Owen County

Water Supply Plan

1999

Prepared by:

Owen County Water Supply Planning Council
and the
Northern Kentucky Area Development District

Support was provided in part through a grant from the Natural Resources and Environmental Protection Cabinet, Division of Water.

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CHAPTER 1
DESCRIPTION OF THE PLANNING UNIT

I. Introduction

Owen County covers 352 square miles in the north central portion of the Bluegrass Region of Kentucky. The county seat, Owenton, is 56 miles southwest of Cincinnati, Ohio, 75 miles Northeast of Louisville, Kentucky, and 53 miles northwest of Lexington, Kentucky.

Owen County has a 1996 estimated population of 9,905, which is an increase of 9.6 percent since 1990. The most recent population projections indicate that Owen County's population will reach 14,127 by 2020 (Figure 1). 1996 employment in the county averaged 1,740 persons.

Major highways serving the area are US 127 and Kentucky Highway 22, both "AAA" rated trucking highways. Interstate 71 can be accessed 17 miles north of Owenton. Access to Interstate 75 is available 21 miles northeast of Owenton via Ky 22.

II. Physiography

The physical character of Owen County is largely dependent upon its location in the outer "Hills of the Bluegrass" geographic region, located between the central Kentucky Bluegrass area and the Ohio River. This geographic area dictates not only the geologic and topographic conditions which exist, but also the location and quality of soils and other natural resources.

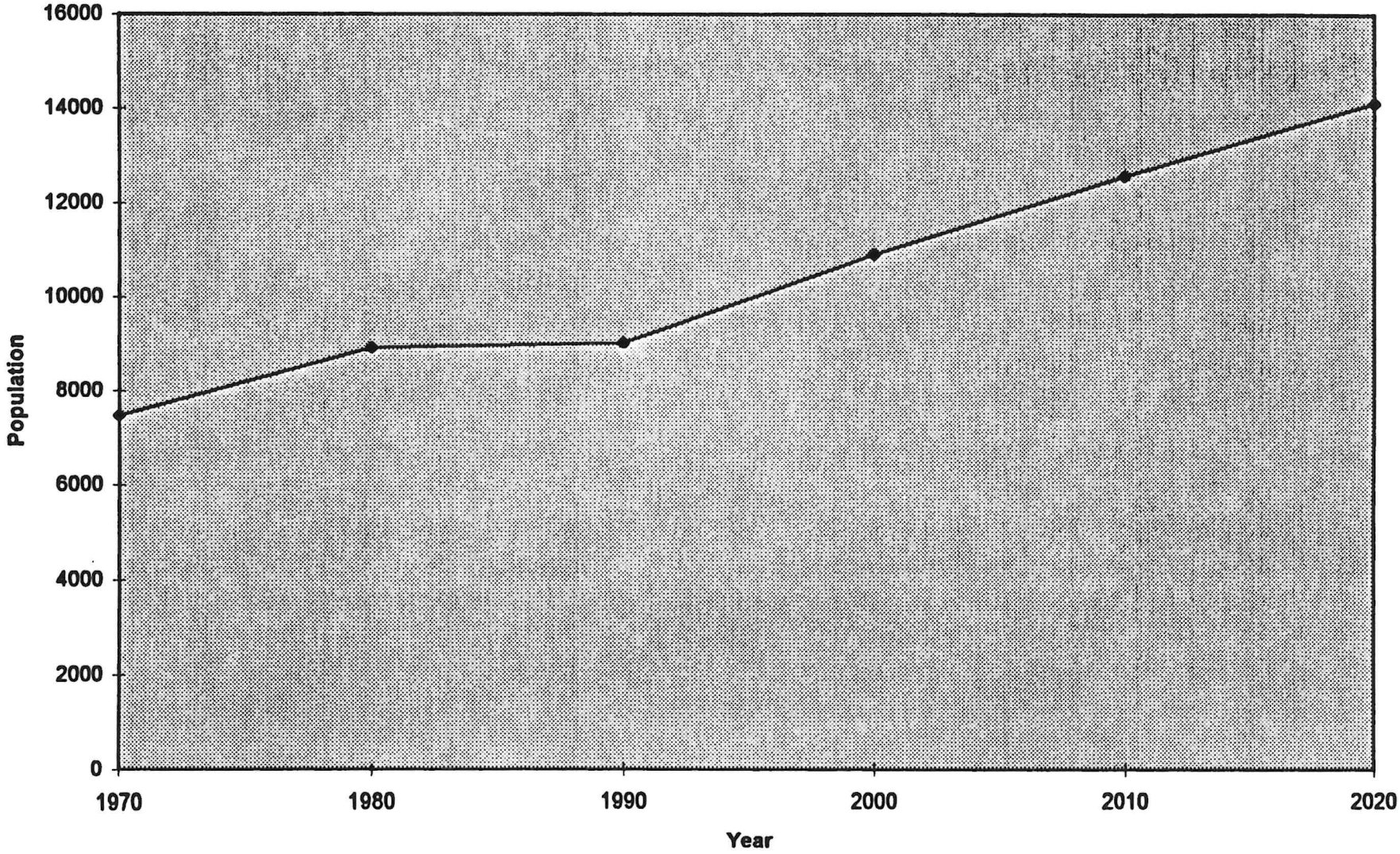
As is the case in most regions, the existing terrain is a product of weathering and erosion on the local geologic formations. The most common landform characteristic in the county is a pattern of irregular ridges and narrow valleys dissected with the minor stream valleys of Severn, Twin, Eagle, and Pond Creeks. Erosion of limestone and siltstone has resulted in these narrow to moderate ridges with steep hillsides to numerous and quickly draining streams in most valleys. The most common underlying bedrock on ridge tops is an impermeable shale which contributes to creating only a small number of perennial streams in the county. These geologic formations also contribute to shallow soils and depth to rock along with limited ground water supplies on uplands, ridges, and terraces.

