would require a lift station to get back up the hill to Frenchburg for treatment.

#### SW21165007

Locally known as Tar Ridge and Amos ridge, this area is also located adjacent to the existing force main leading to Frenchburg. There are 142 homes in the project area.

#### **MONTGOMERY COUNTY**

#### Montgomery County Sewer Service (map)

- Estimated 1999 population of 21,100--55% on public sewer
- Estimated 2020 population of 23,600--70% on public sewer
- Proposed projects would connect about 1,150 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$11,300,000
- Estimated funding needs for public sewer 2006-2020--\$5,500,000

Montgomery County had an estimated population of 21,062 (8,384 households) in 1999 with a projected population of 23,618 (10,118 households) in 2020. Public sewer is provided to about 55 percent of the county's residents. About 3,800 households in the county use onsite wastewater treatment. About 1,150 customers could be added to public sewer service through new line extensions in 2000-2020.

#### MONTGOMERY 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)
MONTGOMERY							-
Mt. Sterling							-
SW21173003	75	2,000		2,000			4,000
SW21173004	530	5,000					5,000
Total	605	7,000		2,000			9,000
Sanitation District #2 SW21173002	133	2,300					2,300
County Total	738	9,300	1	2,000			11,300

#### Proposed Projects 2006-2020

System	New Customers Served	Cost (\$1000)	Line Upgrade (\$1000)	Treatment Expansion (\$1000)	New Treatment (\$1000)	Lift Stations, and other (\$1000)	Total Costs (\$1000)
MONTGOMERY							-
Mt. Sterling							-
SW21173005	108	1,600			500		2,100
SW21173006	173	2,000					2,000
Total	281	3,600			500		4,100
Sanitation District #2							
SW21173001	143	1,400					1,400
County Total	424	5,000			500		5,500

#### Project Descriptions

#### SW21173001

From Jeffersonville to the Menifee County line. These 143 homes could be served by either

#### SEWER SERVICE AREAS MONTGOMERY COUNTY Kentucky

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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/

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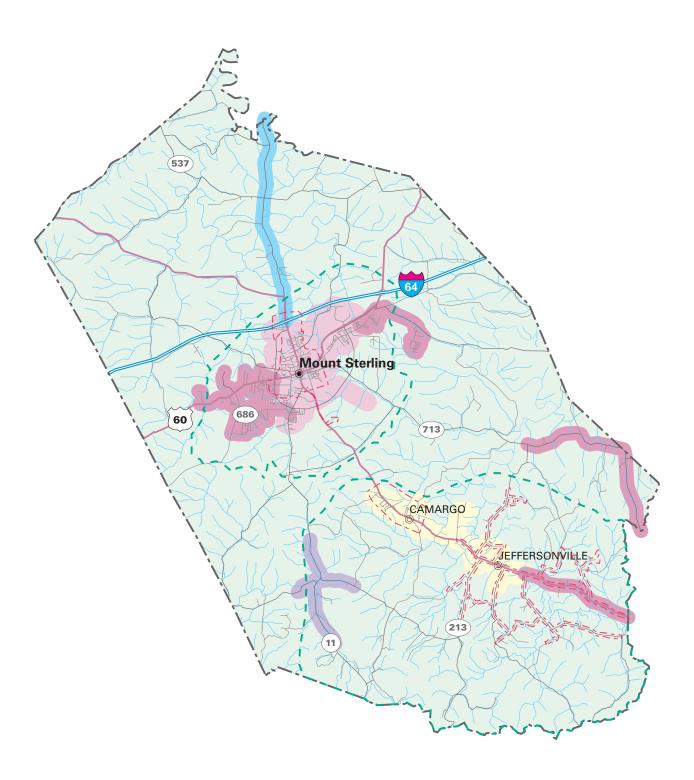


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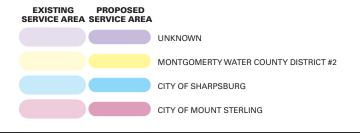
- - - 201k Facility Planning Area

---- Incorporated City Boundary

Sewage Treatment Plant



#### SEWER SERVICE STATUS BY OWNER



the Means package plant or Montgomery county Sanitation District #2.

#### SW21173002

Highway 713 from Hope to Spencer contains 133 homes and could be served by the Means package plant.

#### SW21173003

Highway 60 at Ewington could add on 75 homes in the Howards Mill section of the county. Easy access to the Mt. Sterling sewer system.

#### SW21173004

Reid Village area contains over 500 homes in a relatively small area. This is the most feasible immediate project.

#### SW21173005

The Levee Road project contains 108 homes and would require a package plant to serve the area.

#### SW21173006

Highway 11 from Mt. Sterling to the Fleming County line is seeing a huge amount of growth. There are currently 173 homes in the area with plans for many more.

#### **MORGAN COUNTY**

#### Morgan County Sewer Service (map)

- Estimated 1999 population of 11,900--13% on public sewer
- Estimated 2020 population of 12,600--20% on public sewer
- Proposed projects would connect about 280 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$2,000,000
- Estimated funding needs for public sewer 2006-2020--\$6,100,000

Morgan County had an estimated population of 11,888 (4,560 households) in 1999 with a projected population of 12,561 (5,176 households) in 2020. Public sewer is provided to about 13 percent of the county's residents. About 4,000 households in the county use on-site wastewater treatment. About 280 customers could be added to public sewer service through new line extensions in 2000-2020.

