

# Water-Resource Development: A Strategic Plan

*Summary of Water Systems*

*Cumberland Valley Area  
Development District*

*Water Resources Development Commission*

*October, 1999*

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MAP LISTING

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# ***Cumberland Valley Area Development District***

342 Old Whitley Road  
P.O. Box 1740  
London, KY 40743-1740  
(606) 864-7391

## **REGIONAL OVERVIEW**

### **(Cumberland Valley ADD Existing & Proposed Water Lines Map)**

- Estimated 1999 population of 233,000--71% on public water
- Estimated 2020 population of 251,000--88% on public water
- 2,920 miles of water lines, with plans for 2,450 additional miles
- Estimated funding needs for public water 2000-2005--\$52,900,000
- Estimated funding needs for public water 2006-2020--\$226,000,000

Cumberland Valley Area Development District had an estimated population of 233,006 (91,256 households) in 1999 with a projected population of 251,310 (106,662 households) in 2020. There are 2,920 miles of water lines in the region serving 166,000 people, or 71% of the region's population. 2,450 miles of proposed water line extensions for the period 2000-2020 would provide service to an additional 18,600 households. About 67,000 people in the region rely on private domestic water systems: 57,300 on wells, and 9,800 on hauled water and other sources.

Estimated populations and public water service for the eight counties in the region is given below:

<b>County</b>	<b>1999 Pop</b>	<b>On Public</b>	<b>2020 Pop</b>	<b>On Public</b>
Bell	29,000	21,200 (73%)	26,600	21,300 (80%)
Clay	22,400	14,600 (65%)	23,100	20,100 (87%)
Harlan	34,900	18,100 (52%)	33,200	25,900 (78%)
Jackson	13,000	11,000 (85%)	14,500	14,500 (100%)
Knox	31,400	20,400 (65%)	34,800	28,900 (83%)
Laurel	51,500	46,400 (90%)	64,600	60,100 (93%)
Rockcastle	15,900	13,000 (82%)	17,100	17,100 (100%)
Whitley	34,900	20,900 (60%)	37,500	32,600 (87%)
<i>Region</i>	233,000	166,000 (71%)	251,000	220,000 (88%)



# EXISTING & PROPOSED WATER LINES CVADD 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/wrde/>

Bob Arnold, Chairman  
Lawrence Wetherby, Executive Director

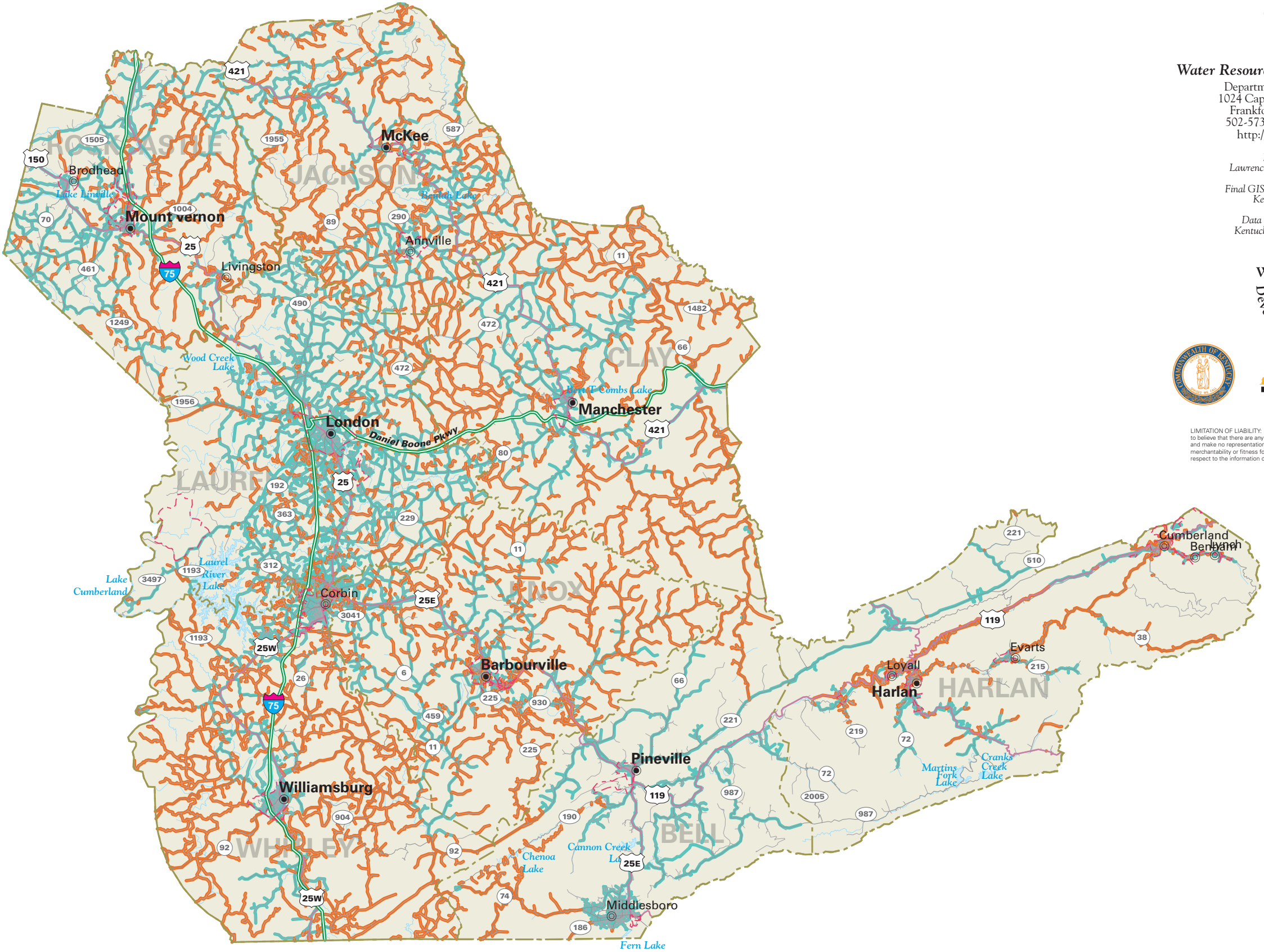
Final GIS & Cartographic Operations By:  
Kent Anness & Kim Prough

Data Collection & GIS Input By:  
Kentucky Area Development Districts



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**WATER LINES**  
Existing Water Lines  
Proposed Water Lines



67 public water systems serve the region: 53 community systems--16 municipal, 18 water districts, 5 water associations, 13 private, 1 state, and 14 non-community systems. There are 16 small (501 to 3,300 people served) community systems and 14 very small systems (less than 500 people served).

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

***Estimated Costs - Proposed Projects, 2000-2005***

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/ Pumps	Total
	Miles	Number	Cost in \$1000	in \$1000	in \$1000	in \$1000	in \$1000	in \$1000
<b>BELL</b>								-
Pineville	29	96	1,500			4,000		5,500
U.S. Utilities								-
<b>Total</b>	<b>29</b>	<b>96</b>	<b>1,500</b>			<b>4,000</b>		<b>5,500</b>
								-
<b>CLAY</b>								-
Manchester	192	1032	10,000		20,000		2,300	32,300
Dewitt	16	200	1,345					1,345
East Laurel W/D	23	121	1,500				500	2,000
<b>Total</b>	<b>231</b>	<b>1353</b>	<b>12,845</b>		<b>20,000</b>		<b>2,800</b>	<b>35,645</b>
								-
<b>HARLAN</b>								-
Black Mtn. W D	36	490	1,900				1,600	3,500
<b>Total</b>	<b>36</b>	<b>490</b>	<b>1,900</b>				<b>1,600</b>	<b>3,500</b>
								-
<b>JACKSON</b>								-
McKee	5	22	250				150	400
<b>Total</b>	<b>5</b>	<b>22</b>	<b>250</b>				<b>150</b>	<b>400</b>
								-
<b>KNOX</b>	No Short Term Projects							-
								-
								-
<b>LAUREL</b>								-
Wood Creek	27	130	1,350				500	1,850
East Laurel W/D				686				686
West Laurel W/A	12	111	600				1,100	1,700
Laurel Co. W/D #2	2	20	60			3,570		3,630
London Utility Commission								-
<b>Total</b>	<b>41</b>	<b>261</b>	<b>2,010</b>	<b>686</b>		<b>3,570</b>	<b>1,600</b>	<b>7,866</b>
								-
<b>ROCKCASTLE</b>		No short term projects						-
<b>WHITLEY</b>		No short term projects						-
								-
<b>CUMBERLAND VALLEY ADD TOTAL</b>	<b>342</b>	<b>2,222</b>	<b>18,505</b>	<b>686</b>	<b>20,000</b>	<b>7,570</b>	<b>6,150</b>	<b>52,911</b>

**Estimated Costs - Proposed Projects, 2006-2020**

COUNTY/System		New Customers	Cost	Rehab	Source	Treatment	Tanks/ Pumps	Total
	Miles	Number	in \$1000	in \$1000	in \$1000	in \$1000	in \$1000	in \$1000
<b>BELL</b>								-
U.S. Utilities	2.2	12	190					190
Pineville Utilities	77	695	3,850	6,000			1,040	10,890
<b>Total</b>	<b>79.2</b>	<b>707</b>	<b>4,040</b>	<b>6,000</b>			<b>1,040</b>	<b>11,080</b>
								-
<b>CLAY</b>								-
N. Manchester Water Ass.	80	451	5,441				1,450	6,891
Manchester Water Works	34.7	200	1,850		2,000	2,000	900	6,750
Hyden/Leslie W/D	6	29	300					300
<b>Total</b>	<b>120.7</b>	<b>680</b>	<b>7,591</b>		<b>2,000</b>	<b>2,000</b>	<b>2,350</b>	<b>13,941</b>
								-
<b>HARLAN</b>								-
Black Mtn. W/D	36	490	1,900				1,600	3,500
Cawood W/D	150	635	7,500				3,000	10,500
Cumberland W/D	27	980	1,500				600	2,100
Everts	2	90	100					100
Green Hills	7	82	400				300	700
Wallins Creek Water	9	750	500				300	800
Harlan	28	130	1,500		20,000	10,000	600	32,100
<b>Total</b>	<b>259</b>	<b>3157</b>	<b>13,400</b>		<b>20,000</b>	<b>10,000</b>	<b>6,400</b>	<b>49,800</b>
								-
<b>JACKSON</b>								-
Jackson Co. W/D	334	1852	17,000		2,000	2,000	12,000	33,000
McKee								-
<b>Total</b>	<b>334</b>	<b>1852</b>	<b>17,000</b>		<b>2,000</b>	<b>2,000</b>	<b>12,000</b>	<b>33,000</b>
								-
<b>KNOX</b>								-
East Knox W/D	48	717	2,500				1,600	4,100
Dewitt W/D	130	669	7,500				2,000	9,500
Laurel Co. W/D #2	6.5	45	320				230	550
Barbourville	137	1300	7,000				2,000	9,000
<b>Total</b>	<b>321.5</b>	<b>2731</b>	<b>17,320</b>				<b>5,830</b>	<b>23,150</b>
								-
<b>LAUREL</b>								-
Wood Creek	41	158	2,050				600	2,650
East Laurel	102	94	5,000				1,500	6,500
West Laurel	50	135	2,500				600	3,100
Laurel Co. W/D #2	22	105	1,300				300	1,600
London Utility Comm.				2,767			760	3,527
<b>Total</b>	<b>215</b>	<b>492</b>	<b>10,850</b>	<b>2,767</b>			<b>3,760</b>	<b>17,377</b>
								-
<b>ROCKCASTLE</b>								-
Livingston W/D	1.7	21	80					80
Mt. Vernon WW	32	271	1,600				1,100	2,700
Rockcastle Water Asoc.	156.3	1273	7,900				5,500	13,400
Western Rockcastle	29	808	1,500				2,060	3,560
<b>Total</b>	<b>219</b>	<b>2373</b>	<b>11,080</b>				<b>8,660</b>	<b>19,740</b>
								-
<b>Whitley</b>								-
Cumberland Falls Hwy W/D	209	1435	11,000			10,000	8,000	29,000
Pineville Utility	21	175	1,000				1,800	2,800
Corbin Utilities Comm.	51	545	2,500				1,800	4,300
Whitley Co. W/D	281	2214	14,000				10,000	24,000
<b>Total</b>	<b>562</b>	<b>4369</b>	<b>28,500</b>			<b>10,000</b>	<b>21,600</b>	<b>60,100</b>

CUMBERLAND VALLEY ADD TOTAL	2,110	16,361	109,781	8,767	24,000	24,000	61,640	225,888
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## BELL COUNTY

### (Bell County Water Service Area Map)

- Estimated 1999 population of 29,000--73% on public water
- Estimated 2020 population of 26,600--80% on public water
- 275 miles of water lines, with plans for 110 additional miles
- Estimated funding needs for public water 2000-2005--\$5,500,000
- Estimated funding needs for public water 2006-2020--\$11,080,000

Bell County had an estimated population of 29,017 (11,576 households) in 1999 with a projected population of 26,582 (11,573 households) in 2020. Public water is provided to about 73 percent of the county's residents. In areas of the county not served by public water, about 75 percent of the households rely on private domestic wells and 25 percent of the households rely on other sources. About 800 customers will be added to public water service through new line extensions in 2000-2020.

#### *Estimated Costs - Proposed Projects, 2000-2005*

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/ Pumps	Total
	Miles	Number	Cost in \$1000	In \$1000	in \$1000	in \$1000	in \$1000	in \$1000
<b>BELL</b>								-
Pineville	29	96	1,500			4,000		5,500
U.S. Utilities								-
<b>Total</b>	<b>29</b>	<b>96</b>	<b>1,500</b>			<b>4,000</b>		<b>5,500</b>

#### *Estimated Costs - Proposed Projects, 2006-2020*

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/ Pumps	Total
	Miles	Number	Cost in \$1000	in \$1000	in \$1000	in \$1000	in \$1000	in \$1000
<b>BELL</b>								-
U.S. Utilities	2.2	12	190					190
Pineville Utilities	77	695	3,850	6,000			1,040	10,890
<b>Total</b>	<b>79.2</b>	<b>707</b>	<b>4,040</b>	<b>6,000</b>			<b>1,040</b>	<b>11,080</b>

### PUBLIC WATER SYSTEMS

There are 13 public and semi-public water systems in Bell County: 7 community systems--2 municipal, Pineville Water System and Kettle Island Water System; 4 private or investor-owned; 1 state-- and 6 non-community systems.