The most notable exceptions to this pattern are the two major river valleys in the county, containing Eagle Creek and the Kentucky River. Both of these streams are located in major valley floors containing alluvial deposits and wide flood plains. The limited glacial activity that has occurred in the area is responsible for creating these major streambeds. While these valleys are deeply entrenched in the surrounding countryside with differences in elevation of 200-350 feet, wide terraces and rolling hills serve as buffers between the river valleys and the nearby narrow ridge areas. This is in major contrast to the gorges and cliff lined narrow valleys through which the Kentucky river passes in the central bluegrass area to the south.

The surface topography of Owen County corresponds greatly to the underlying geologic formations.

Figure 1.1

Owen County Population Growth: 1970 - 2020

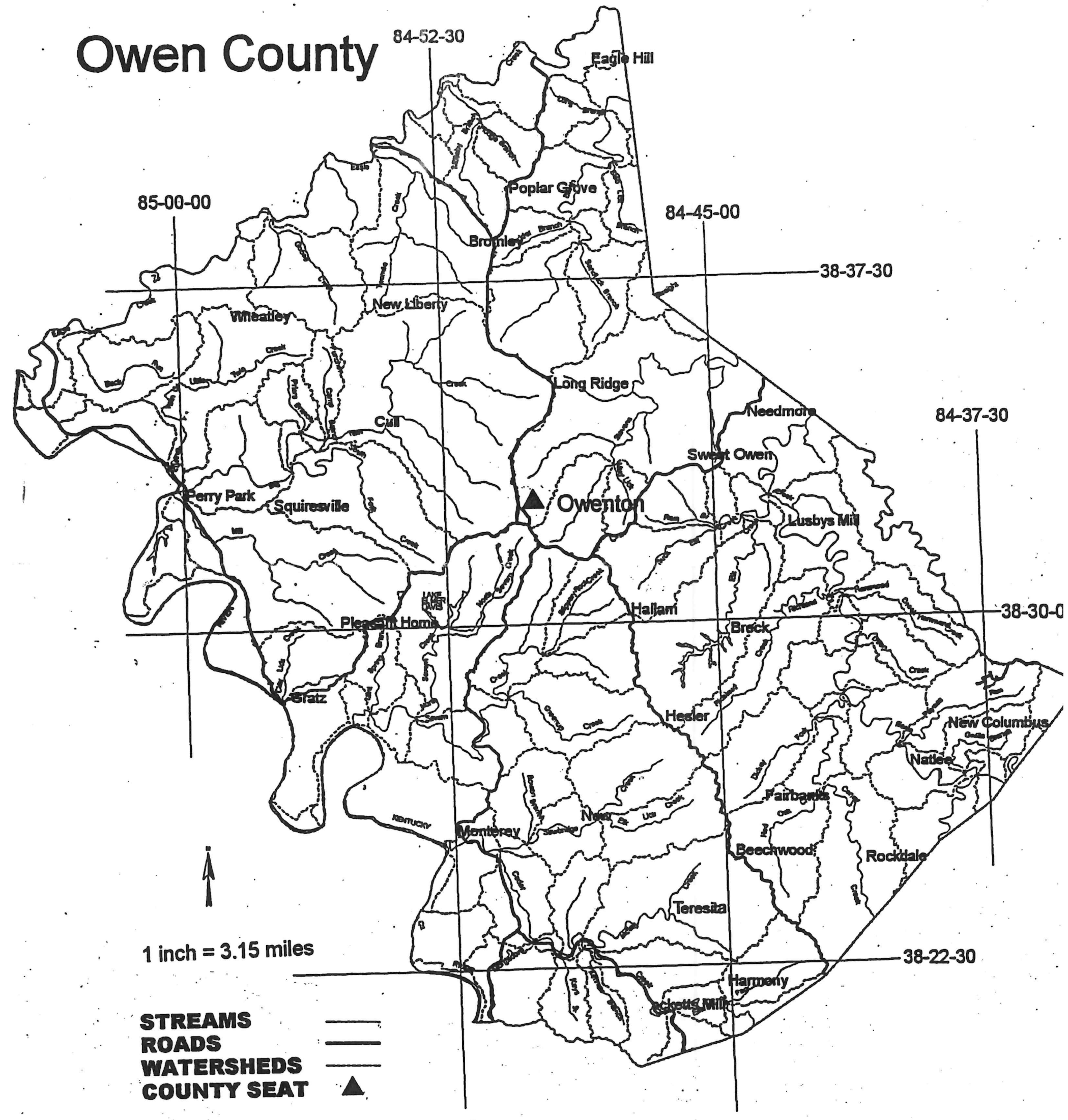


The topography is generally characterized by ridges and hills with narrow valleys, varying altitude from approximately 980 feet above sea level to around 450 feet. The generally higher elevations occur on ridgetops in the eastern and southern portions of the county, with the lowest elevations near the confluence of Eagle Creek and the Kentucky river to the northwest. The ridges immediately surrounding the City of Owenton are the highest locations in the county. Ridges and ridgetops in both the northcentral and southeastern portions of the county are normally wider and flatter, with the topography being of a more dissected and narrow variety in the western and southern portions. Elevation changes from most ridgetops to valley floors and intermittent stream locations range from 150 to 250 feet, and the entire county is marked by vast areas of hillsides of steep to moderately steep slopes. The locations and predominance of these steep slopes and ridgetops are major factors affecting the placement of roads and urban uses, as well as agriculture and other uses. These slopes range from a severe 20 to 35 percent in some areas to a more moderate 5 to 12 percent along flood plain valleys, knolls, and ridgetops. However, these conditions are highly localized.