#### MORGAN 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)
MORGAN							-
West Liberty SW21175003	120	2,000					2,000

#### 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)
MORGAN			(φτοοο)	(φτοοο)	(ψ1000)	(ψ1000)	(ψ1000)
West Liberty							
SW21175001	72	3,500					3,500
SW21175004	85	2,600					2,600
Total	157	6,100					6,100

## SEWER SERVICE AREAS MORGAN COUNTY Kentucky

#### Prepared By: Water Resource Development Commission

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- - - 201k Facility Planning Area

---- Incorporated City Boundary

Sewage Treatment Plant



SEWER SERVICE STATUS BY OWNER



#### Project Descriptions

#### SW21165001

Out Highway 172 from West Liberty there are 72 homes. Sewage would be provided by the city of West Liberty.

#### SW21165002

Project is included as existing, funded by EPA appropriation.

#### SW21165003

Out Highway 191 to Malone, there are 165 homes. Waste would be treated by the City of West Liberty.

#### SW21165004

Phase II of above project would extend out Highway 844 and pick up 106 additional homes. Sewage to city of West Liberty.

#### **ROWAN COUNTY**

#### Rowan County Sewer Service (map)

- Estimated 1999 population of 18,300--45% on public sewer
- Estimated 2020 population of 20,600--65% on public sewer
- Proposed projects would connect about 1,450 new households to public sewer during 2000-2020
- Estimated funding needs for public sewer 2000-2005--\$7,700,000
- Estimated funding needs for public sewer 2006-2020--\$7,000,000

Rowan County had an estimated population of 18,309 (7,810 households) in 1999 with a projected population of 20,623 (9,580 households) in 2020. Public sewer is provided to about 45 percent of the county's residents. About 4,300 households in the county use on-site wastewater treatment. About 1,450 customers could be added to public sewer service through new line extensions in 2000-2020.

#### **ROWAN 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)
ROWAN							-
Morehead							-
SW21205001	579	2,700					2,700
SW21205002	269	1,000					1,000
SW21205004	ind+106	3,000					3,000
SW21205005	63	1,000					1,000
Total	1,017+	7,700					7,700

#### 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)
ROWAN							-
Morehead .							-
SW21205003	165	2,000					2,000
SW21205006	232	5,000					5,000
Total	397	7,000					7,000

#### Project Descriptions

#### SW21205001

Extension from existing Clearfield sewer would add 579 homes. Sewage treated by the Morehead Utility Plant Board. Very feasible.

# SEWER SERVICE AREAS ROWAN COUNTY Kentucky

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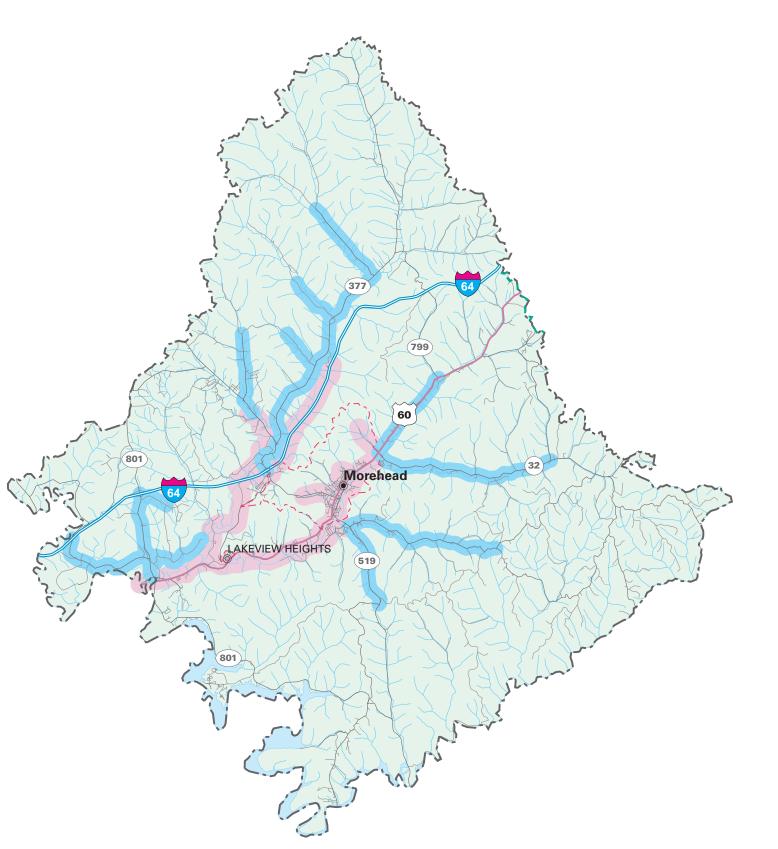


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- - - 201k Facility Planning Area

---- Incorporated City Boundary

Sewage Treatment Plant







#### SW21205002

Out Highway 60 past Rodburn has 269 homes, sewage treated by Morehead Utility Plant Board.

#### SW21205003

Extension out Highway 32 would add 165 homes to Morehead Utility Plant Board

#### SW21205004

Highway 801 near existing line by Industrial Park would add 106 homes.

#### SW21205005

Highway 765 going to Smile would add 63 homes in 2 miles. Existing line near intersection of Highway 32.

#### SW21205006

Out Highway 377 to Cranston and several small side roads would add 232 homes. Cost prohibitive.