# WATER SERVICE AREAS

## BELL 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/>

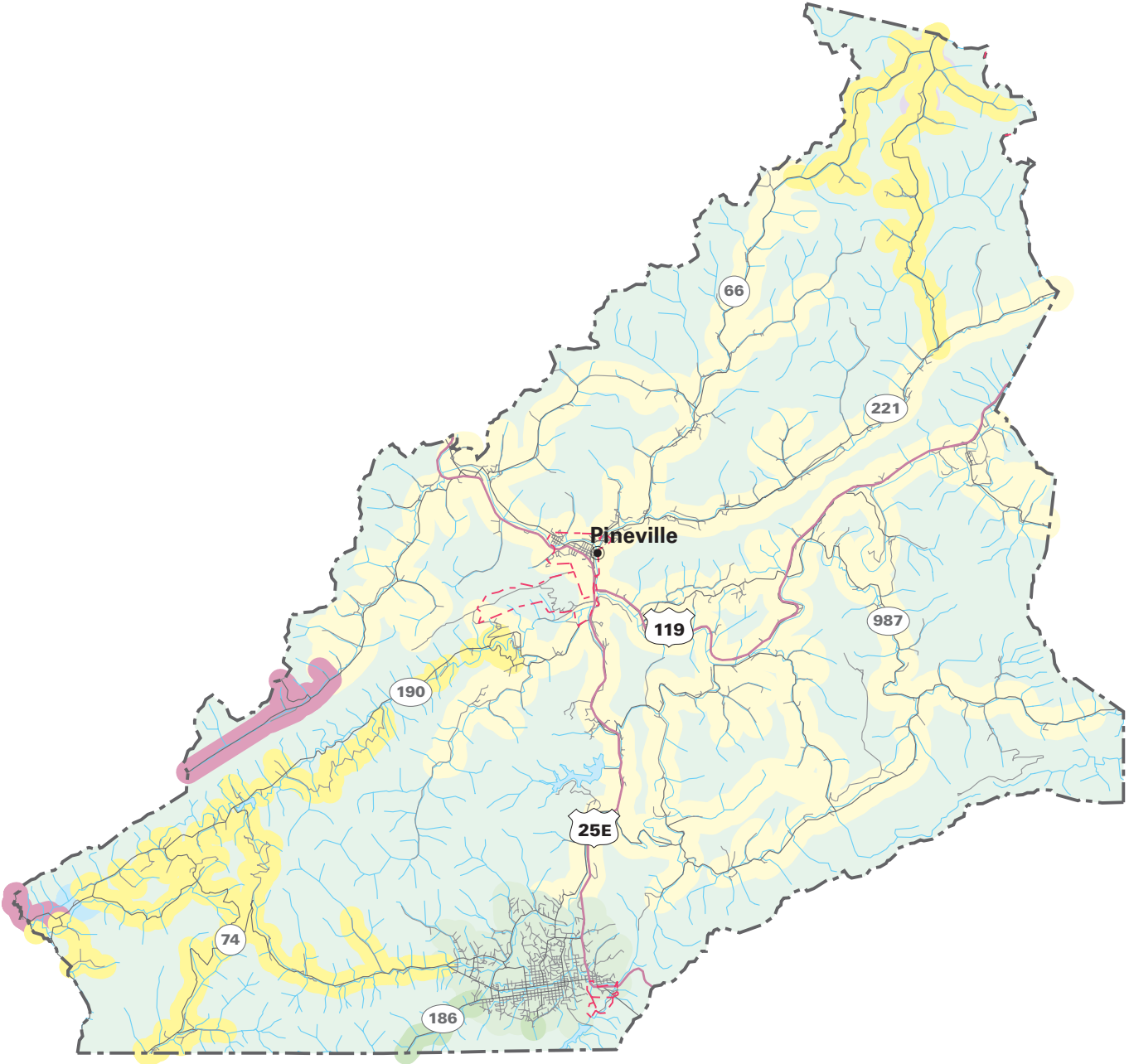
Bob Arnold, Chairman  
Lawrence Wetherby, Executive Director

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

Data Collection & GIS Input By:  
Kentucky Area Development Districts



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WATER SERVICE STATUS BY OWNER		
EXISTING SERVICE AREA	PROPOSED SERVICE AREA	
		U.S. UTILITIES
		REDBIRD MISSION/BEVERLY
		PINEVILLE WATER SYSTEM
		HENDERSON SETTLEMENT
		EAST KNOX WATER DISTRICT



**U.S. UTILITIES**

PWSID: ..... 0070282  
 System Type: ..... COMMUNITY  
 Owner Type: ..... INVESTOR-OWNED UTILITY  
 Surface Source: ..... FERN LAKE  
 Purchase Source: ..... FERN LAKE CO.  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD): ..... 3.0  
 Percent Daily Average Production: ..... 43.00  
 Total Tank Storage Capacity (gallons): ..... 1,200,000.00  
 Total Service Connections: ..... 5,547.00  
 Number of Employees: ..... 13.00  
 Treatment Operator Class: ..... 3D  
 Distribution Operator Class: ..... 4A  
 Customer Rate for 1,000 Gallons: ..... 5.60  
 O/M costs 1997: ..... Not available  
 O/M costs per Service Connection: ..... Not available  
 Net Revenue 1997: ..... Not available  
 Total Water Produced 1997 (gallons): ..... Not available  
 Water Sold 1997 (gallons): ..... Not available  
 Unaccounted-for Water 1997 (%): ..... Not available

U.S. Utilities gets raw water from Fern Lake and according to the Bell County Water Supply for the year 2010 the source will be inadequate. U. S. Utilities is currently selling water to Pineville Water System. Pineville Water System is in the process of upgrading their water treatment plant. When the upgrade to the plant is completed U. S. Utilities will be able to purchase water from the Pineville Water System if/or when the water supply becomes inadequate. This system currently services 4,700 households in Bell County. The water treatment plant has a capacity of 3 million gallons per day. On an average day the plant produces approximately 1.2 millions of gallons per day which is 40% of the total capacity. The storage capacity is approximately 1.2 million gallons of water for both of their clear wells. The current charge of \$5.60 for the base usage of 1,000 gallons of water is for residential, commercial, and industrial.

**PINEVILLE WATER SYSTEM**

PWSID: ..... 0070353  
 System Type: ..... COMMUNITY  
 Owner Type: ..... MUNICIPAL  
 Surface Source: ..... CANNON CREEK  
 Purchase Source:  
 Well Source:  
 Sells Water to: ..... GREEN HILLS WATER DISTRICT

Treatment Plant Capacity (MGD):.....	2.00
Percent Daily Average Production:.....	74.00
Total Tank Storage Capacity (gallons):.....	100,000.00
Total Service Connections: .....	3,850.00
Number of Employees:.....	19.00
Treatment Operator Class: .....	2D
Distribution Operator Class:.....	3A
Customer Rate for 1,000 Gallons:.....	5.36
O/M costs 1997:.....	Not available
O/M costs per Service Connection: .....	Not available
Net Revenue 1997: .....	Not available
Total Water Produced 1997 (gallons):.....	Not available
Water Sold 1997 (gallons):.....	Not available
Unaccounted-for Water 1997 (%): .....	Not available

The Pineville Water System acquires water from Cannon Creek Lake, which is located south of Pineville. The Water Supply Plan for Bell County concludes that the source is more than adequate well beyond the year 2010. This system has reached an agreement with U.S. Utilities to purchase water while the plant capacity is increased from 2 million gallons per day to 3 million gallons per day. The system currently serves 3,700 residential and 150 commercial customers. On an average day the plant produces 1.4 million gallons of water per day. The upgrade will be needed as this system keeps providing service throughout the county. The total storage capacity of the plant is 2,194,000 from various wells located throughout the county. The current purchase price for the base usage is \$5.36 for 1,000 gallons of water.

Pineville Water System serves the entire county except for the city of Middlesboro and some smaller systems like Frakes Elementary and Red Bird Mission. This water system is currently expanding to all areas within the county. Residents in the county that are not serviced by this system currently have wells, creeks, or springs for a source of water. Pollution from straight pipes and open dumps may/have polluted these sources of water that residents are using that are not currently serviced by these two systems. There is a need for potable water in the areas of the county that are not currently being served by either water system.

#### **KETTLE ISLAND WATER SYSTEM**

Kettle Island Water System is located in Bell County. The system serves a population of 396 and has 120 service connections. The community system has treatment capacity of 29,700 gallons per day and the water source is springs.

**OTHER SYSTEMS****REDBIRD MISSION/BEVERLY**

PWSID: ..... 0070459  
 System Type: ..... COMMUNITY  
 Owner Type: ..... PRIVATE  
 Surface Source:  
 Purchase Source:  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD): ..... 0.02  
 Percent Daily Average Production: ..... 8.00  
 Total Tank Storage Capacity (gallons): ..... 0.00  
 Total Service Connections: ..... 0.00  
 Number of Employees: ..... 0.00  
 Treatment Operator Class:  
 Distribution Operator Class: ..... 1BD  
 Customer Rate for 1,000 Gallons: ..... Not available  
 O/M costs 1997: ..... Not available  
 O/M costs per Service Connection: ..... Not available  
 Net Revenue 1997: ..... Not available  
 Total Water Produced 1997 (gallons): ..... Not available  
 Water Sold 1997 (gallons): ..... Not available  
 Unaccounted-for Water 1997 (%): ..... Not available

Redbird Mission/Beverly is located in Bell County. The system serves a population of 30 and has 15 service connections. The private, community system has treatment capacity of 10,800 gallons per day and the water source is wells.

**COCA COLA BOTTLING SPRING WATER**

Coca Cola Bottling Spring Water is located in Bell County. The system serves a population of 1,535 and has 1 service connection. The investor-owned, community system has treatment capacity of 90,000 gallons per day and the water source is the Tennessee River.

**BELL COUNTY FORESTRY CAMP**

Bell County Forestry Camp is located in Bell County. The system serves a population of 265 and has 12 service connections. The state, community system has treatment capacity of 16,800 gallons per day and the water source is Camp Lake.

**HENDERSON SETTLEMENT**

PWSID: ..... 0070734  
 System Type: ..... COMMUNITY  
 Owner Type: ..... PRIVATE  
 Surface Source: ..... LAKE

Purchase Source:  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD):..... 0.04  
 Percent Daily Average Production:..... 22.00  
 Total Tank Storage Capacity (gallons):..... 15,000.00  
 Total Service Connections: ..... 35.00  
 Number of Employees:..... 2.00  
 Treatment Operator Class:  
 Distribution Operator Class:..... 1BD  
 Customer Rate for 1,000 Gallons:..... Not available  
 O/M costs 1997:..... Not available  
 O/M costs per Service Connection: ..... Not available  
 Net Revenue 1997:..... Not available  
 Total Water Produced 1997 (gallons):..... Not available  
 Water Sold 1997 (gallons):..... Not available  
 Unaccounted-for Water 1997 (%): ..... Not available

Henderson Settlement is located in Bell County. The system serves a population of 105 and has 25 service connections. The private, community system has treatment capacity of 41,760 gallons per day and storage capacity of 15,000 gallons. The water source is an impoundment.

#### **FRAKES ELEMENTARY SCHOOL**

PWSID:..... 0072158  
 System Type:..... NON TRANSIENT NON COMMUNITY  
 Owner Type:..... LOCAL GOVERNMENT OR SCHOOL BOARD  
 Surface Source:  
 Purchase Source:  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD):..... 0.24  
 Percent Daily Average Production:..... 100.00  
 Total Tank Storage Capacity (gallons):..... 0.00  
 Total Service Connections: ..... 2.00  
 Number of Employees:..... 16.00  
 Treatment Operator Class:  
 Distribution Operator Class:..... 1BD  
 Customer Rate for 1,000 Gallons:..... Not available  
 O/M costs 1997:..... Not available  
 O/M costs per Service Connection: ..... Not available  
 Net Revenue 1997:..... Not available  
 Total Water Produced 1997 (gallons):..... Not available  
 Water Sold 1997 (gallons):..... Not available  
 Unaccounted-for Water 1997 (%): ..... Not available

Frakes Elementary School is located in Bell County. The system serves a population of 150 and has 2 service connections. The local, non-transient, non-community system has treatment capacity of 1,000 gallons per day and the water source is wells.

**CUMBERLAND GAP NATIONAL HISTORIC PARK (NHP)/SUGAR RUN**

Cumberland Gap National Historic Park (NHP)/Sugar Run is located in Bell County. The system serves a population of 25 and has 1 service connection. The federal, transient, non-community system has treatment capacity of 25,000 gallons per day and the water source is wells.

**CUMBERLAND GAP NHP/HENSLEY SET**

Cumberland Gap NHP/Hensley Set is located in Bell County. The system serves a population of 25 and has 6 service connections. The federal, transient, non-community system has treatment capacity of 25,000 gallons per day and the water source is wells

**CUMBERLAND GAP NHP/PINNACLE**

Cumberland Gap NHP/Pinnacle is located in Bell County. The system serves a population of 50 and has 1 service connection. The federal, transient, non-community system has treatment capacity of 6,000 gallons per day and the water source is wells.

**CUBBAGE ELEMENTARY SCHOOL**

Cubbage Elementary School is located in Bell County. The system serves a population of 90 and has 3 service connections. The local, non-transient, non-community system has treatment capacity of 10,000 gallons per day and the water source is wells

**PARTIN HOUSE WATER SYSTEM**

Partin House Water System is located in Bell County. The system serves a population of 40 and has 7 service connections. The private, transient, non-community system has treatment capacity of 7,200 gallons per day and the water source is wells.

**PRIVATE DOMESTIC SYSTEMS**

About 7,950 people in Bell County rely on private domestic water supplies: 5,950 on wells and 2,000 on other sources.

Most wells drilled in valley bottoms are adequate for domestic supply. In central and southern Bell County fewer than half the wells drilled on hillsides and fewer wells on hilltops are adequate for a domestic supply. In the northern half of Bell County and along Pine Mountain where water is more plentiful three-quarters of the wells on hillsides and

some wells on hilltops are adequate for a domestic supply. The northern half of the county also has the potential to produce high yielding wells below 200 feet that could provide sufficient water for small municipal or industrial supplies.

Ground water obtained from most drilled wells in this area is moderately hard and contains noticeable amounts of iron. Salty water probably will not be found less than 200 feet below the principal valley bottoms in the southern half of the county and 300 feet in the northern half of the county.

A few high volume springs are found east of Middlesboro and along Pine Mountain, which yield as much as 400 gallons per minute. Most springs in the rest of the county yield less than 5gpm.

## CLAY COUNTY

### (Clay County Water Service Area Map)

- Estimated 1999 population of 22,400--65% on public water
- Estimated 2020 population of 23,100--87% on public water
- 265 miles of water lines, with plans for 350 additional miles
- Estimated funding needs for public water 2000-2005--\$35,645,000
- Estimated funding needs for public water 2006-2020--\$13,941,000

Clay County had an estimated population of 22,399 (8,302 households) in 1999 with a projected population of 23,052 (9,188 households) in 2020. Public water is provided to about 65 percent of the county's residents. In areas of the county not served by public water, about 93 percent of the households rely on private domestic wells and 7 percent of the households rely on other sources. About 2,030 customers will be added to public water service through new line extensions in 2000-2020.

#### *Estimated Costs - Proposed Projects, 2000-2005*

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/ Pumps	Total
	Miles	Number	Cost in \$1000	In \$1000	in \$1000	in \$1000	in \$1000	in \$1000
<b>CLAY</b>								-
Manchester	192	1,032	10,000		20,000		2,300	32,300
Dewitt	16	200	1,345					1,345
East Laurel W/D	23	121	1,500				500	2,000
<b>Total</b>	<b>231</b>	<b>1,353</b>	<b>12,845</b>		<b>20,000</b>		<b>2,800</b>	<b>35,645</b>

#### *Estimated Costs - Proposed Projects, 2006-2020*

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/ Pumps	Total
	Miles	Number	Cost in \$1000	in \$1000	in \$1000	in \$1000	in \$1000	in \$1000
<b>CLAY</b>								-
N. Manchester Water Ass.	80	451	5,441				1,450	6,891
Manchester Water Works	34.7	200	1,850		2,000	2,000	900	6,750
Hyden/Leslie W/D	6	29	300					300
<b>Total</b>	<b>120.7</b>	<b>680</b>	<b>7,591</b>		<b>2,000</b>	<b>2,000</b>	<b>2,350</b>	<b>13,941</b>

### PUBLIC WATER SYSTEMS

Clay County is served by 7 public or semi-public water systems: 6 community systems--1 municipal, Manchester Water Works; 2 water districts, Hima-Sibert Water District and East Laurel Water District; 1 water association, North Manchester Water Association; 2 private systems-- and 1 non-community system.

# WATER SERVICE AREAS

## CLAY 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 Prough

Data Collection & GIS Input By:  
Kentucky Area Development Districts



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#### WATER SERVICE STATUS BY OWNER

EXISTING SERVICE AREA	PROPOSED SERVICE AREA	
		REDBIRD MISSION/QUEENDALE
		NORTH MANCHESTER WATER ASSOCIATION
		MANCHESTER WATER WORKS
		JACKSON COUNTY WATER ASSOCIATION
		HIMA-SIBERT WATER DISTRICT
		EAST LAUREL WATER DISTRICT

Clay County officials have discussed the idea of combining all of the water systems into one water district; the Clay County Water District. If this district can not be achieved, they at least want to incorporate the Hima-Sibert Water District into Manchester Water Works. The local officials are working very closely with Jackson County to see that a lake and a regional treatment plant is built in the Sturgeon Creek area. They are very willing to buy treated water from Jackson County. Clay County officials want everyone in their county to be served and do not care where the water comes from. Dewitt Water District out of Knox County is planning to provide service in the Jeff's Creek area of Clay County. Leslie County is also going to serve an area of Clay County in the Redbird area. There is a slight possibility that Bell County will come into Clay and serve part of the Redbird area.