The entire county is part of the Kentucky River basin. The county is divided into a number of sub-drainage basins all of which drain directly into either the Kentucky River or Eagle Creek.

MAP 1

PLANNING UNIT MAP



CHAPTER 2
PLANNING COUNCIL

I. FORMATION OF THE PLANNING UNIT

The planning unit is defined by the boundaries of Owen County, as shown in Map 1. The county water needs are served by the Tri-Village Water District, Owenton Water Works, Glenwood Hall, Elk Lake Shores, and Carroll County Water District No. 1.

Resolution

The Owen County Fiscal Court Passed a resolution on December 13, 1994 regarding the county water supply plan.

Whereas: The Kentucky Legislature mandated county-level long range water supply planning in 1990; and

Whereas: Each county must have a water plan approved by July 15, 1998 or the cabinet will not endorse any project that impacts water under the Kentucky intergovernmental review process;

Whereas: It is necessary that a planning council be formed to produce the water supply plan;

Now Therefore Be It Resolved: That the Owen County Fiscal court endorses that the Owen County Water Supply Planning Council be formed to conduct all aspects of Water Supply Planning and duties inherent therein.

II. PLANNING COUNCIL AND PLANNING REPRESENTATIVE

The following is a list of members of the Owen County Water Supply Planning Council and their affiliations:

Chairman
Carl J Stich Sr.
445 Elk Lake Resort Rd.
Owenton, KY 40359
(502) 484-5113

Judge/Executive William P. O'Banion
Owen County Fiscal Court
P O Box 465
Owenton, KY 40359
(502) 484-3405

Mayor Rebecca Albaugh
City of Monterey
Route 3
Owenton, KY 40359

W.E. Babington

Mayor K F "Jr" Ballard
City of Owenton
P. O. Box 280
Owenton, KY 40359
(502) 484-2313 or 484-2322

Carol F. Tudor
Manager, Tri-Village Water Dist.
3700 Hwy. 127N
Owenton, KY 40359
(502) 484-5774

Frank Downing
Owen Electric Cooperative Inc.
510 Georgetown Rd.
Owenton, KY 40359
(502) 484-3471

Marshall Gibson
Owenton Water & Sewer
Owenton, KY 40359
(502) 484-2808

Bill Gill
Owen Electric Cooperative Inc.
510 Georgetown Rd.
Owenton, KY 40359

Charles F. Noel
Chairman
Tri-Village Water District
Route 6, Box 40-A
3700 Hwy 127N
Owenton, KY 40359
(502) 484-5774

Mayor Billy Stamper
City of Gratz
P.O. Box 29
Gratz, KY 40327
(502)484-5507

Minutes of the Planning Council meetings can be found in Appendix A.