### **MANCHESTER WATER WORKS**

PWSID: ..... 0260737  
 System Type:..... COMMUNITY  
 Owner Type: ..... MUNICIPAL  
 Surface Source:..... GOOSE CREEK RIVER  
 Purchase Source:  
 Well Source:  
 Sells Water to: ..... HIMA SIBERT WATER DISTRICT  
 Treatment Plant Capacity (MGD):..... 2.30  
 Percent Daily Average Production:..... 84.00  
 Total Tank Storage Capacity (gallons): ..... 2,200,000.00  
 Total Service Connections: ..... 2,800.00  
 Number of Employees:..... 20.00  
 Treatment Operator Class: ..... 2D  
 Distribution Operator Class:..... 3A  
 Customer Rate for 1,000 Gallons:..... 3.50  
 O/M costs 1997: ..... Not available  
 O/M costs per Service Connection: ..... Not available  
 Net Revenue 1997: ..... Not available  
 Total Water Produced 1997 (gallons): ..... Not available  
 Water Sold 1997 (gallons): ..... Not available  
 Unaccounted-for Water 1997 (%): ..... Not available

Manchester Water Works currently withdraws water from the Bert T. Combs Lake, Goose Creek, and a seasonal well. According to the Clay county Water Supply Plan, this supply is not adequate source. Another temporary intake (2.5 MGD) is going to be added to Goose Creek until a new source is found. Manchester Water Works is currently looking at Laurel Lake (estimated cost of \$25+ Million), Buckhorn Lake (estimated cost of \$16+ Million) and the proposed Sturgeon Creek reservoir in Jackson County (no cost estimate available). This

system currently sells to 3,600 total customers in Clay County, as well as North Manchester Water Association and Hima Sibert Water District. The water treatment plant for this system has a capacity of 2.3 MGD, and produces 1.5 MGD (65% of capacity). Manchester Water Works as a total storage capacity of 2.2 million gallons (six water tanks and one clear well at the plant). The rate for Manchester Water Works inside the city limits is \$5.00 for two thousand gallons and \$9.00 for two thousand gallons outside the city limits.

#### **NORTH MANCHESTER WATER ASSOCIATION**

PWSID: ..... 0260266  
 System Type: ..... COMMUNITY  
 Owner Type: ..... WATER ASSOCIATION  
 Surface Source:  
 Purchase Source: ..... MANCHESTER WATER WORKS  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD): ..... 0.00  
 Percent Daily Average Production: ..... 0.00  
 Total Tank Storage Capacity (gallons): ..... 788,000.00  
 Total Service Connections: ..... 1,483.00  
 Number of Employees: ..... 3.00  
 Treatment Operator Class: ..... 2D  
 Distribution Operator Class:  
 Customer Rate for 1,000 Gallons: ..... 5.14  
 O/M costs 1997: ..... 330,422.43  
 O/M costs per Service Connection: ..... 226.01  
 Net Revenue 1997: ..... 19,025.75  
 Total Water Produced 1997 (gallons): ..... 0.00  
 Water Sold 1997 (gallons): ..... 102,731,000.00  
 Unaccounted-for Water 1997 (%): ..... 7.82

North Manchester Water Association currently buys water from Manchester Water Works. North Manchester Water Association sells water to 1,464 residential customers, eight commercial customers and eleven industrial customers. This system has three water tanks totaling 788,000 gallons.

#### **HIMA SIBERT WATER DISTRICT**

PWSID: ..... 0260197  
 System Type: ..... COMMUNITY  
 Owner Type: ..... WATER DISTRICT  
 Surface Source:  
 Purchase Source: ..... MANCHESTER WATER WORKS  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD): ..... 0.00  
 Percent Daily Average Production: ..... 0.00

Total Tank Storage Capacity (gallons): .....	100,000.00
Total Service Connections: .....	522.00
Number of Employees:.....	2.00
Treatment Operator Class: .....	2D
Distribution Operator Class:	
Customer Rate for 1,000 Gallons:.....	5.73
O/M costs 1997:.....	129,690.00
O/M costs per Service Connection: .....	248.45
Net Revenue 1997: .....	13,089.00
Total Water Produced 1997 (gallons):.....	0.00
Water Sold 1997 (gallons):.....	31,634,000.00
Unaccounted-for Water 1997 (%): .....	16.60

Hima Sibert currently buys water from both Manchester Water Works and Wood Creek Water District. There are 498 residential customers and 24 commercial customers in the Hima Sibert water District.

### **EAST LAUREL WATER DISTRICT**

East Laurel Water buys water from Wood Creek Water District and services the Foggertown area of Clay County. The local county officials would like to see East Laurel expand to serve a bigger population in Clay County.

## **OTHER SYSTEMS**

### **QUEENDALE COMMUNITY**

PWSID: .....	0260492
System Type:.....	COMMUNITY
Owner Type: .....	PRIVATE
Surface Source:	
Purchase Source:	
Well Source:	
Sells Water to:	
Treatment Plant Capacity (MGD):.....	0.02
Percent Daily Average Production:.....	49.00
Total Tank Storage Capacity (gallons): .....	10,000.00
Total Service Connections: .....	22.00
Number of Employees:.....	1.00
Treatment Operator Class:	
Distribution Operator Class:.....	1BD
Customer Rate for 1,000 Gallons:.....	Not available
O/M costs 1997: .....	Not available
O/M costs per Service Connection: .....	Not available
Net Revenue 1997: .....	Not available
Total Water Produced 1997 (gallons):.....	Not available
Water Sold 1997 (gallons):.....	Not available
Unaccounted-for Water 1997 (%): .....	Not available

Queendale Community is located in Clay County. The system serves a population of 75 and has 22 service connections.

#### **RED BIRD MOUNTAIN MEDICAL CENTER**

Red Bird Mountain Medical Center is located in Clay County. The system serves a population of 75 and has 19 service connections. The private, community system has treatment capacity of 24,000 gallons per day and storage capacity of 25,000 gallons. The water source is wells.

#### **RED BIRD SCHOOL**

Red Bird School is located in Clay County. The system serves a population of 425 and has 1 service connection. The local, non-transient, non-community system has treatment capacity of 4,000 gallons per day and the water source is wells

### **PRIVATE DOMESTIC SYSTEMS**

About 7,850 people in Clay County rely on private domestic water supplies: 7,300 on wells, and 550 on other sources.

Most wells drilled in valley bottoms are adequate for a domestic supply. Fewer than half the wells drilled on hillsides are adequate for a domestic supply and wells on hilltops and ridges yield smaller quantities of water. In the western half of the county wells penetrating 500 feet or more of sandstone may yield enough water for small municipal or industrial supply.

Water obtained from most wells in this area is soft or moderately hard and contains noticeable amounts of iron. Salty water may be found in wells drilled less than 100 feet below the level of the principal valley bottoms.

A few springs supply sufficient quantities of water for domestic use, usually produces less than 5 gpm.

## HARLAN COUNTY

### (Harlan County Water Service Area Map)

- Estimated 1999 population of 34,900--52% on public water
- Estimated 2020 population of 33,200--78% on public water
- 220 miles of water lines, with plans for 295 additional miles
- Estimated funding needs for public water 2000-2005--\$3,500,000
- Estimated funding needs for public water 2006-2020--\$49,800,000

Harlan County had an estimated population of 34,861 (13,532 households) in 1999 with a projected population of 33,163 (14,203 households) in 2020. Public water is provided to about 52 percent of the county's residents. In areas of the county not served by public water, about 83 percent of the households rely on private domestic wells and 17 percent of the households rely on other sources. About 3,650 customers will be added to public water service through new line extensions in 2000-2020.

### ESTIMATED COSTS - PROPOSED PROJECTS, 2000-2005

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/Pumps	Total
	Miles	Number	Cost in \$1000	In \$1000	in \$1000	in \$1000	in \$1000	in \$1000
<b>HARLAN</b>								-
Black Mtn. W/D	36	490	1,900				1,600	3,500
<b>Total</b>	<b>36</b>	<b>490</b>	<b>1,900</b>				<b>1,600</b>	<b>3,500</b>

### ESTIMATED COSTS - PROPOSED PROJECTS, 2006-2020

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/Pumps	Total
	Miles	Number	Cost in \$1000	in \$1000	in \$1000	in \$1000	in \$1000	in \$1000
<b>HARLAN</b>								-
Black Mtn. W/D	36	490	1,900				1,600	3,500
Cawood W/D	150	635	7,500				3,000	10,500
Cumberland W/D	27	980	1,500				600	2,100
Everts	2	90	100					100
Green Hills	7	82	400				300	700
Wallins Creek Water	9	750	500				300	800
Harlan	28	130	1,500		20,000	10,000	600	32,100
<b>Total</b>	<b>259</b>	<b>3,157</b>	<b>13,400</b>		<b>20,000</b>	<b>10,000</b>	<b>6,400</b>	<b>49,800</b>

### PUBLIC WATER SYSTEMS

Harlan County is served by 21 public or semi-public water systems: 15 community -- 5 municipal, Lynch Water Plant, Harlan Municipal Water Works, Benham Water Plant,

# WATER SERVICE AREAS

## HARLAN 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/>

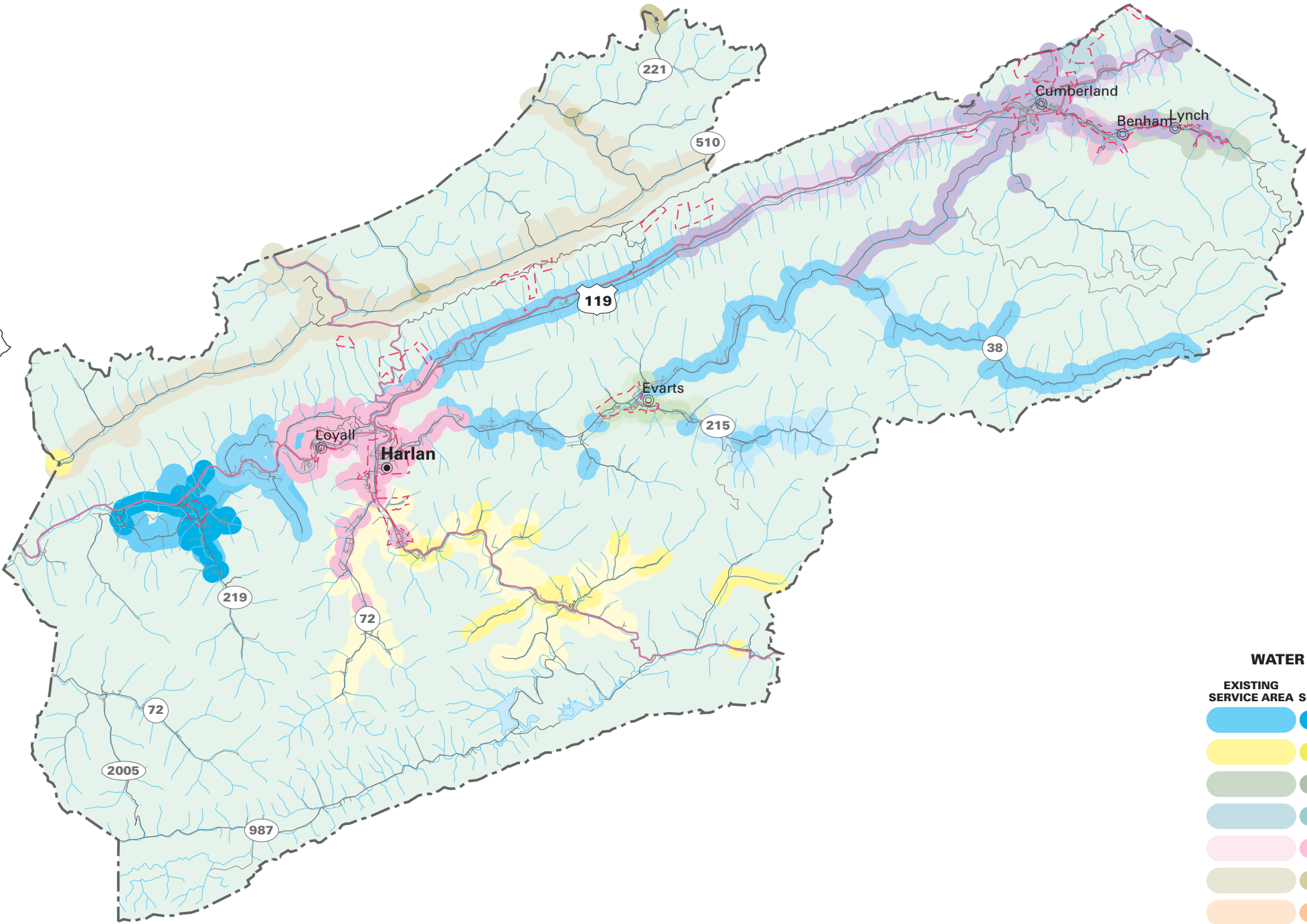
Bob Arnold, Chairman  
Lawrence Wetherby, Executive Director

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

Data Collection & GIS Input By:  
Kentucky Area Development Districts



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WATER SERVICE STATUS BY OWNER		
EXISTING SERVICE AREA	PROPOSED SERVICE AREA	
		WALLINS WATER SYSTEM
		PINEVILLE WATER SYSTEM
		LYNCH WATER PLANT
		KINGDOM COME STATE PARK
		HARLAN MUNICIPAL WATER WORKS
		GREEN HILLS WATER DISTRICT
		GILLEY HOLLOW WATER SYSTEM
		EVARTS MUNICIPAL WATER PLANT
		CUMBERLAND MUNICIPAL WATER WORKS
		CAWOOD WATER DISTRICT
		BLACK MOUNTAIN UTILITY DISTRICT/LOUELLEN
		BENHAM WATER PLANT

Evarts Municipal Water Plant, and Cumberland Municipal Water Works; 4 water districts, Black Mountain Utility District, Cawood Water District, Green Hills Water District, Wallins Creek Water; 7 private systems; and 5 non-community systems.

### **BENHAM WATER PLANT**

PWSID: ..... 0480028  
 System Type:..... COMMUNITY  
 Owner Type: ..... MUNICIPAL  
 Surface Source: ..... COAL MINE  
 Purchase Source:  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD):..... 0.30  
 Percent Daily Average Production:..... 48.00  
 Total Tank Storage Capacity (gallons): ..... 307,000.00  
 Total Service Connections: ..... 408.00  
 Number of Employees:..... 1.50  
 Treatment Operator Class: ..... 1D  
 Distribution Operator Class:..... 2A  
 Customer Rate for 1,000 Gallons:..... 4.61  
 O/M costs 1997: ..... Not available  
 O/M costs per Service Connection: ..... Not available  
 Net Revenue 1997: ..... Not available  
 Total Water Produced 1997 (gallons): ..... Not available  
 Water Sold 1997 (gallons): ..... Not available  
 Unaccounted-for Water 1997 (%): ..... Not available

Benham Water Works gets its water from the Cumberland River. No forecasts were made because this system is considered a small non-growth system. This district currently services 403 households in Harlan County. The water treatment plant has a capacity of 300,000 gallons per day. On an average day the plant produces approximately 130,000 gallons of water. The storage capacity is approximately 307,000 for their 2 water tanks and 130,000 for their clear well. The current charge of \$9.82 for the base usage of 2,000 gallons is for residential, commercial, and industrial.

This system is geographically incapable of water service expansion. The city is located in the extreme northeast part of the county. There are mountains to all sides of the system. The City of Cumberland is to the west and the city of Lynch is to the east of the city. Currently there are no new potential customers because everyone that can be serviced with water is served. Interconnecting Benham Water Works to Cumberland Municipal Water System and

the Lynch Water System would be ideal. In case of an emergency the systems would act as a backup for each other.

**BLACK MOUNTAIN UTILITY DISTRICT/LOUELLEN**

PWSID: ..... 0480498  
 System Type:..... COMMUNITY  
 Owner Type: ..... WATER DISTRICT  
 Surface Source:  
 Purchase Source:  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD):..... 0.14  
 Percent Daily Average Production:..... 24.00  
 Total Tank Storage Capacity (gallons): ..... 310,000.00  
 Total Service Connections: ..... 1,074.00  
 Number of Employees:..... 6.00  
 Treatment Operator Class: ..... 1D  
 Distribution Operator Class:..... 2A  
 Customer Rate for 1,000 Gallons:..... 6.48  
 O/M costs 1997:..... 259,679.62  
 O/M costs per Service Connection: ..... 189.69  
 Net Revenue 1997: ..... 97,522.22  
 Total Water Produced 1997 (gallons):..... 11,597,000.00  
 Water Sold 1997 (gallons): ..... 68,409,160.00  
 Unaccounted-for Water 1997 (%): ..... 16.63

Black Mountain Utility District acquires water from nearby wells and mines, and according to the Harlan County Water Supply Plan this is an adequate source for future water needs. This District has reached an agreement to purchase 140,000 gallons of water per day from Harlan Municipal Water Works. The system currently serves 1,045 residential, 4 commercial, 1 industrial and 1 institutional customers. The system has the current capacity 144,000 gallons per day. On an average day the plant produces 31,000 gallons of water per day. The total storage capacity of the plant is 310,000 gallons of water in their 4 water tanks and 7,000 gallons for their clear well.

Black Mountain is coordinating their planning for water plant expansions with the City of Harlan. Should Harlan fail to expand, Black Mountain will develop needed capacity to meet growth.

**CAWOOD WATER DISTRICT**

PWSID: ..... 0480565  
 System Type:..... COMMUNITY  
 Owner Type: ..... WATER DISTRICT

Surface Source:..... MARTIN FORK OF THE CUMBERLAND RIVER  
 Purchase Source:  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD):..... 0.50  
 Percent Daily Average Production:..... 65.00  
 Total Tank Storage Capacity (gallons):..... 400,000.00  
 Total Service Connections: ..... 801.00  
 Number of Employees:..... 4.00  
 Treatment Operator Class: .....2D  
 Distribution Operator Class:.....2A  
 Customer Rate for 1,000 Gallons:..... 6.31  
 O/M costs 1997:..... 152,660.44  
 O/M costs per Service Connection: ..... 200.34  
 Net Revenue 1997:..... 22,607.42  
 Total Water Produced 1997 (gallons):..... 54,732,855.00  
 Water Sold 1997 (gallons):..... 37,759,718.00  
 Unaccounted-for Water 1997 (%): ..... 25.02

Cawood Water District acquires water from nearby Martins Fork Lake, and according to the Harlan County Water Supply Plan this is a very adequate source for future needs. The system currently serves 881 residential, 8 commercial and 1 industrial. The system has the current capacity of 500,000 gallons per day. On an average day the plant produces 150,370 gallons of water per day. The total storage capacity of the plant is 400,000 gallons of water in their 3 water tanks and 75,000 gallons for their clear well.

#### **CUMBERLAND MUNICIPAL WATER WORKS**

PWSID:..... 0480092  
 System Type:..... COMMUNITY  
 Owner Type:..... MUNICIPAL  
 Surface Source:..... POOR FORK  
 Purchase Source:  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD):..... 1.00  
 Percent Daily Average Production:..... 36.00  
 Total Tank Storage Capacity (gallons):..... 1,375,000.00  
 Total Service Connections: ..... 1,157.00  
 Number of Employees:..... 4.00  
 Treatment Operator Class: .....2D  
 Distribution Operator Class:.....3A  
 Customer Rate for 1,000 Gallons:..... 5.13  
 O/M costs 1997:..... Not available  
 O/M costs per Service Connection: ..... Not available  
 Net Revenue 1997:..... Not available  
 Total Water Produced 1997 (gallons):..... Not available  
 Water Sold 1997 (gallons):..... Not available  
 Unaccounted-for Water 1997 (%): ..... Not available

Cumberland Municipal Water System acquires water from the Poor Fork of the Cumberland River and according to the Harlan County Water supply Plan this is an adequate source of water for future needs. The system currently serves 1,157 residential customers. The system has the current capacity of 1,000,000 gallons per day. On an average day the plant produces 550,000 gallons of water per day. The total storage capacity of the plant is 1,375,000 gallons of water in their 6 water tanks and 550,000 gallons for their clear well. The current purchase price for the base usage of water is \$10.25 for 1,000 gallons.

### **EVARTS MUNICIPAL WATER PLANT**

PWSID: ..... 0480125  
 System Type: ..... COMMUNITY  
 Owner Type: ..... MUNICIPAL  
 Surface Source: ..... MINE  
 Purchase Source:  
 Well Source:  
 Sells Water to: ..... BLACK MOUNTAIN UTILITY DISTRICT/KENVIR  
 Treatment Plant Capacity (MGD): ..... 0.75  
 Percent Daily Average Production: ..... 35.00  
 Total Tank Storage Capacity (gallons): ..... 150,000.00  
 Total Service Connections: ..... 619.00  
 Number of Employees: ..... 2.00  
 Treatment Operator Class: ..... 2D  
 Distribution Operator Class: ..... 3A  
 Customer Rate for 1,000 Gallons: ..... 5.10  
 O/M costs 1997: ..... Not available  
 O/M costs per Service Connection: ..... Not available  
 Net Revenue 1997: ..... Not available  
 Total Water Produced 1997 (gallons): ..... Not available  
 Water Sold 1997 (gallons): ..... Not available  
 Unaccounted-for Water 1997 (%): ..... Not available

Evarts Municipal Water Works acquires water from 3 nearby wells, 1 mine and the Clover Fork River. The system currently serves 556 residential, 50 commercial and 3 institutional customers. The system has the current capacity of 750,000 gallons per day. On an average day the plant produces 165,000 gallons of water. The total storage capacity of the plant is 150,000 gallons of water in their 1 water tank. The current purchase price for the base usage of water is \$9.70 for 2,000 gallons inside the city limits and \$10.70 outside the city limits.

### **GREEN HILLS WATER DISTRICT**

PWSID: ..... 0480341  
 System Type: ..... COMMUNITY  
 Owner Type: ..... WATER DISTRICT

Surface Source: ..... GOLD SPRING  
 Purchase Source: ..... PINEVILLE UTILITY COMMISSION  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD): ..... 0.86  
 Percent Daily Average Production: ..... 43.00  
 Total Tank Storage Capacity (gallons): ..... 100,000.00  
 Total Service Connections: ..... 210.00  
 Number of Employees: ..... 2.00  
 Treatment Operator Class: ..... 1D  
 Distribution Operator Class: ..... 2A  
 Customer Rate for 1,000 Gallons: ..... 6.64  
 O/M costs 1997: ..... 50,683.00  
 O/M costs per Service Connection: ..... 240.20  
 Net Revenue 1997: ..... 12,469.00  
 Total Water Produced 1997 (gallons): ..... 15,881,000.00  
 Water Sold 1997 (gallons): ..... 9,779,000.00  
 Unaccounted-for Water 1997 (%): ..... 14.16

A trade agreement between Green Hills Water District and the Pineville Water System allows Green Hills the extra water it needs in order to serve more customers. The system currently serves 203 residential, 4 commercial and 3 institutional customers. The system has the current capacity of 86,400 gallons per day. On an average day the plant produces 43,507 gallons of water. The total storage capacity of the plant is 314,500 gallons of water in their 5 water tanks and 44,500 for their clear well.

### **HARLAN MUNICIPAL WATER WORKS**

PWSID: ..... 0480178  
 System Type: ..... COMMUNITY  
 Owner Type: ..... MUNICIPAL  
 Surface Source: ..... POOR FOLK RIVER  
 Purchase Source:  
 Well Source:  
 Sells Water to: ..... BLACK MOUNTAIN UTILITY DISTRICT/KENVIR  
 Treatment Plant Capacity (MGD): ..... 2.00  
 Percent Daily Average Production: ..... 51.00  
 Total Tank Storage Capacity (gallons): ..... 1,310,000.00  
 Total Service Connections: ..... 2,200.00  
 Number of Employees: ..... 14.00  
 Treatment Operator Class: ..... 2D  
 Distribution Operator Class: ..... 3A  
 Customer Rate for 1,000 Gallons: ..... 4.43  
 O/M costs 1997: ..... Not available  
 O/M costs per Service Connection: ..... Not available  
 Net Revenue 1997: ..... Not available  
 Total Water Produced 1997 (gallons): ..... Not available  
 Water Sold 1997 (gallons): ..... Not available  
 Unaccounted-for Water 1997 (%): ..... Not available

Harlan Municipal acquires water from the Poor Fork of the Cumberland River, and according to the Harlan County Water Supply Plan this is an adequate source for future needs. This system currently serves 1,118 residential, 369 commercial 2 industrial, and 13 institutional customers. The system has the current capacity of 2 million gallons per day. On an average day the plant produces 1.1 million gallons of water. The total storage capacity of the plant is 1,310,500 gallons of water in their 4 water tanks and 175,700 for their clear well. The current purchase price for the base usage of water is \$8.85 for 2,000 gallons.

#### **LYNCH WATER PLANT**

PWSID: ..... 0480262  
 System Type: ..... COMMUNITY  
 Owner Type: ..... MUNICIPAL  
 Surface Source: ..... BIG LOONEY CREEK  
 Purchase Source:  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD): ..... 1.20  
 Percent Daily Average Production: ..... 34.00  
 Total Tank Storage Capacity (gallons): ..... 500,000.00  
 Total Service Connections: ..... 450.00  
 Number of Employees: ..... 10.00  
 Treatment Operator Class: ..... 2D  
 Distribution Operator Class: ..... 3A  
 Customer Rate for 1,000 Gallons: ..... 10.54  
 O/M costs 1997: ..... Not available  
 O/M costs per Service Connection: ..... Not available  
 Net Revenue 1997: ..... Not available  
 Total Water Produced 1997 (gallons): ..... Not available  
 Water Sold 1997 (gallons): ..... Not available  
 Unaccounted-for Water 1997 (%): ..... Not available

Lynch Water System, in the extreme northeastern part of the county acquires water from Big Looney Creek. This system currently serves 437 residential, six commercial, and seven institutional customers. The system has the current capacity of 1.2 million gallons per day. The total storage capacity of the plant is 550,000 gallons of water in their 2 water tanks and 92,000 for their clear well. The current purchase price for the base usage of water is \$21.08 for 2,000 gallons.

#### **WALLINS WATER SYSTEM**

PWSID: ..... 0480572  
 System Type: ..... COMMUNITY  
 Owner Type: ..... WATER DISTRICT

Surface Source:  
 Purchase Source: ..... HARLAN MUNICIPAL WATER WORKS  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD):..... 0.432  
 Percent Daily Average Production:..... 26.00  
 Total Tank Storage Capacity (gallons):..... 200,000.00  
 Total Service Connections: ..... 437.00  
 Number of Employees:..... 2.00  
 Treatment Operator Class: ..... 1D  
 Distribution Operator Class:..... 2A  
 Customer Rate for 1,000 Gallons:..... 7.96  
 O/M costs 1997:..... Not available  
 O/M costs per Service Connection: ..... Not available  
 Net Revenue 1997: ..... Not available  
 Total Water Produced 1997 (gallons):..... Not available  
 Water Sold 1997 (gallons):..... Not available  
 Unaccounted-for Water 1997 (%): ..... Not available

Wallins Creek Water acquires water from three wells and purchases water from Harlan Municipal Water Works. This system currently serves 366 residential and seven institutional customers. This system has a trade agreement with Harlan Municipal Water Works customers are serviced a master meter owned by Harlan Municipal Water Works. The system has the current capacity of 432,000 gallons per day. On an average day the plant produces 20,000 gallons of water. The current purchase price for the base usage of water is \$15.92 for 2,000 gallons.

#### **GILLEY HOLLOW WATER SYSTEM**

PWSID:..... 0483472  
 System Type:..... COMMUNITY  
 Owner Type:..... PRIVATE  
 Surface Source:  
 Purchase Source: ..... CITY OF CUMBERLAND  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD):..... 0.00  
 Percent Daily Average Production:..... 0.00  
 Total Tank Storage Capacity (gallons):..... 5,000.00  
 Total Service Connections: ..... 25.00  
 Number of Employees:..... 0.00  
 Treatment Operator Class: ..... 1D  
 Distribution Operator Class:  
 Customer Rate for 1,000 Gallons:..... Not available  
 O/M costs 1997:..... Not available  
 O/M costs per Service Connection: ..... Not available  
 Net Revenue 1997: ..... Not available  
 Total Water Produced 1997 (gallons):..... Not available  
 Water Sold 1997 (gallons):..... Not available  
 Unaccounted-for Water 1997 (%): ..... Not available

## OTHER SYSTEMS

### **BLUE DIAMOND CAMP WATER SYSTEM**

Blue Diamond Camp Water System is located in Harlan County. The system serves a population of 36 and has 11 service connections. The community system has treatment capacity of 9,000 gallons per day and the water source is wells.

### **BRADSHAW'S MOBILE HOME PARK**

Bradshaw's Mobile Home Park is located in Harlan County. The system serves a population of 36 and has 11 service connections. The private, community system has treatment capacity of 5,000 gallons per day and the water source is wells.

### **SAYLORS TRAILER PARK**

Saylors Trailer Park is located in Harlan County. The system serves a population of 35 and has 11 service connections. The private, community system has treatment capacity of 2,500 gallons per day and the water source is wells.

### **KENTENIA TRAILER PARK**

Kentenia Trailer Park is located in Harlan County. The system serves a population of 75 and has 23 service connections. The private, community system has treatment capacity of 10,000 gallons per day and the water source is wells.

### **PINE MOUNTAIN TRAILER PARK #**

Pine Mountain Trailer Park #2 is located in Harlan County. The system serves a population of 29 and has 7 service connections. The private, community system has treatment capacity of 15,000 gallons per day and the water source is wells.

### **WATTS CREEK TRAILER COURT**

Watts Creek Trailer Court is located in Harlan County. The system serves a population of 38 and has 12 service connections. The private, community system has treatment capacity of 6,000 gallons per day and the water source is wells.

### **TURNER WATER SYSTEM**

Turner Water System is located in Harlan County. The system serves a population of 200 and has 60 service connections. The private, community system has treatment capacity of 25,000 gallons per day and the water source is a mine.

### **VERDA ELEMENTARY SCHOOL**

Verda Elementary School is located in Harlan County. The system serves a population of 315 and has 2 service connections. The local, non-transient, non-community system has treatment capacity of 25,000 gallons per day and the water source is wells.

### **KINGDOM COME STATE PARK**

PWSID: ..... 0482399  
 System Type:..... TRANSIENT NON COMMUNITY  
 Owner Type: .....STATE  
 Surface Source: ..... PARK LAKE  
 Purchase Source:  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD):..... 0.03  
 Percent Daily Average Production:..... 24.00  
 Total Tank Storage Capacity (gallons): ..... 25,000.00  
 Total Service Connections: ..... 8.00  
 Number of Employees:..... 1.00  
 Treatment Operator Class:  
 Distribution Operator Class:..... 1AD  
 Customer Rate for 1,000 Gallons:.....Not available  
 O/M costs 1997:.....Not available  
 O/M costs per Service Connection: .....Not available  
 Net Revenue 1997: .....Not available  
 Total Water Produced 1997 (gallons):.....Not available  
 Water Sold 1997 (gallons):.....Not available  
 Unaccounted-for Water 1997 (%): .....Not available

Kingdom Come State Park is located in Harlan County. The system serves a population of 35 and has 8 service connections. The state, transient, non-community system has treatment capacity of 28,800 gallons per day and storage capacity of 25,000 gallons. The water source is wells.

### **AGES KCEOC HEADSTART**

Ages KCEOC Headstart is located in Harlan County. The system serves a population of 155 and has 1 service connection. The local, non-transient, non-community system has treatment capacity of 14,400 gallons per day and the water source is wells.

### **PINE MOUNTAIN SETTLEMENT SCHOOL**

Pine Mountain Settlement School is located in Harlan County. The system serves a population of 45 and has 13 service connections. The local, non-transient, non-community system has treatment capacity of 35,000 gallons per day and the water source is springs.

### **MARTINS FORK REC WATER SYSTEM**

Martins Fork Rec Water System is located in Harlan County. The system serves a population of 110 and has 11 service connections. The private, transient, non-community system has treatment capacity of 432,000 gallons per day. The water source is Martins Fork Lake.

### **PRIVATE DOMESTIC SYSTEMS**

About 17,000 people in Harlan County rely on private domestic water supplies: 14,000 on wells, and 3,000 on other sources.

Most wells drilled in valley bottoms are adequate for a domestic supply. About three-quarters of the wells drilled on hillsides and one-third of the well drilled on hilltops are adequate for a domestic water supply. Wells drilled 200 feet or more below the level of the principal valley bottoms may yield enough water for small municipal or industrial supplies. Probably few wells in this county drilled less than 300 feet below the level of the principal valley bottoms will yield salty water except in the small northwestern corner of the county north of Pine Mountain. North of Pine Mountain salty water can be found in the range of 200 feet below the principal valley bottoms. Wells drilled in the Pine Mountain area that reach limestone, may yield as much as several hundred gallons per minute.