Planning Representative

NKADD was selected as the planning representative. Richard Bragg, Coordinator of the Development Services Division, oversees responsible staff.

II. NOTIFICATIONS

401 KAR 4:220 subsection 5.3(a) requires extensive notifications regarding the water supply planning process including mayors, county judge-executives, and water suppliers in adjacent counties, area water watch groups, and the public. Samples of public notices, notification letters, and a list of recipients can be found Appendix B.

CHAPTER 3
PLANNING OBJECTIVES AND CONFLICTS

I. PLANNING OBJECTIVES

The following goals and objectives were discussed and formulated at the November 29, 1995 meeting and adopted at the January 17, 1995 meeting:

1. Encourage conservation where possible;

2. Try to provide a continuous level of supply where humanly possible;

3. The time frame of the plan will address source availability and demand for the next five, ten, fifteen, and twenty years;

4. Compatibility with existing plans;

5. Preservation and use of natural water storage systems where possible;

6. Cost effectiveness will be utilized to develop the water supply plan; and

7. Protection of the overall qualities of the environment.

A copy of the work plan can be found in Appendix C.

Water Supply Planning Conflicts
No water supply planning conflicts have been identified.

II. REVIEW OF EXISTING PLANS

Research of existing plans provided extensive documentation of water-related planning for Owen County. Much of the previous planning analyzed water and demographic trends, conducted forecasting, inventoried water systems, and projected future need.

There are two plans which are particularly important:

(1) Lower Kentucky River Navigation Modernization; Feasibility Study. March 1988; US Army Corps of Engineers, Louisville District. (Technical Appendix; Volume 4A - Water Supply Studies)

Abstract: To determine the magnitude of future water supply needs in the lower Kentucky River Basin and incorporating water supply into the navigation modernization project.

To forecast water demands, data were gathered on water suppliers and distributors within the

study area, including their facilities for storing and distributing water, and the quantity of water currently demanded from their systems. Future water supply needs were extrapolated from the data, based on population estimates. Hydraulic and hydrologic analyses were performed to determine natural streamflow during hypothetical droughts of varying severity and duration, were developed. Finally, the quantity of effluent returned to the river, principally from wastewater treatment plants, was calculated using the Division of Water database for permitted discharge. Future years effluent flows were calculated from population projections and historic trends from the state database.

(2) The Comprehensive Regional Water and Sewer Plan and Interim Land Use Plan for The Northern Kentucky Area Development District; 1974 Watkins and Associates, Inc. and Northern Kentucky Area Development District.

Abstract: A single document plan which provides guidelines for land use planning and recommendations for water and sanitary sewerage system improvements. The water-sewer portion of the plan analyzes the existing systems, presents water quality considerations, and makes recommendations for the orderly growth of water and sewer facilities in the study area. Provisions for implementing, updating and coordinating the water-sewer plan are also included.

Additional studies have been a valuable resource as backup and background information, data and mapping material.

(1) Ohio River Basin, Comprehensive Survey; Kentucky River Sub-Basin Study. US Army Corps Of Engineers 1962.

(3) The River Basin Water Quality Management Plan For Kentucky 1974;

Abstract: Water quality assessment, and developing water quality objectives.

(4) Kentucky River Navigation Project; Draft Environmental Impact Statement, Operation and Maintenance. June 1975 U.S. Army Corp of Engineer District, Louisville.

Abstract: The study analyses the long and short term effects on the physical , biological, and cultural environment of the Kentucky River by the continued operation and maintenance of the navigation system.

(5) Kentucky/Licking River Basins; Regional Water and Land Resources Plan and Draft Environmental Impact Statement 1980
Ohio River Basin Commission, Cincinnati Ohio.

Abstract: The plan includes recommended policies, programs, studies and structural and non-structural projects which the Ohio River Basin Commission has determined are needed to meet the economic, environmental, and social needs of the basin.