Ground water obtained from most drilled wells in this area is soft but contains noticeable amounts of iron, except north of Pine Mountain where the water is moderately hard.

Some of the most productive springs in Eastern Kentucky are found along Pine Mountain in Harlan County. Limestone springs can yield more than 50 gpm but generally yield less than 10 gpm.

## JACKSON COUNTY

### (Jackson County Water Service Area Map)

- Estimated 1999 population of 13,000--80% on public water
- Estimated 2020 population of 14,500--100% on public water
- 310 miles of water lines, with plans for 340 additional miles
- Estimated funding needs for public water 2000-2005--\$400,000
- Estimated funding needs for public water 2006-2020-\$33,000,000

Jackson County had an estimated population of 13,000 (5,024 households) in 1999 with a projected population of 14,540 (6,205 households) in 2020. Public water is provided to about 85 percent of the county's residents. In areas of the county not served by public water, about 70 percent of the households rely on private domestic wells and 30 percent of the households rely on other sources. Virtually 100% of the county will be served by public water through new line extensions in 2000-2020.

#### *Estimated Costs - Proposed Projects, 2000-2005*

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/Pumps	Total
	Miles	Number	Cost in \$1000	In \$1000	in \$1000	in \$1000	in \$1000	in \$1000
JACKSON								-
McKee	5	22	250				150	400
Total	5	22	250				150	400

#### *Estimated Costs - Proposed Projects, 2006-2020*

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/Pumps	Total
	Miles	Number	Cost in \$1000	in \$1000	in \$1000	in \$1000	in \$1000	in \$1000
JACKSON								-
Jackson Co. W/D	334	1,852	17,000		2,000	2,000	12,000	33,000
McKee								-
Total	334	1,852	17,000		2,000	2,000	12,000	33,000

### PUBLIC WATER SYSTEMS

Jackson County has 2 community water systems: 1 municipality, McKee Water Works, and 1 water association, Jackson County Water Association. A small part of the county is also served by Wood Creek Water District.

# WATER SERVICE AREAS

## JACKSON 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/>

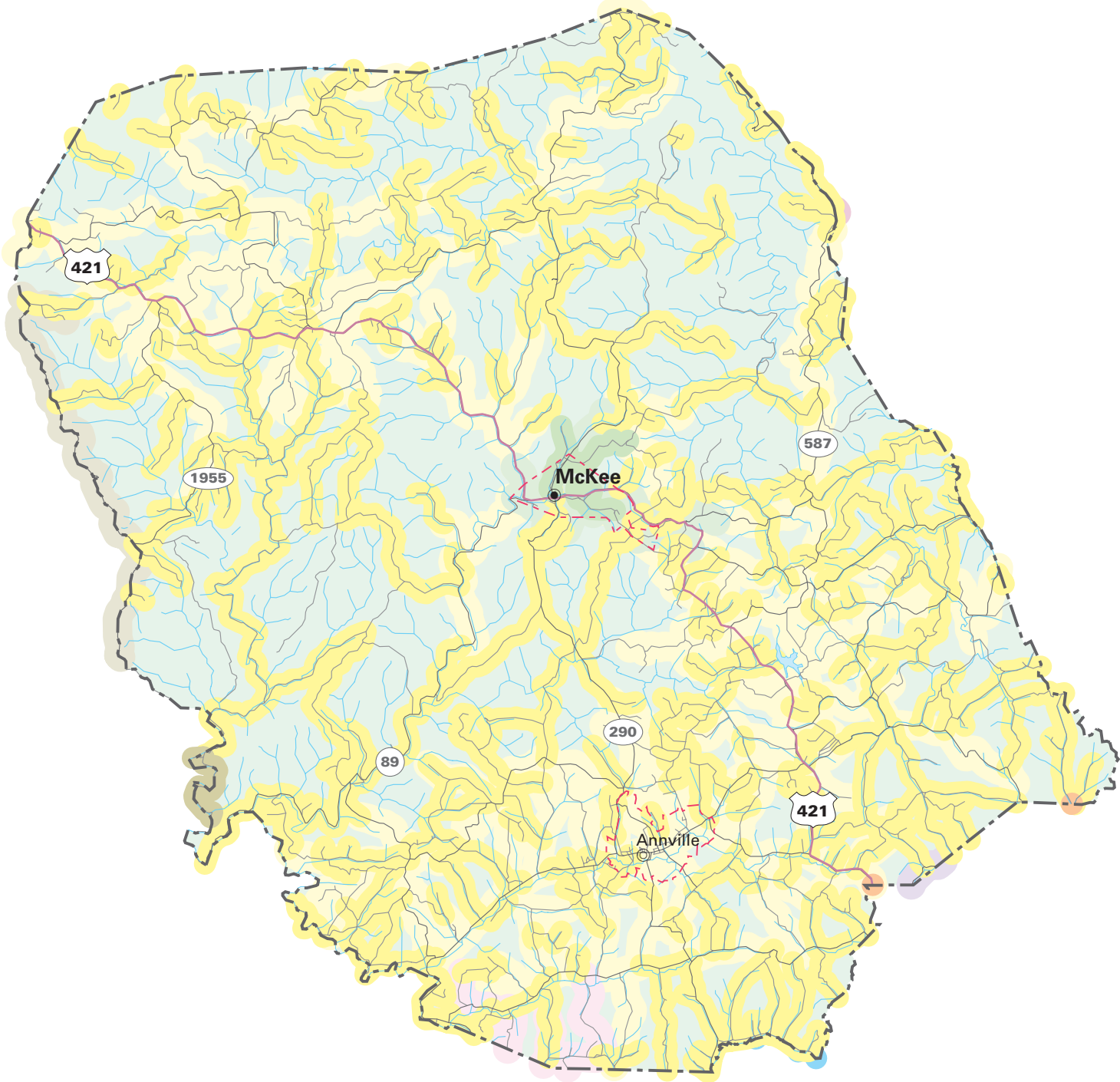
Bob Arnold, Chairman  
Lawrence Wetherby, Executive Director

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

Data Collection & GIS Input By:  
Kentucky Area Development Districts



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### WATER SERVICE STATUS BY OWNER

EXISTING SERVICE AREA	PROPOSED SERVICE AREA	
		WOOD CREEK WATER DISTRICT
		ROCKCASTLE COUNTY WATER ASSOCIATION
		NORTH MANCHESTER WATER ASSOCIATION
		MCKEE WATER WORKS
		MANCHESTER WATER WORKS
		JACKSON COUNTY WATER ASSOCIATION
		EAST LAUREL WATER DISTRICT
		BEATTYVILLE WATER WORKS

**JACKSON COUNTY WATER ASSOCIATION**

PWSID: ..... 0550209  
 System Type: ..... COMMUNITY  
 Owner Type: ..... WATER ASSOCIATION  
 Surface Source: ..... BELIAN LAKE  
 Purchase Source:  
 Well Source:  
 Sells Water to: ..... MCKEE WATER WORKS  
 Treatment Plant Capacity (MGD): ..... 1.00  
 Percent Daily Average Production: ..... 79.00  
 Total Tank Storage Capacity (gallons): ..... 410,000.00  
 Total Service Connections: ..... 3,636.00  
 Number of Employees: ..... 12.00  
 Treatment Operator Class: ..... 2D  
 Distribution Operator Class: ..... 3A  
 Customer Rate for 1,000 Gallons: ..... 5.11  
 O/M costs 1997: ..... 633,028.00  
 O/M costs per Service Connection: ..... 176.97  
 Net Revenue 1997: ..... 33,241.00  
 Total Water Produced 1997 (gallons): ..... 282,775,000.00  
 Water Sold 1997 (gallons): ..... 200,669,700.00  
 Unaccounted-for Water 1997 (%): ..... 14.79

Jackson County Water Association gets its water from nearby Beulah Lake, and according to the Jackson County Water Supply Plan has an adequate supply of raw water to support any future needs. This association currently services 3,412 residential, 211 commercial, 7 industrial and 6 governmental customers. There are 30 customers in Estill County and 37 customers in Rockcastle County. Additionally, the association sells water to McKee Water Works, City of Beattyville and Rockcastle County Water Association. Jackson County Water Association has a plant that has a production capacity of 1 million gallons per day. On an average day the plant produces approximately 774,726 gallons of potable water or about 77% of its design capacity. The plant has the storage capacity of 410,000 gallons of water in their 5 water tanks and 190,000 gallons of water for its clear well.

**MCKEE WATER WORKS**

PWSID: ..... 0550784  
 System Type: ..... COMMUNITY  
 Owner Type: ..... MUNICIPAL  
 Surface Source: ..... MCKEE RESERVOIR  
 Purchase Source: ..... JACKSON COUNTY WATER ASSOCIATION  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD): ..... 0.29  
 Percent Daily Average Production: ..... 47.00

Total Tank Storage Capacity (gallons): .....	100,000.00
Total Service Connections: .....	690.00
Number of Employees:.....	10.00
Treatment Operator Class: .....	2D
Distribution Operator Class:.....	2A
Customer Rate for 1,000 Gallons:.....	9.50
O/M costs 1997:.....	Not available
O/M costs per Service Connection: .....	Not available
Net Revenue 1997: .....	Not available
Total Water Produced 1997 (gallons):.....	Not available
Water Sold 1997 (gallons):.....	Not available
Unaccounted-for Water 1997 (%): .....	Not available

McKee Water Works acquires water from McKee Reservoir (Bills Branch). According to the Jackson County Water Supply Plan this source is not an adequate source to provide potable water for future needs. This water system services 568 residential, 79 commercial, 2 industrial and 40 other customers. This system has entered into a trade agreement with Jackson County Water Association and purchases water via a master meter owned by Jackson County Water Association. The water plant has the production capacity of 300,000 gallons per day. On an average day the plant produces about 145,000 gallons of potable water or about 48% of its design capacity. The plant has the storage capacity of 100,300 gallons for their two underground storage tanks and 37,000 gallons of water for their clear well. The amount charged is \$9.25 for the basic usage of 1,000 gallons of water inside the city limits and \$9.75 is for the basic usage of 1,000 gallons of water outside the city limits.

## PRIVATE DOMESTIC SYSTEMS

About 1,900 people in Jackson County rely on private domestic water supplies: 1,350 on wells, and 550 on other sources.

In northern and western Jackson county most wells in the valley bottoms are located in limestone formations which in this area are adequate for domestic use. In the central and eastern parts of the county most drilled wells in the valley bottoms are set in sandstone, which usually produce enough water for domestic use. Most wells on hillsides produce enough water for domestic use and about half the wells drilled on hilltops and ridges are adequate for domestic use. In far eastern Jackson County, water becomes more scarce with only some wells in the valleys and a few well on the ridges able to produce enough water for domestic use.

Most well water in Jackson County is moderately hard and contains noticeable amounts of iron. Some wells in Station Camp Creek valley produce very hard water that may contain hydrogen sulfide in objectionable quantities. Salt water can also be found at depths of 100 feet and greater below the principal valley bottoms in eastern, northern and western Jackson County.

A few springs supply sufficient quantities of water for domestic use. Most springs yield less than 5gpm except in the northern and western parts of Jackson County where limestone springs producing up to 100 gpm can be found.

## KNOX COUNTY

### (Knox County Water Service Area Map)

- Estimated 1999 population of 31,400--65% on public water
- Estimated 2020 population of 34,800--83% on public water
- 355 miles of water lines, with plans for 320 additional miles
- Estimated funding needs for public water 2000-2005-none
- Estimated funding needs for public water 2006-2020-\$23,150,000

Knox County had an estimated population of 31,443 (12,497 households) in 1999 with a projected population of 34,776 (15,081 households) in 2020. Public water is provided to about 65 percent of the county's residents. In areas of the county not served by public water, about 95 percent of the households rely on private domestic wells and 5 percent of the households rely on other sources. About 2,730 customers will be added to public water service through new line extensions in 2000-2020.

### *Estimated Costs - Proposed Projects, 2006-2020*

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/ Pumps	Total
	Miles	Number	Cost in \$1000	in \$1000	in \$1000	in \$1000	in \$1000	in \$1000
KNOX								-
East Knox W/D	48	717	2,500				1,600	4,100
Dewitt W/D	130	669	7,500				2,000	9,500
Laurel Co. W/D #2	6.5	45	320				230	550
Barbourville	137	1,300	7,000				2,000	9,000
Total	321.5	2,731	17,320				5,830	23,150

### PUBLIC WATER SYSTEMS

Knox County has 3 public water systems: 1 municipal, Barbourville Utility Commission; 2 water districts, Dewitt Water District and East Knox County Water District. The county is also served by Corbin Utilities Commission and Laurel Water District II.

### **BARBOURVILLE WATER & ELECTRIC**

PWSID: ..... 0610016  
 System Type: ..... COMMUNITY  
 Owner Type: ..... MUNICIPAL  
 Surface Source: ..... LAUREL LAKE  
 Purchase Source:  
 Well Source:  
 Sells Water to: ..... EAST KNOX WATER DISTRICT  
 Treatment Plant Capacity (MGD): ..... 4.00

# WATER SERVICE AREAS

## KNOX 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/>

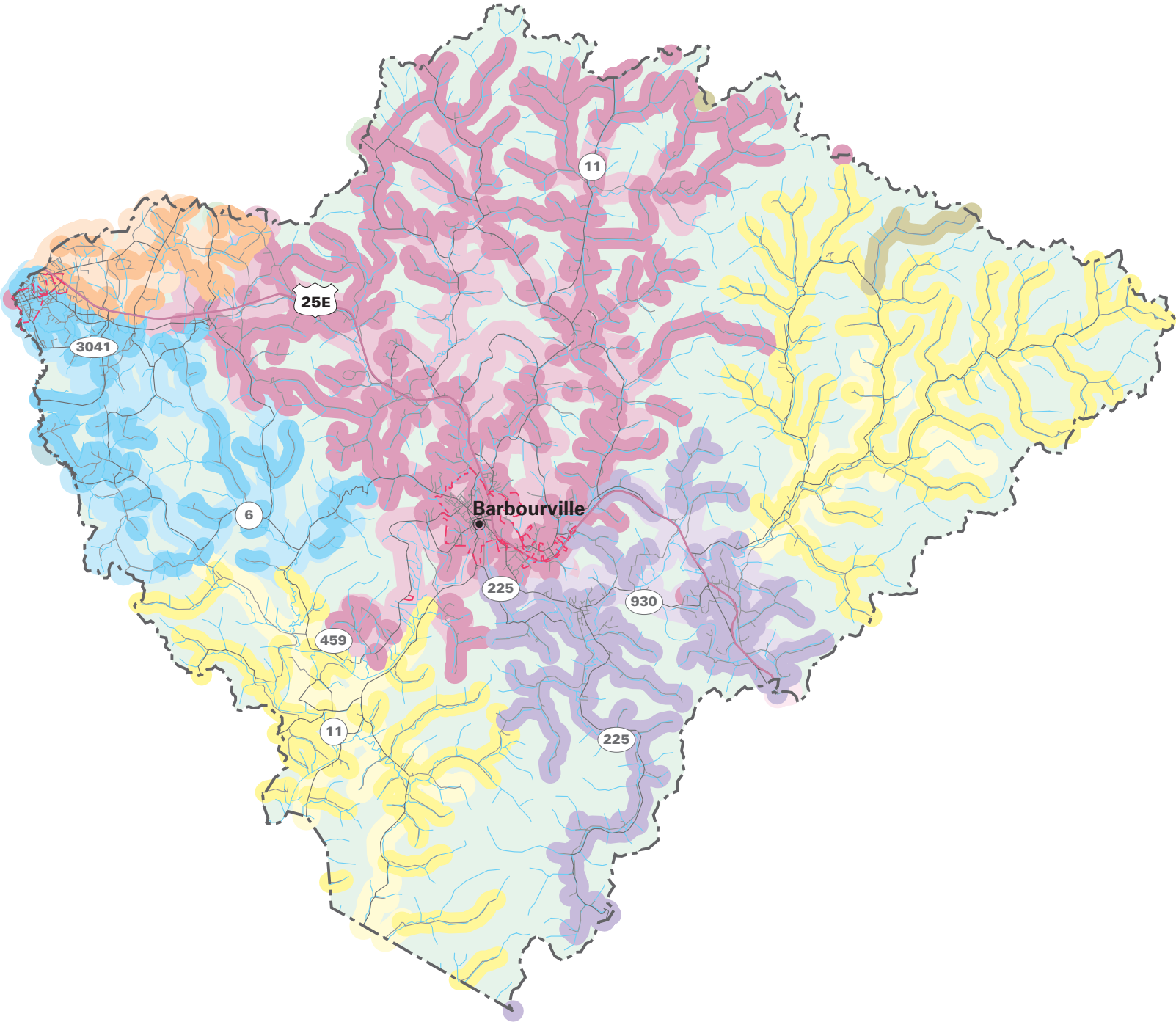
Bob Arnold, Chairman  
Lawrence Wetherby, Executive Director