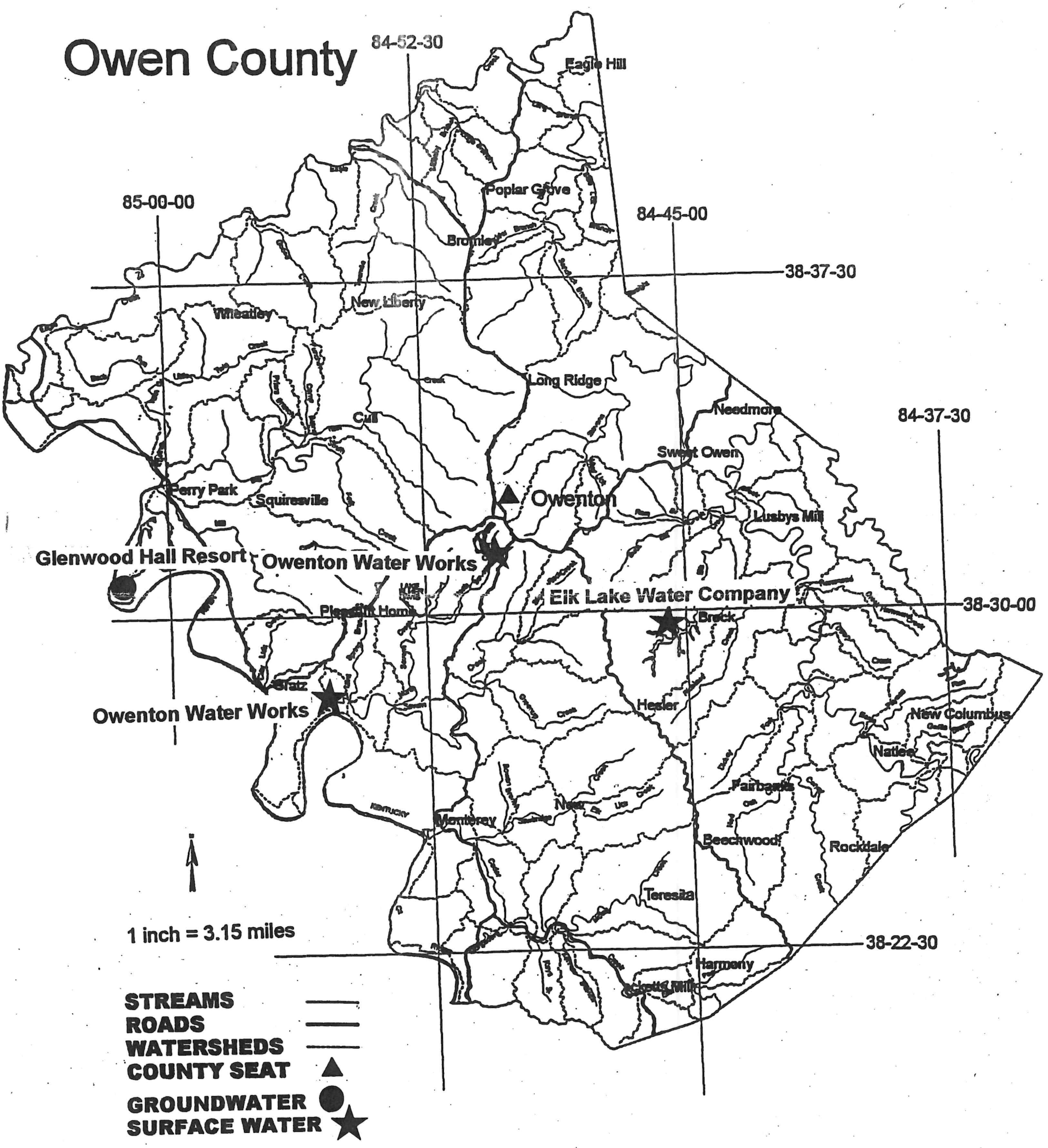
(7) Water Resources Data; Kentucky; Water Year 1988
United States Geological Survey

(8) Owenton Comprehensive Plan 1992
Owenton Planning Commission and NKADD

Because these plans and studies represent a great expenditure of time and public input, the planning council has relied heavily on these valuable resources to produce the Owen County Water Supply Plan.

MAP 2

COUNTY BASE MAP AND WATER USE MAP



CHAPTER 5
WATER USE AND WATER USE FORECAST

I. WATER USE ASSESSMENT

Owen County has four water suppliers and one water distributor. In addition, there are also agricultural water users, permitted water users, and permit-exempt water users. The following pages contain an informational profile of the suppliers and distributors and a description of the various types of water users.