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

Data Collection & GIS Input By:  
Kentucky Area Development Districts



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#### WATER SERVICE STATUS BY OWNER

EXISTING SERVICE AREA	PROPOSED SERVICE AREA	
		WHITLEY COUNTY WATER DISTRICT #1
		PINEVILLE WATER SYSTEM
		MANCHESTER WATER WORKS
		LAUREL COUNTY WATER DISTRICT #2
		EAST LAUREL WATER DISTRICT
		EAST KNOX WATER DISTRICT
		DEWITT WATER DISTRICT
		CORBIN UTILITIES COMMISSION
		BARBOURVILLE WATER & ELECTRIC



Percent Daily Average Production:	34.00
Total Tank Storage Capacity (gallons):	3,160,000.00
Total Service Connections:	5,000.00
Number of Employees:	10.00
Treatment Operator Class:	2D
Distribution Operator Class:	4A
Customer Rate for 1,000 Gallons:	5.00
O/M costs 1997:	Not available
O/M costs per Service Connection:	Not available
Net Revenue 1997:	Not available
Total Water Produced 1997 (gallons):	Not available
Water Sold 1997 (gallons):	Not available
Unaccounted-for Water 1997 (%):	Not available

Barbourville Utility commission gets its water from Laurel Lake in Laurel County and nearby Cumberland River, and according to the Knox County Water Supply Plan this system has an adequate supply of raw water to support any future needs. This system currently services 4,285 residential and 514 commercial customers. Additionally, this system sells water to East Knox County Water District. Barbourville Utility Commission has a plant that has a production capacity of 4 million gallons per day. On an average day the plant produces approximately 1.5 million gallons of potable water or about 37% of its design capacity. The total storage capacity for this system is 3,160,000 gallons of water in 9 water tanks located throughout the county and approximately 909,000 gallons of water in their clear well. \$5.00 is the amount paid for the base usage of 1,000 gallons.

#### **DEWITT WATER DISTRICT**

PWSID:	0610791
System Type:	COMMUNITY
Owner Type:	WATER DISTRICT
Surface Source:	
Purchase Source:	EAST KNOX COUNTY WATER DISTRICT
Well Source:	
Sells Water to:	
Treatment Plant Capacity (MGD):	0.00
Percent Daily Average Production:	0.00
Total Tank Storage Capacity (gallons):	200,000.00
Total Service Connections:	534.00
Number of Employees:	9.00
Treatment Operator Class:	2D
Distribution Operator Class:	
Customer Rate for 1,000 Gallons:	4.91
O/M costs 1997:	96,797.00
O/M costs per Service Connection:	186.51
Net Revenue 1997:	31,221.00
Total Water Produced 1997 (gallons):	0.00

Water Sold 1997 (gallons): ..... 28,828,000.00  
 Unaccounted-for Water 1997 (%): ..... 24.90

Dewitt Water District acquires water from a trade agreement with East Knox County Water District and City Utilities Commission of Corbin, Kentucky. This water district is a distributor and does not treat raw water. According to the Knox County and Whitley County Water Supply Plans the East Knox County Water District Source and City Utilities Commission of Corbin, Kentucky both have an adequate source to provide potable water for future needs. This water system services 528 residential, 2 commercial and 40 other customers. There are 437 customers in Knox County and there are 97 customers in Whitley County. The storage capacity for this plant is 200,000 gallons of water for their one tank.

### **EAST KNOX WATER DISTRICT**

PWSID: ..... 0610110  
 System Type: ..... COMMUNITY  
 Owner Type: ..... WATER DISTRICT  
 Surface Source: ..... CUMBERLAND RIVER  
 Purchase Source: ..... BARBOURVILLE UTILITY COMMISSION  
 Well Source:  
 Sells Water to: ..... DEWITT WATER DISTRICT  
 Treatment Plant Capacity (MGD): ..... 0.37  
 Percent Daily Average Production: ..... 86.00  
 Total Tank Storage Capacity (gallons): ..... 250,000.00  
 Total Service Connections: ..... 1,113.00  
 Number of Employees: ..... 9.00  
 Treatment Operator Class: ..... 2D  
 Distribution Operator Class: ..... 2A  
 Customer Rate for 1,000 Gallons: ..... 5.12  
 O/M costs 1997: ..... 413,564.00  
 O/M costs per Service Connection: ..... 375.63  
 Net Revenue 1997: ..... 95,956.00  
 Total Water Produced 1997 (gallons): ..... 117,821,800.00  
 Water Sold 1997 (gallons): ..... 85,935,500.00  
 Unaccounted-for Water 1997 (%): ..... 24.25

East Knox County Water District gets its water from the nearby Cumberland River, and according to the Knox County Water Supply Plan this district has an adequate supply of raw water to support any future needs. This district also purchases water from Barbourville Utility Commission through a master meter owned by Barbourville Utility Commission. This system currently services 1,088 residential, 18 commercial and 7 other customers. Additionally, this system sells water to the Dewitt Water District. Barbourville Utility Commission has a plant that has a production capacity of 368,000 gallons per day. On an

average day the plant produces approximately 325,000 gallons of potable water or about 88% of its design capacity. This district has the storage capacity of 250,000 gallons of water for their two tanks located in the county and 60,000 gallons of water for their clear well capacity.

## **PRIVATE DOMESTIC SYSTEMS**

About 10,800 residents of Knox County rely on private domestic water supplies: 10,300 on wells and 500 on other sources.

Most wells in valley bottoms produce adequate amounts of water for domestic supply. Fewer than half of the wells drilled on hillsides are adequate for a domestic supply. Wells on hilltops and ridges yield smaller quantities of water.

Most of the water from drilled wells is extremely hard and contains noticeable amounts of iron. Salty water may be found in wells drilled into bedrock less than 100 feet below the level of the principal valley bottoms. Water quality and quantity is slightly better in the far eastern end of the county with the potential for drilled wells more than 200 feet deep in valleys may yield enough water for small municipal or industrial supplies.

A few springs supply sufficient quantities of water for domestic use. Almost all springs yield less than 5gpm.

## LAUREL COUNTY

### (Laurel County Water Service Area Map)

- Estimated 1999 population of 51,500--90% on public water
- Estimated 2020 population of 64,600--93% on public water
- 840 miles of water lines, with plans for 255 additional miles
- Estimated funding needs for public water 2000-2005--\$7,866,000
- Estimated funding needs for public water 2006-2020-\$17,377,000

Laurel County had an estimated population of 51,501 (19,823 households) in 1999 with a projected population of 64,598 (26,437 households) in 2020. Public water is provided to about 90 percent of the county's residents. In areas of the county not served by public water, about 90 percent of the households rely on private domestic wells and 10 percent of the households rely on other sources. About 755 customers will be added to public water service through new line extensions in 2000-2020.

#### *Estimated Costs - Proposed Projects, 2000-2005*

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/Pumps	Total
	Miles	Number	Cost in \$1000	In \$1000	in \$1000	in \$1000	in \$1000	in \$1000
<b>LAUREL</b>								-
Wood Creek	27	130	1,350				500	1,850
East Laurel W/D				686				686
West Laurel W/A	12	111	600				1,100	1,700
Laurel Co. W/D #2	2	20	60			3,570		3,630
London Utility Commission								-
<b>Total</b>	<b>41</b>	<b>261</b>	<b>2,010</b>	<b>686</b>		<b>3,570</b>	<b>1,600</b>	<b>7,866</b>

#### *Estimated Costs - Proposed Projects, 2006-2020*

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/Pumps	Total
	Miles	Number	Cost in \$1000	in \$1000	in \$1000	in \$1000	in \$1000	in \$1000
<b>LAUREL</b>								-
Wood Creek	41	158	2,050				600	2,650
East Laurel	102	94	5,000				1,500	6,500
West Laurel	50	135	2,500				600	3,100
Laurel Co. W/D #2	22	105	1,300				300	1,600
London Utility Comm.				2,767			760	3,527
<b>Total</b>	<b>215</b>	<b>492</b>	<b>10,850</b>	<b>2,767</b>			<b>3,760</b>	<b>17,377</b>

### PUBLIC WATER SYSTEMS

Laurel County has 5 public or sem-public water systems: 5 community systems--1 municipal, London Utility Commission; 3 water districts, Wood Creek Water District, Laurel Water

# WATER SERVICE AREAS

## LAUREL 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/>

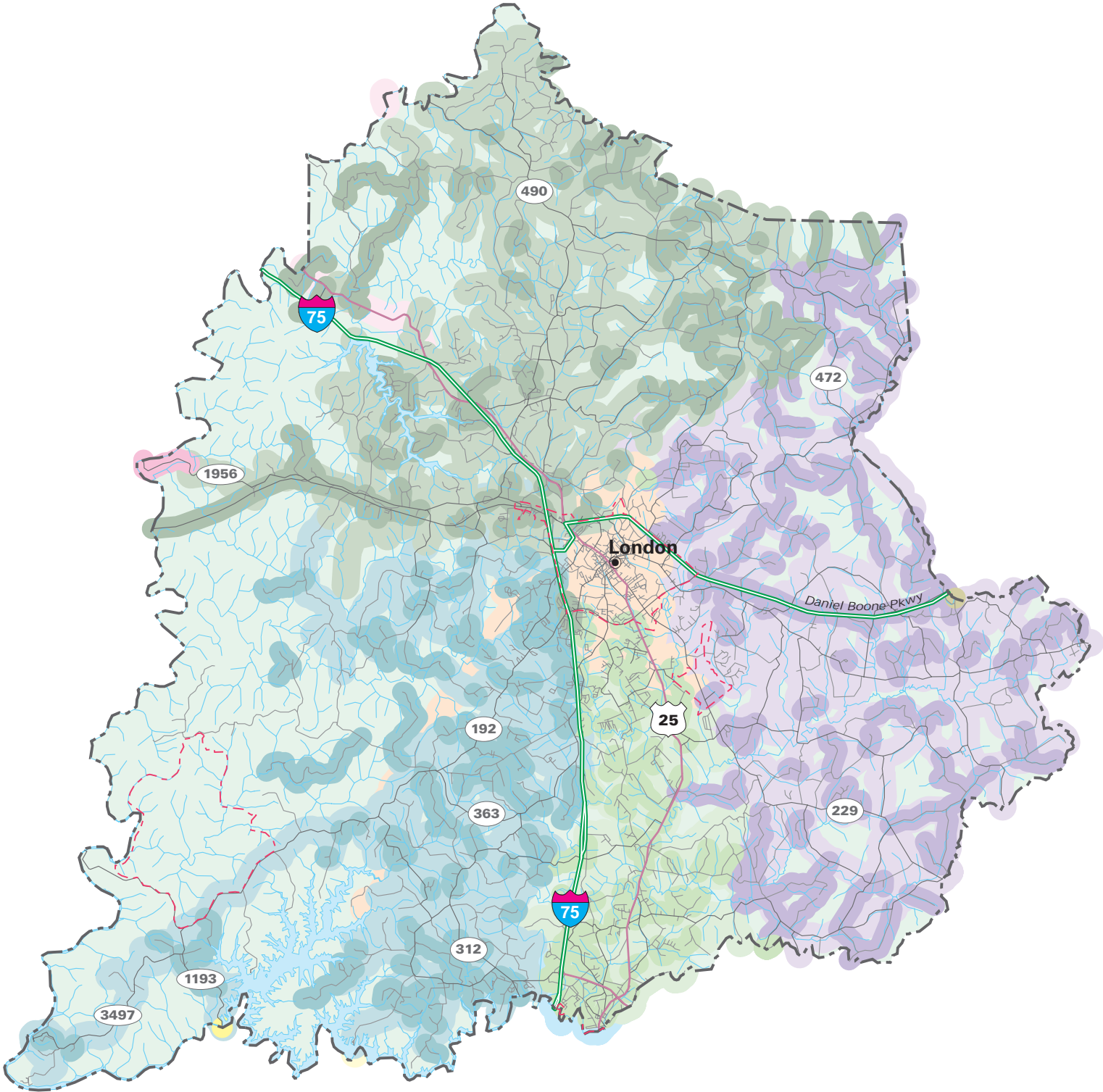
Bob Arnold, Chairman  
Lawrence Wetherby, Executive Director

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

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.



#### WATER SERVICE STATUS BY OWNER

EXISTING SERVICE AREA	PROPOSED SERVICE AREA	
		WOOD CREEK WATER DISTRICT
		WEST LAUREL WATER ASSOCIATION INCORPORATED
		ROCKCASTLE COUNTY WATER ASSOCIATION
		MANCHESTER WATER WORKS
		LONDON UTILITY COMMISSION
		LAUREL COUNTY WATER DISTRICT #2
		EAST LAUREL WATER DISTRICT
		CUMBERLAND FALLS HIGHWAY WATER DISTRICT
		CORBIN UTILITIES COMMISSION
		BARBOURVILLE WATER & ELECTRIC

District #2, East Laurel Water District; 1 water association, West Laurel Water Association-- and 1 non-community system. The county is also served by the Corbin Utilities Commission.

### **LONDON UTILITY COMMISSION**

PWSID: ..... 0630255  
 System Type:..... COMMUNITY  
 Owner Type:..... WATER DISTRICT  
 Surface Source:..... CITY OF LONDON RESERVOIR  
 Purchase Source: ..... LAUREL COUNTY WATER DISTRICT II  
 Well Source:  
 Sells Water to: ..... LONDON UTILITY COMMISSION  
 Treatment Plant Capacity (MGD):..... 3.00  
 Percent Daily Average Production:..... 62.00  
 Total Tank Storage Capacity (gallons): ..... 2,420,000.00  
 Total Service Connections: ..... 3,593.00  
 Number of Employees:..... 28.00  
 Treatment Operator Class:.....2D  
 Distribution Operator Class:.....4A  
 Customer Rate for 1,000 Gallons:..... 4.30  
 O/M costs 1997:.....Not available  
 O/M costs per Service Connection: .....Not available  
 Net Revenue 1997:.....Not available  
 Total Water Produced 1997 (gallons):.....Not available  
 Water Sold 1997 (gallons):.....Not available  
 Unaccounted-for Water 1997 (%): .....Not available

The London Utility Commission currently withdraws water from the Laurel River Lake, and the City of London owns a small reservoir. According to the Laurel County Water Supply Plan, this supply should be adequate until the year 2020. This system currently sells to 2,904 residential customers, 683 commercial customers and six industrial customers, as well as to Laurel Water District # 2. The London Utility Commission is permitted to withdraw 2.3 million gallons per day from Laurel River Lake. The water treatment plant has a capacity of 3.0 million gallons per day. The plan is operating at 59% capacity, producing an average of 1.77 million gallons per day. The London Utility Commission has five storage tanks and one clear well for a total system storage capacity of 2.416 million gallons. The London Utility Commission currently does not withdraw water from the water reservoir, which has a capacity of 576,000 gallons per day. The current base rate for London Utility Commission is \$6.88 for the first 2,000 gallons and \$10.32 per 2,000 outside the city limits.