Water Supplier

OWENTON WATER WORKS

Address: 102 North Main Street
P.O. Box 280
Owenton, KY 40359

Phone: (502)484-2330

Contact: Marshall Gibson

2000 H_2O withdrawal / residential / non residential #'s Sent 5-15 fax 502-484-2322

Raw Water Source(s): Severn Creek and Lower Thomas Lake

Permitted Withdrawal Limits:

Lower Thomas Lake (Primary) - 500,000 gpd*
Severn Creek (Secondary) - 80,000 gpd*

*Currently in the process of applying for increase to 1 mgd for each source

Treatment Plant:

Location: Thomas Lake
Capacity: 1.44 mgd
Date Built: 1995
Condition: Excellent
Type Treatment: Rapid sand filter

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 2

To Marshall Gibson	From Stacey Dietrich
Co. Owenton Water	Co. NKADD
Dept. 2334	Phone #
Fax # 502-484-~~2322~~ 5136	Fax #

Treated Water Storage:

Location	Type	Capacity (Gal)
Bacon Alley	Elevated Tank	100,000
Industrial Park	Elevated Tank	400,000
Treatment Plant	Storage Tank	235,000

Leak Detection Methods: Visual, metered, valving.

Conservation Measures: Try to replace old lines and fire hydrants annually. In a drought situation, methods would include public awareness campaign, shut-down of loading stations, and bans on car washing and lawn watering.

Planned Improvements: New water treatment plant recently completed.

Anticipated Growth: Normal growth in system and expansion of lines to Tri-Village.

Water Distributor

TRI-VILLAGE WATER DISTRICT

Address: 3700 Highway 127 N
Owenton, KY 40359

Phone: (502)484-5774

Contact: Carol Tudor

5-15-02
Post-it™ brand fax transmittal m
To Carol Tudor
Co.
Dept.
Fax # 502-484-0966

Source of Treated Water: Owenton Water Works

Treated Water Storage:

Location	Type	Capacity(gal)
Long Ridge	Standpipe	100,000
Wheatly	Elevated Tank	33,000
Glencoe	Standpipe	100,000
Sparta	Standpipe	50,000
Bromley	Standpipe	177,000
Hesler	Standpipe	237,000
Monterey	Standpipe	117,000

Customers Served by County:

Owen County - 1,108
Grant County - 67
Gallatin County - 197

Leak Detection Methods: Master meters and driving lines.

Planned Improvements: A project is planned that will serve 287 new customers and will alleviate pressure problems for 260 existing customers. Approximately 5,000 feet of six inch line, 181,000 feet of four inch line, and 200 feet of three inch line will be added to the distribution system. In addition a 75,000 gallon elevated tank, a 100,000 gallon standpipe, and two booster pump stations will be constructed.

Water Supplier

GLENWOOD HALL RESORT AND COUNTRY CLUB

Address: 4211 Norbourne Boulevard
Louisville, KY 40207

Phone: (502)897-1861

Contact: Bill Allen

did Carroll Co. take over their customers? YES

Raw Water Source: Groundwater

Treatment Plant:

Capacity (gpd): 72,000
Date Built: 1970
Condition: Fair to poor. Some repairs needed.

Treated Water Storage:

Type: Tank at grade
Capacity: 87,000 gallons
Comments: Condition of tank is excellent, but more storage is needed.

Leak Detection Methods: Visual and comparing water sales with master meter readings.

Conservation Measures: Water metering and cost incentives for low monthly usage.

Planned Improvements: None. Carroll County Water District No. 1 will supply water to current and future customers by the summer of 1998.

Future Growth: Further development of resort property is anticipated.

Water Supplier

ELK LAKE WATER COMPANY

Address: 445 Elk Lake Resort Road
Owenton, KY 40359

Phone: (502)484-0014

Faxed 5-17-02

Contact: Carl J. Stich Sr., Administrator

Raw Water Source: Elk Lake

Treatment Plant:
- **Location:** Elk Lake
- **Capacity (gpd):** 120,000
- **Date Built:** 1961
- **Type Treatment:** Chemical

Treated Water Storage:
- **Location:** Owenton
- **Type:** Standpipe
- **Capacity(gpd):** 100,000

Future Growth: A ten percent increase is anticipated over the next decade.

Water Supplier

CARROLL COUNTY WATER DISTRICT NO. 1

5-17-02
Memo 7671 # of pages ▸ 2
To: Jim Smith
Co.
Phone # 502-347-9470
Fax # 502-347-9333

Address: 513 Highland Avenue, P.O. Box 333
Carrollton, KY 41008

Phone: (502)347-9470

2000 H2O Withdrawal
Jim Smith

Raw Water Source: Groundwater

Treatment Plant:

Location: Ghent, KY
Capacity: 756,000 gpd
Condition: good
Type of Treatment: Disinfection only, chlorination, an[illegible]dation

Treated Water Storage:

Location	Type	Capacity (gallons)
Dividing Ridge Road	Standpipe	200,000
Jackson Ridge Road	Standpipe	100,000
4 System-Wide Tanks	Tank at Grade	50,000 each

Customers Served By County:

Carroll County - 1,313
Gallatin County - 262
Owen County - 212

Leak Detection Methods: Visual, sequencing valve closures while monitoring appropriate locations with leak detector.

Conservation Measures: Try to minimize leaks. Optimize operation to minimize electricity costs and leaks due to pressure fluctuations.

Planned Improvements: New treatment plant, 150,000 gallons of additional storage, and 2 new wells.

Future Growth: There are plans to extend system in Carroll County. Glenwood Hall customers will be added to the system by the fall of 1997. Growth is anticipated to continue at approximately 150 customers per year.

Permitted Water Users
Other than the water suppliers listed above, there are no additional permitted water users.

Agricultural Water Use
Agricultural water use in the county includes tobacco farming, livestock production, and dairy farming. The Owen County Extension Agent, Kim Strohmeier, was consulted for estimates on approximate water usage and water sources for each agricultural activity.

One major agricultural water use is tobacco irrigation. There are approximately 400 irrigation systems in the county. Virtually all farmers with these systems use streams or farm ponds. Tobacco float beds have quickly become popular in the county. Almost all the water for these systems is city water, even in those areas that are not served by city water. In a typical season, these systems would use about 1.5 million gallons.

Small livestock production has increased as a number of people move into the county and purchase small farms with the intent of raising 5 to 20 head of cattle. A good many of these cattle are watered with city water in the areas where city water is available. It is estimated that 5 to 10 percent of the 10,000 beef cows are being watered with city water.

Larger cattle producers rely almost exclusively on water from ponds or streams. Most dairy operations that are located within areas served by public water use city water for their milk rooms water needs. If water is not available, cisterns are used.

II. WATER USE FORECAST

The IWR-MAIN model, developed by the U.S. Army Corps of Engineers, was used to forecast demand for water for the major water supplier in the county, Owenton Water Works. Owenton Water Works, along with its wholesale customer, Tri-Village Water District, provide most of the public water in the county. IWR-MAIN was not utilized on the smaller water suppliers, Glenwood Hall and Elk Lake Water Company because they serve much smaller and more seasonal populations.

IWR-MAIN forecasts the demand for water by sector including residential, industrial, commercial/institutional, and public/unaccounted. It also allows conservation and demand management measures to be selected to create "what if" scenarios. The model requires extensive data inputs including both demographic and economic information.

The IWR-MAIN model, required for forecasting by water supply planning regulations, was originally developed for use in large urban areas and has been proven to be quite accurate. Unfortunately, in rural areas, the model is not nearly as effective and results must be compared with local knowledge of demand for water.

OWENTON WATER WORKS

Data Sources
A number of sources were used including: 1980 and 1990 Censuses of Population and Housing,

County Business Patterns (1985-1994), 1992 Census of Agriculture, Kentucky Directory of Manufacturers (1985-1995), and How Many Kentuckians: Population Forecasts 1995-2020 (1995 edition). These sources were used to provide the demographic and economic data required by the model.

In addition, information provided by Owenton Water Works and Tri-Village Water District on the Water Source, Treatment, & Distribution questionnaire was used to calibrate the model and to evaluate the results. A copy of a sample questionnaire can be found in Appendix D.

Assumptions

A number of assumptions were made while preparing the data for the model.

1. 1990 was the base year as this is the year for which the most detailed census data is available.

2. Customer conservation measures are primarily encouraged in periods of drought.

3. Tri-Village water use is included in the commercial sector as it is a wholesale customer of Owenton Water Works.

Methodology and Verification

1990 was used as the base year for the planning process with forecast years of 1990, 1995, 2000, 2005, 2010, and 2015.

The model was reasonably accurate in projecting industrial use and needed no calibration. However, it should be noted that there are very few industries in the county and a new industry could potentially increase the amount of water use in this sector. The public/unaccounted sector was much too high and was adjusted to approximately 10 percent (which is still higher than the current estimate of 5 percent). Residential usage was slightly understated while commercial use was overstated.

IWR-MAIN does a very poor job of estimating maximum day use in rural areas and the estimates for Owenton Water Works were unusable.

Total water usage was overstated by the model by approximately 25 percent in 1990 ; however, 1995 projected and actual usage were much closer (+12 percent). Figure 5.1 compares actual and projected water use. After reviewing the projections with local officials and water utility personnel, no further calibrations were made even though the projections are probably high. One deciding factor was the 37.9 percent increase in average annual water use from 1990 to 1995.