**LAUREL COUNTY WATER DISTRICT #2**

PWSID: ..... 0630238  
 System Type: ..... COMMUNITY  
 Owner Type: ..... WATER DISTRICT  
 Surface Source: ..... DORTHAEL LAKE  
 Purchase Source:  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD): ..... 1.44  
 Percent Daily Average Production: ..... 79.00  
 Total Tank Storage Capacity (gallons): ..... 2,350,000.00  
 Total Service Connections: ..... 4,366.00  
 Number of Employees: ..... 16.00  
 Treatment Operator Class: ..... 2D  
 Distribution Operator Class: ..... 3A  
 Customer Rate for 1,000 Gallons: ..... 3.14  
 O/M costs 1997: ..... 733,690.00  
 O/M costs per Service Connection: ..... 169.09  
 Net Revenue 1997: ..... 52,428.00  
 Total Water Produced 1997 (gallons): ..... 333,509,800.00  
 Water Sold 1997 (gallons): ..... 313,465,000.00  
 Unaccounted-for Water 1997 (%): ..... 12.55

Laurel Water District #2 can withdraw 1.44 million gallons per day from Lake Dorthae, which has a capacity of 3.0 million gallons per day. According to the Laurel County Water Supply Plan, this supply is adequate. This system has a treatment plant with a capacity of 1.44 million gallons per day, and produces .999 million gallons per day or 69% of capacity. Laurel Water District # 2 also purchases 65,000 gallons per day from the London Utility Commission. The system has five storage tanks and one clear well, totaling 2.35 million gallons storage. Laurel Water District # 2 serves 3,854 customers in Laurel County and 512 customers in Knox County (total of 4,366 customers). There are 4,068 residential customers, 298 commercial customers and one industrial customer on the system.

**WOOD CREEK WATER DISTRICT**

PWSID: ..... 0630477  
 System Type: ..... COMMUNITY  
 Owner Type: ..... WATER DISTRICT  
 Surface Source: ..... WOOD CREEK  
 Purchase Source: ..... EAST LAUREL WATER DISTRICT  
 Well Source:  
 Sells Water to: ..... WOOD CREEK WATER DISTRICT  
 Treatment Plant Capacity (MGD): ..... 4.32  
 Percent Daily Average Production: ..... 67.00  
 Total Tank Storage Capacity (gallons): ..... 1,050,000.00  
 Total Service Connections: ..... 4,142.00  
 Number of Employees: ..... 30.00

Treatment Operator Class: .....	2D
Distribution Operator Class: .....	4A
Customer Rate for 1,000 Gallons: .....	3.58
O/M costs 1997: .....	1,258,791.00
O/M costs per Service Connection: .....	303.91
Net Revenue 1997: .....	269,394.00
Total Water Produced 1997 (gallons): .....	909,769,000.00
Water Sold 1997 (gallons): .....	766,412,000.00
Unaccounted-for Water 1997 (%): .....	7.45

Wood Creek Water District can withdraw 3.5 million gallons per day from Wood Creek Lake, which has a capacity of 12.0 million gallons per day. According to the Laurel County Water Supply Plan, their supply is adequate. They only withdraw 2.5 million gallons per day. Wood Creek Water District serves 4,077 customers in Laurel County and 65 customers in Jackson County. There are 3,915 residential, 224 commercial and three other customers currently on this system. The water treatment plant has a capacity of 4.32 MDG, but only produces 1.64 million gallons per day, or 38% of capacity. The system has four storage tanks totaling 1.05 million gallons. Wood Creek Water District sells water to East Laurel Water District and West Laurel Water Association.

#### **EAST LAUREL WATER DISTRICT**

PWSID: .....	0630797
System Type: .....	COMMUNITY
Owner Type: .....	WATER DISTRICT
Surface Source:	
Purchase Source: .....	WOOD CREEK WATER DISTRICT
Well Source:	
Sells Water to: .....	HIMA SIBERT WATER DISTRICT
Treatment Plant Capacity (MGD): .....	0.00
Percent Daily Average Production: .....	0.00
Total Tank Storage Capacity (gallons): .....	1,100,000.00
Total Service Connections: .....	3,461.00
Number of Employees: .....	0.00
Treatment Operator Class: .....	2D
Distribution Operator Class:	
Customer Rate for 1,000 Gallons: .....	4.42
O/M costs 1997: .....	669,652.00
O/M costs per Service Connection: .....	193.49
Net Revenue 1997: .....	43,630.00
Total Water Produced 1997 (gallons): .....	0.00
Water Sold 1997 (gallons): .....	208,678,700.00
Unaccounted-for Water 1997 (%): .....	11.12

East Laurel Water District buys finished water from Wood Creek Water District. East Laurel Water District has four tanks totaling 1.1 million gallons of storage. East Laurel Water

District sells water to Hima-Sibert Water District in Clay County. This system covers parts of Laurel and Clay Counties. There are 3,393 customers in Laurel County and 68 in Clay County. East Laurel Water District has 3,360 residential customers, 100 commercial customers, and one other customer. The system does not produce any water.

#### **WEST LAUREL WATER ASSOCIATION INCORPORATED**

PWSID:..... 0630451  
 System Type:..... COMMUNITY  
 Owner Type:..... WATER ASSOCIATION  
 Surface Source:  
 Purchase Source: .....WOOD CREEK WATER DISTRICT  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD):..... 0.00  
 Percent Daily Average Production:..... 0.00  
 Total Tank Storage Capacity (gallons):..... 200,000.00  
 Total Service Connections: ..... 3,642.00  
 Number of Employees:..... 0.00  
 Treatment Operator Class: .....2D  
 Distribution Operator Class:  
 Customer Rate for 1,000 Gallons:..... 4.38  
 O/M costs 1997:..... 694,648.00  
 O/M costs per Service Connection: ..... 190.73  
 Net Revenue 1997:..... 71,269.00  
 Total Water Produced 1997 (gallons):..... 0.00  
 Water Sold 1997 (gallons):..... 213,675,300.00  
 Unaccounted-for Water 1997 (%): ..... 10.08

The West Laurel Water Association buys finished water from Wood Creek Water District. This system has a total of 600,000 gallons of storage in three water tanks. West Laurel Water Association has 3,584 residential customers, 57 commercial customers, and one other customer.

#### **OTHER SYSTEMS**

##### **CURRY OIL COMPANY/BITTERSWEET SHELL**

Curry Oil Company/Bittersweet Shell is located in Laurel County. The system serves a population of 15 and has 3 service connections. The private, transient, non-community system water source is wells.

## **PRIVATE DOMESTIC SYSTEMS**

About 4,970 people in Laurel County rely on private domestic water supplies: about 4,470 on wells, and 500 on other sources.

Some of the drilled wells in valley bottoms and a few wells on hillsides and ridges in the eastern third and northwestern quarter of Laurel County are adequate for domestic supply. In the rest of the county more than three-quarters of the drilled wells in valleys and most of the wells on hillsides and about half the wells on ridges are adequate for a domestic supply. This area also has the ability for deep penetrating wells with greater than 500 feet of sandstone to yield enough water for small municipal or industrial supplies.

Water obtained from most wells in this area is soft or moderately hard and contains noticeable amounts of iron. Only occasionally is salty water found in drilled wells in this area.

A few springs supply sufficient quantities of water for domestic use. Almost all springs yield less than 5gpm.

## ROCKCASTLE COUNTY

### (Rockcastle County Water Service Area Map)

- Estimated 1999 population of 15,900--82% on public water
- Estimated 2020 population of 17,100--100% on public water
- 360 miles of water lines, with plans for 220 additional miles
- Estimated funding needs for public water 2000-2005--none
- Estimated funding needs for public water 2006-2020--\$19,740,000

Rockcastle County had an estimated population of 15,887 (6,347 households) in 1999 with a projected population of 17,091 (7,541 households) in 2020. Public water is provided to about 82 percent of the county's residents. In areas of the county not served by public water, about 40 percent of the households rely on private domestic wells and 60 percent of the households rely on other sources. Virtually 100% of the county will be on public water service after new line extensions in 2000-2020.

### *Estimated Costs - Proposed Projects, 2006-2020*

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/ Pumps	Total
	Miles	Number	Cost in \$1000	in \$1000	in \$1000	in \$1000	in \$1000	in \$1000
<b>ROCKCASTLE</b>								-
Livingston W/D	1.7	21	80					80
Mt. Vernon W/W	32	271	1,600				1,100	2,700
Rockcastle Water Assoc.	156.3	1,273	7,900				5,500	13,400
Western Rockcastle	29	808	1,500				2,060	3,560
<b>Total</b>	<b>219</b>	<b>2,373</b>	<b>11,080</b>				<b>8,660</b>	<b>19,740</b>

### PUBLIC WATER SYSTEMS

Rockcastle County has 6 community water systems: 3 municipal, Brodhead Water Works, Livingston Municipal Water Works, and Mt. Vernon Water Works; 2 water associations, Rockcastle County Water Association and Western Rockcastle County Water Association; and 1 water district, Northern Rockcastle County Water District.

### **BRODHEAD WATER WORKS**

PWSID: ..... 1020889  
 System Type: ..... COMMUNITY  
 Owner Type: ..... MUNICIPAL  
 Surface Source:  
 Purchase Source: ..... MOUNT VERNON WATER WORKS  
 Well Source:

Sells Water to:  
 Treatment Plant Capacity (MGD):..... 0.00  
 Percent Daily Average Production:..... 0.00  
 Total Tank Storage Capacity (gallons):..... 125,000.00  
 Total Service Connections: ..... 501.00  
 Number of Employees:..... 2.00  
 Treatment Operator Class: .....2D  
 Distribution Operator Class:  
 Customer Rate for 1,000 Gallons:..... 5.69  
 O/M costs 1997:.....Not available  
 O/M costs per Service Connection: .....Not available  
 Net Revenue 1997:.....Not available  
 Total Water Produced 1997 (gallons):.....Not available  
 Water Sold 1997 (gallons):.....Not available  
 Unaccounted-for Water 1997 (%): .....Not available

Brodhead Water Works buys water from Mt. Vernon Water Works. This system currently serves 485 residential customers, 15 commercial customers and one industrial customer. The storage capacity of this system is 125,000 gallons of water in their two tanks. The base charge is \$9.75 per 2,000 gallons inside the city limits and \$13.00 per 2,000 gallons of water outside the city limits.

#### **LIVINGSTON MUNICIPAL WATER WORKS**

PWSID:..... 1020253  
 System Type:..... COMMUNITY  
 Owner Type: ..... MUNICIPAL  
 Surface Source:..... ROUNDSTONE CREEK  
 Purchase Source: .....WOOD CREEK WATER DISTRICT  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD):..... 0.00  
 Percent Daily Average Production:..... 0.00  
 Total Tank Storage Capacity (gallons):..... 72,000.00  
 Total Service Connections: ..... 195.00  
 Number of Employees:..... 1.00  
 Treatment Operator Class: ..... 1D  
 Distribution Operator Class:.....2A  
 Customer Rate for 1,000 Gallons:..... 6.75  
 O/M costs 1997:.....Not available  
 O/M costs per Service Connection: .....Not available  
 Net Revenue 1997:.....Not available  
 Total Water Produced 1997 (gallons):.....Not available  
 Water Sold 1997 (gallons):.....Not available  
 Unaccounted-for Water 1997 (%): .....Not available

Livingston Municipal Water Works purchases water from Wood Creek Water District. This system currently serves 195 residential customers. The base charge is \$13.50 for the first

2,000 gallons of water. This system currently has one storage tank with a storage capacity of 72,000 gallons of water. The water source is Roundstone Creek.

### **MOUNT VERNON WATER WORKS**

PWSID: ..... 1020299  
 System Type: ..... COMMUNITY  
 Owner Type: ..... MUNICIPAL  
 Surface Source: ..... LAKE LINVILLE  
 Purchase Source:  
 Well Source:  
 Sells Water to: ..... ROCKCASTLE COUNTY WATER ASSOCIATION  
 Treatment Plant Capacity (MGD): ..... 4.00  
 Percent Daily Average Production: ..... 86.00  
 Total Tank Storage Capacity (gallons): ..... 1,375,000.00  
 Total Service Connections: ..... 1,900.00  
 Number of Employees: ..... 9.00  
 Treatment Operator Class: ..... 2D  
 Distribution Operator Class: ..... 3A  
 Customer Rate for 1,000 Gallons: ..... 4.09  
 O/M costs 1997: ..... Not available  
 O/M costs per Service Connection: ..... Not available  
 Net Revenue 1997: ..... Not available  
 Total Water Produced 1997 (gallons): ..... Not available  
 Water Sold 1997 (gallons): ..... Not available  
 Unaccounted-for Water 1997 (%): ..... Not available

Mt. Vernon Water Works acquires water from Lake Linville. According to the Rockcastle County Water Supply Plan, Lake Linville has an adequate supply of raw water to support future needs. This system currently serves 1,786 residential, 256 commercial customers, five industrial customers and three institutional customers. This system sells treated water to Brodhead Water Works, Rockcastle County Water Association and Western Rockcastle County Water Association. The water treatment plant has the total production capacity of 4 million gallons of water per day. On an average day, the plant treats 1,334,362 or about 33% of its designed capacity. The total storage capacity for the five tanks is 1.375 million gallons. The basic rate charged is \$6.76 per 2,000 gallons of water inside the city limits and \$9.60 per 2,000 gallons of water outside the city limits.

### **ROCKCASTLE COUNTY WATER ASSOCIATION**

PWSID: ..... 1020288  
 System Type: ..... COMMUNITY  
 Owner Type: ..... WATER ASSOCIATION  
 Surface Source:  
 Purchase Source: ..... JACKSON COUNTY WATER ASSOCIATION

Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD):..... 0.00  
 Percent Daily Average Production:..... 0.00  
 Total Tank Storage Capacity (gallons):..... 165,000.00  
 Total Service Connections: ..... 122.00  
 Number of Employees:..... 0.00  
 Treatment Operator Class: ..... 1D  
 Distribution Operator Class:  
 Customer Rate for 1,000 Gallons:..... 7.72  
 O/M costs 1997:..... 17,132.00  
 O/M costs per Service Connection: ..... 145.19  
 Net Revenue 1997: ..... 352.00  
 Total Water Produced 1997 (gallons):..... 0.00  
 Water Sold 1997 (gallons):..... 4,210,400.00  
 Unaccounted-for Water 1997 (%): ..... 12.67

The Rockcastle County Water Association purchases water from Mt. Vernon Water Works and the Jackson County Water Association. This system currently serves 122 residential customers, with 96 being in Rockcastle County and 26 located in Jackson County. This system has two storage tanks that are under construction.

#### **WESTERN ROCKCASTLE WATER ASSOCIATION**

PWSID:..... 1020891  
 System Type:..... COMMUNITY  
 Owner Type: ..... WATER ASSOCIATION  
 Surface Source:  
 Purchase Source: ..... MOUNT VERNON WATER WORKS  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD):..... 0.00  
 Percent Daily Average Production:..... 0.00  
 Total Tank Storage Capacity (gallons):..... 700,000.00  
 Total Service Connections: ..... 4,482.00  
 Number of Employees:..... 0.00  
 Treatment Operator Class: ..... 2D  
 Distribution Operator Class:  
 Customer Rate for 1,000 Gallons:..... 4.34  
 O/M costs 1997:..... 395,569.00  
 O/M costs per Service Connection: ..... 176.75  
 Net Revenue 1997: ..... 33,281.00  
 Total Water Produced 1997 (gallons):..... 0.00  
 Water Sold 1997 (gallons):..... 125,039,200.00  
 Unaccounted-for Water 1997 (%): ..... 8.52

The Western Rockcastle Water Association purchases water from Mt. Vernon Water Works. They serve 2,235 residential customers, with 1,699 in Rockcastle County, 447 in

Lincoln County, 78 in Pulaski County, 12 in Madison County and 11 in Garrard County. This association has eight storage tanks with a capacity of 700,000 gallons of water.

#### **NORTHERN ROCKCASTLE COUNTY WD**

Northern Rockcastle County WD is located in Rockcastle County. The system serves a population of 2,657 and has 805 service connections. The district's water source is Mt Vernon Water Works. The charge for the first 5,000 gallons of water was \$25.73. The system purchased 66,463,000 gallons and sold 44,231,700 gallons for 1997. Overall system losses were 15.4% for the same period.

#### **PRIVATE DOMESTIC SYSTEMS**

About 2,800 people in Rockcastle County rely on private domestic water supplies: 1,100 on wells and 1,700 on other sources.

In the eastern half of the county, most of the wells drilled in valley bottoms are adequate for a domestic supply. About half the wells drilled on hillsides are adequate for a domestic supply. Wells on ridges and hills yield smaller quantities of water. In the western half of the county, fewer than half the wells drilled in valley bottoms are adequate for a domestic supply except where limestone is the predominant rock. In limestone rich areas, three-quarters of the wells drilled in the valleys or uplands can produce adequate amounts of water for domestic supplies. Throughout most of the county, wells on hillsides and ridges generally yield smaller quantities of water than wells drilled in valley bottoms.

Salty water may be found in wells drilled less than 100 feet below the level of the principal valley bottoms. At greater depths no fresh water probably will be found.

Springs in limestone may supply enough water for domestic use.

## WHITLEY COUNTY

### (Whitley County Water Service Area Map)

- Estimated 1999 population of 34,900--60% on public water
- Estimated 2020 population of 37,500--87% on public water
- 325 miles of water lines, with plans for 560 additional miles
- Estimated funding needs for public water 2000-2005--none
- Estimated funding needs for public water 2006-2020--\$60,100,000

Whitley County had an estimated population of 34,898 (14,154 households) in 1999 with a projected population of 37,508 (16,392 households) in 2020. Public water is provided to about 60 percent of the county's residents. In areas of the county not served by public water, about 93 percent of the households rely on private domestic wells and 7 percent of the households rely on other sources. About 4,370 customers will be added to public water service through new line extensions in 2000-2020.

### ESTIMATED COSTS - PROPOSED PROJECTS, 2006-2020

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/Pumps	Total
	Miles	Number	Cost in \$1000	in \$1000	in \$1000	in \$1000	in \$1000	in \$1000
<b>Whitley</b>								-
Cumberland Falls Hwy W/D	209	1,435	11,000			10,000	8,000	29,000
Pineville Utility	21	175	1,000				1,800	2,800
Corbin Utilities Comm.	51	545	2,500				1,800	4,300
Whitley Co. W/D	281	2,214	14,000				10,000	24,000
<b>Total</b>	<b>562</b>	<b>4,369</b>	<b>28,500</b>			<b>10,000</b>	<b>21,600</b>	<b>60,100</b>

### PUBLIC WATER SYSTEMS

There are 10 public and semi-public water systems in Whitley County: 8 community--2 municipal, City Utilities Commission of Corbin and Williamsburg Municipal; 6 water districts, Cumberland Falls Highway Water District, Whitley County Water District, Whitley County Water Dist/Rockhold, Whitley County Water Dist/Wofford, Whitley County Water/Fairview-Ky Hill, Whitley County Water District #2-- and 2 non-community systems.

# WATER SERVICE AREAS

## WHITLEY 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/>

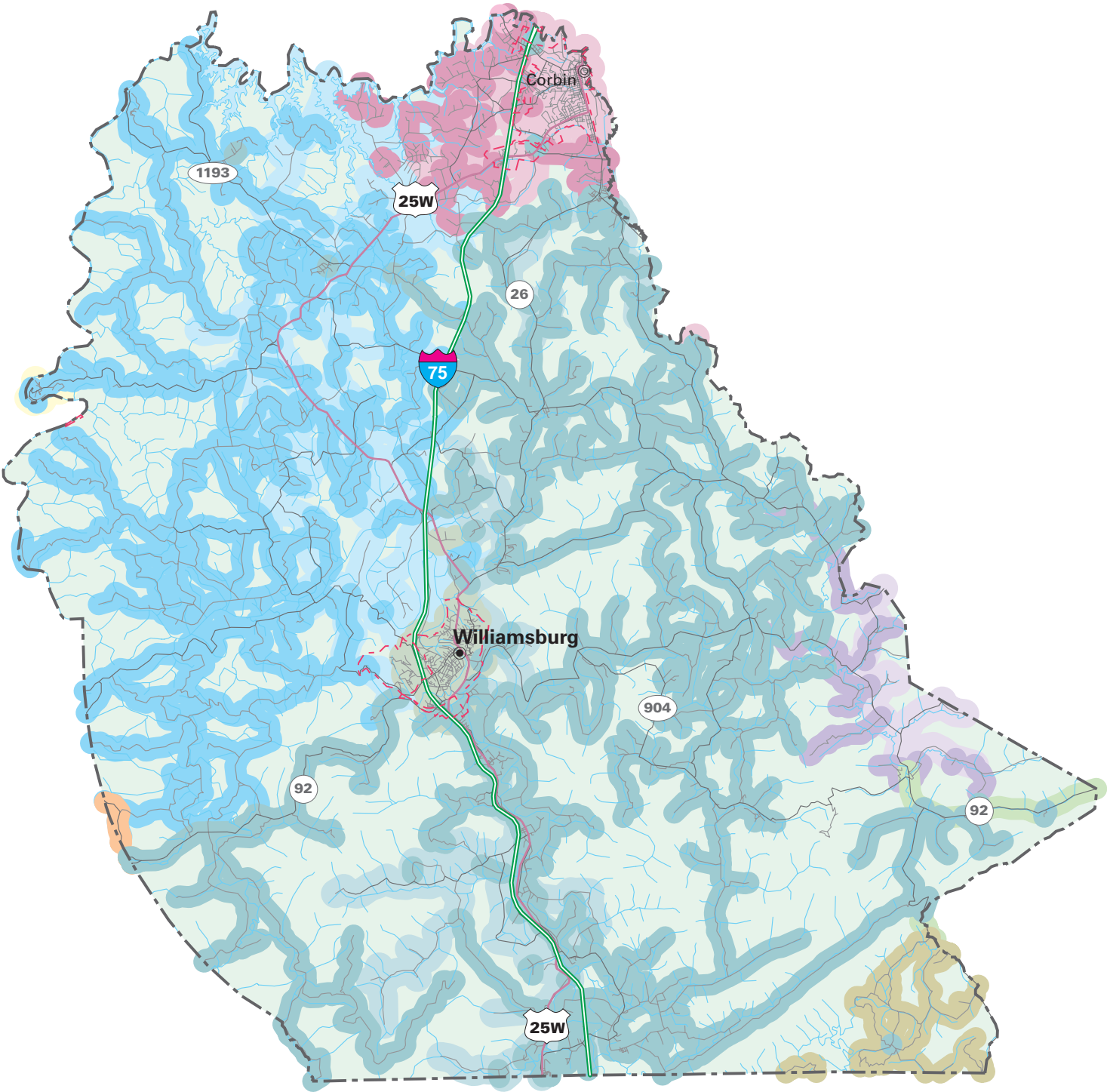
Bob Arnold, Chairman  
Lawrence Wetherby, Executive Director

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

Data Collection & GIS Input By:  
Kentucky Area Development Districts



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#### WATER SERVICE STATUS BY OWNER

EXISTING SERVICE AREA	PROPOSED SERVICE AREA	
		WILLIAMSBURG WATER PLANT
		WHITLEY COUNTY WATER DISTRICT #1
		WEST LAUREL WATER ASSOCIATION INCORPORATED
		PINEVILLE WATER SYSTEM
		MCCREARY COUNTY WATER DISTRICT
		EAST KNOX WATER DISTRICT
		DEWITT WATER DISTRICT
		CUMBERLAND FALLS STATE PARK
		CUMBERLAND FALLS HIGHWAY WATER DISTRICT
		CORBIN UTILITIES COMMISSION

**CUMBERLAND FALLS HIGHWAY WATER DISTRICT**

PWSID: ..... 1180093  
 System Type: ..... COMMUNITY  
 Owner Type: ..... WATER DISTRICT  
 Surface Source:  
 Purchase Source: ..... WEST LAUREL WATER DISTRICT  
 Well Source:  
 Sells Water to: ..... WHITLEY COUNTY WATER DISTRICT #1  
 Treatment Plant Capacity (MGD): ..... 0.00  
 Percent Daily Average Production: ..... 0.00  
 Total Tank Storage Capacity (gallons): ..... 500,000.00  
 Total Service Connections: ..... 1,859.00  
 Number of Employees: ..... 6.00  
 Treatment Operator Class: ..... 2D  
 Distribution Operator Class:  
 Customer Rate for 1,000 Gallons: ..... 8.55  
 O/M costs 1997: ..... 648,949.00  
 O/M costs per Service Connection: ..... 346.66  
 Net Revenue 1997: ..... 75,782.00  
 Total Water Produced 1997 (gallons): ..... 0.00  
 Water Sold 1997 (gallons): ..... 128,958,000.00  
 Unaccounted-for Water 1997 (%): ..... 20.56

Cumberland Falls Highway Water District buys water from City Utilities Commission of Corbin, Kentucky, Williamsburg Municipal and West Laurel Water Association.

Cumberland Falls Highway Water District sells water to the Whitley County Water District. The system serves 1,764 residential customers, 56 commercial customers and five industrial customers. The storage capacity of this system is 500,000 gallons of water in its water storage tank.

**CORBIN UTILITIES COMMISSION**

PWSID: ..... 1180085  
 System Type: ..... COMMUNITY  
 Owner Type: ..... WATER DISTRICT  
 Surface Source: ..... LAUREL RIVER  
 Purchase Source:  
 Well Source:  
 Sells Water to: ..... WHITLEY COUNTY WATER DISTRICT #1  
 Treatment Plant Capacity (MGD): ..... 5.00  
 Percent Daily Average Production: ..... 55.00  
 Total Tank Storage Capacity (gallons): ..... 5,300,000.00  
 Total Service Connections: ..... 5,753.00  
 Number of Employees: ..... 36.00  
 Treatment Operator Class: ..... 3D  
 Distribution Operator Class: ..... 4A  
 Customer Rate for 1,000 Gallons: ..... 3.79  
 O/M costs 1997: ..... Not available

O/M costs per Service Connection: ..... Not available  
 Net Revenue 1997: ..... Not available  
 Total Water Produced 1997 (gallons): ..... Not available  
 Water Sold 1997 (gallons): ..... Not available  
 Unaccounted-for Water 1997 (%): ..... Not available

City Utilities Commission of Corbin, Kentucky, gets its water from Laurel River Lake. According to the Whitley County Water Supply Plan, this is an adequate raw water source to support future needs. This system currently serves 4,939 residential customers and 814 commercial customers. Additionally, this system sells water to the Whitley County Water District, Cumberland Falls Highway Water District and Dewitt Water District. This system has a water treatment plant that has a production capacity of 5 million gallons per day. On an average day the plant produces approximately 2.7 million gallons per day or about 54% of its total design capacity. The base charge is \$5.05 for the first 1,000 gallons of water inside the city limits and \$10.10 for the first 1,000 gallons of water for customers outside the city limits. This system currently has seven storage tanks and one clear well that have a total storage capacity of 5.3 million gallons of water.

**WHITLEY COUNTY WATER DISTRICT #1**

PWSID: ..... 1180468  
 System Type: ..... COMMUNITY  
 Owner Type: ..... WATER DISTRICT  
 Surface Source:  
 Purchase Source: ..... CUMBERLAND FALLS HWY WATER DISTRICT  
 Well Source:  
 Sells Water to:  
 Treatment Plant Capacity (MGD): ..... 0.00  
 Percent Daily Average Production: ..... 0.00  
 Total Tank Storage Capacity (gallons): ..... 410,000.00  
 Total Service Connections: ..... 1,606.00  
 Number of Employees: ..... 6.00  
 Treatment Operator Class: ..... 1D  
 Distribution Operator Class:  
 Customer Rate for 1,000 Gallons: ..... 6.24  
 O/M costs 1997: ..... 458,380.00  
 O/M costs per Service Connection: ..... 289.02  
 Net Revenue 1997: ..... 55,734.00  
 Total Water Produced 1997 (gallons): ..... 4,331,000.00  
 Water Sold 1997 (gallons): ..... 87,487,000.00  
 Unaccounted-for Water 1997 (%): ..... 30.70

The Whitley County Water District purchases water from City Utilities Commission of Corbin, Kentucky, Williamsburg Municipal, Cumberland Falls Highway Water District and

from the City of Jellico, TN. This system has a well source of 11,000 gallons of water per day. This system serves 1,523 residential customers and 83 commercial customers in Whitley County. The Whitley County Water District has three water tanks with a total storage capacity of 419,000 gallons of water.

### **WILLIAMSBURG WATER PLANT**

PWSID: ..... 1180471  
 System Type: ..... COMMUNITY  
 Owner Type: ..... MUNICIPAL  
 Surface Source: ..... CUMBERLAND RIVER  
 Purchase Source:  
 Well Source:  
 Sells Water to: ..... WHITLEY COUNTY WATER DISTRICT #1  
 Treatment Plant Capacity (MGD): ..... 2.00  
 Percent Daily Average Production: ..... 62.00  
 Total Tank Storage Capacity (gallons): ..... 2,950,000.00  
 Total Service Connections: ..... 1,681.00  
 Number of Employees: ..... 2.00  
 Treatment Operator Class: ..... 2D  
 Distribution Operator Class: ..... 3A  
 Customer Rate for 1,000 Gallons: ..... 3.95  
 O/M costs 1997: ..... Not available  
 O/M costs per Service Connection: ..... Not available  
 Net Revenue 1997: ..... Not available  
 Total Water Produced 1997 (gallons): ..... Not available  
 Water Sold 1997 (gallons): ..... Not available  
 Unaccounted-for Water 1997 (%): ..... Not available

Williamsburg Municipal gets its water from the Cumberland River, and according to the Whitley County Water Supply Plan this is an adequate source of raw water for future needs. Additionally, this system sells water to Whitley County Water District and Cumberland Falls Highway Water District. This system currently serves 1,363 residential and 318 commercial customers. The water treatment plant has a design capacity of 2 million gallons of water. On an average day, the plant produces 1.44 million gallons of potable water per day or about 72% of its design capacity. This system has six storage tanks and one clear well that have total storage capacity of 2.95 million gallons of water. \$7.90 per 2,000 gallons of water is the base rate for water usage.

**WHITLEY COUNTY WATER DIST/ROCKHOLD**

Whitley County Water Dist/Rockhold is located in Whitley County. The system serves a population of 201 and has 61 service connections. The water district has treatment capacity of 25,000 gallons per day and the water source is wells.

**WHITLEY COUNTY WATER DIST/WOFFORD**

Whitley County Water Dist/Wofford is located in Whitley County. The system serves a population of 686 and has 208 service connections. The water district has treatment capacity of 50,000 gallons per day and storage capacity of 175,000 gallons. The water source is wells.

**WHITLEY COUNTY WATER DISTRICT #2**

Whitley County Water District #2 is located in Whitley County. The system serves a population of 1,890 and has 573 service connections. The water district has treatment capacity of 720,000 gallons per day and the water source is wells.

**WHITLEY COUNTY WATER/FAIRVIEW-KY HILL**

Whitley Water/Fairview-Ky Hill is located in Whitley County. The system serves a population of 360 and has 109 service connections. The water district purchases water from Jellico Tennessee.

**OTHER SYSTEMS**

**CUMBERLAND FALLS STATE PARK**

PWSID:..... 1182561  
System Type:..... NON TRANSIENT NON COMMUNITY  
Owner Type:.....STATE  
Surface Source:..... CUMBERLAND RIVER  
Purchase Source:  
Well Source:  
Sells Water to:  
Treatment Plant Capacity (MGD):..... 0.18  
Percent Daily Average Production:..... 27.00  
Total Tank Storage Capacity (gallons):..... 175,000.00  
Total Service Connections: ..... 65.00  
Number of Employees:..... 3.00  
Treatment Operator Class:.....1D  
Distribution Operator Class:.....2A  
Customer Rate for 1,000 Gallons:.....Not available  
O/M costs 1997:.....Not available

O/M costs per Service Connection: .....Not available  
Net Revenue 1997: .....Not available  
Total Water Produced 1997 (gallons): .....Not available  
Water Sold 1997 (gallons): .....Not available  
Unaccounted-for Water 1997 (%): .....Not available

### **NEVISDALE ELEMENTARY SCHOOL**

Nevisdale Elementary School is located in Whitley County. The system serves a population of 176 and has 2 service connections. The local, non-transient, non-community system has treatment capacity of 10,000 gallons per day and the water source is wells.

### **PRIVATE DOMESTIC SYSTEMS**

About 13,800 residents of Whitley County rely on private domestic water supplies: 12,800 on wells, and 1,000 on other sources.

Most wells drilled in valley bottoms are adequate for a domestic supply. Fewer than half the wells drilled on hillsides are adequate for domestic supply and wells on ridges yield smaller quantities of water. In the western quarter of the county, wells on hillsides commonly produce adequate water for domestic use and half the wells on ridges yield enough water for domestic supply. Deep wells penetrating thick sections of sandstone greater than 500 feet may yield enough water for small utilities or industrial supplies.

Most water obtained from drilled wells is extremely hard and contains noticeable amounts of iron except in the western quarter of the county where the water is soft to moderately hard. Salty water may be found less than 100 feet below the level of the principal valley bottoms.

A few springs supply sufficient quantities of water for domestic use, usually produces less than 5 gpm.