Results

1. Projections are probably high; however, in light of past growth, the Planning Council opted to utilize them. Figures 5.2 through 5.9 show actual and projected demand for water by sector.

2. According to the projections, Owenton Water Works will approach, although not exceed, current treatment capacity by the end of the planning period (See Figure 5.10). It also should be noted that recently peak demand has reached 1 mgd.

Figure 5.1

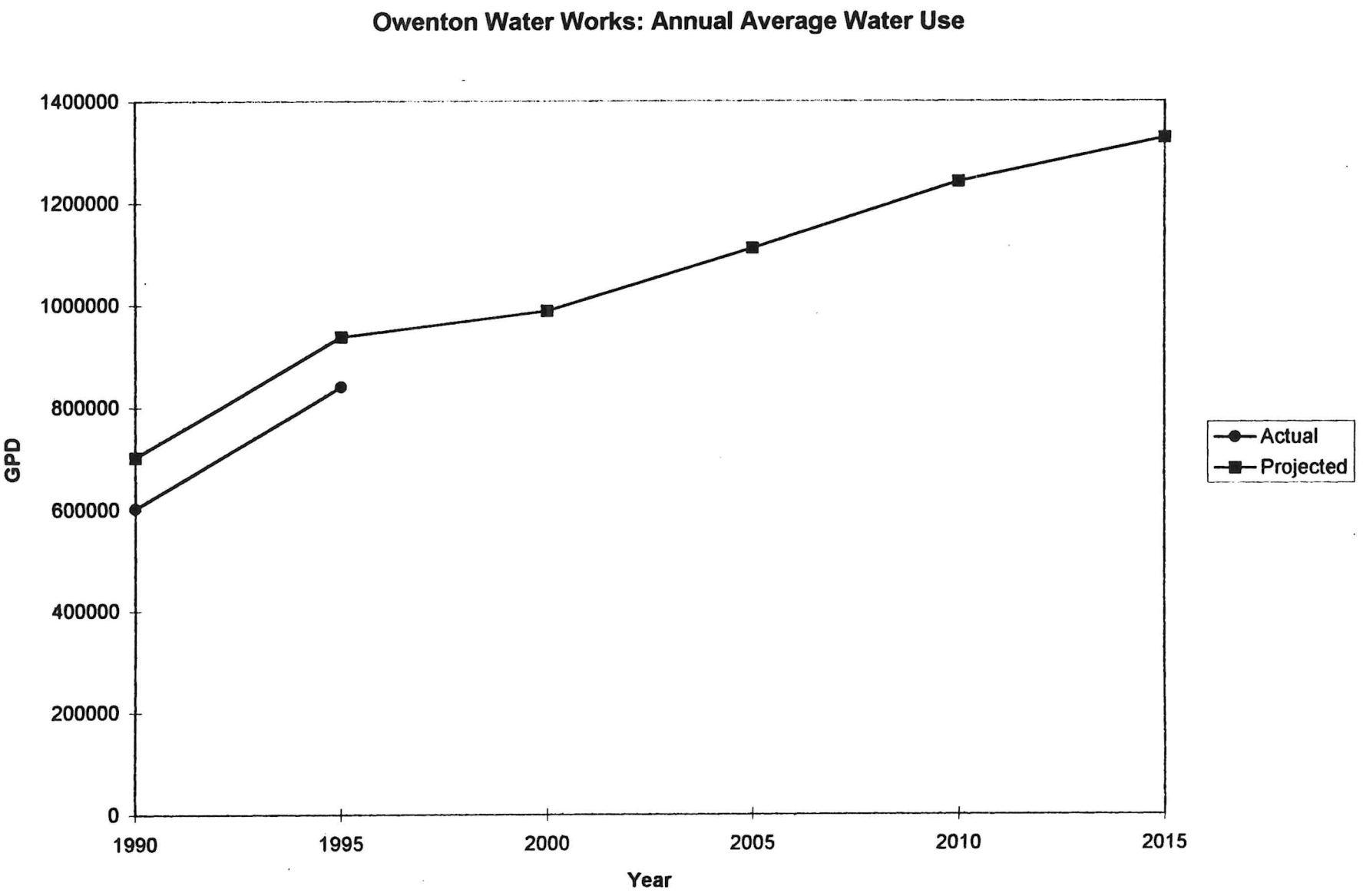

Owenton Water Works: Annual Average Water Use
1400000
1200000
1000000
800000
600000
400000
200000
0
GPD
1990
1995
2000
2005
2010
2015
Year
Actual
Projected

Figure 5.2

Owenton Water Works: 1990 Actual Use

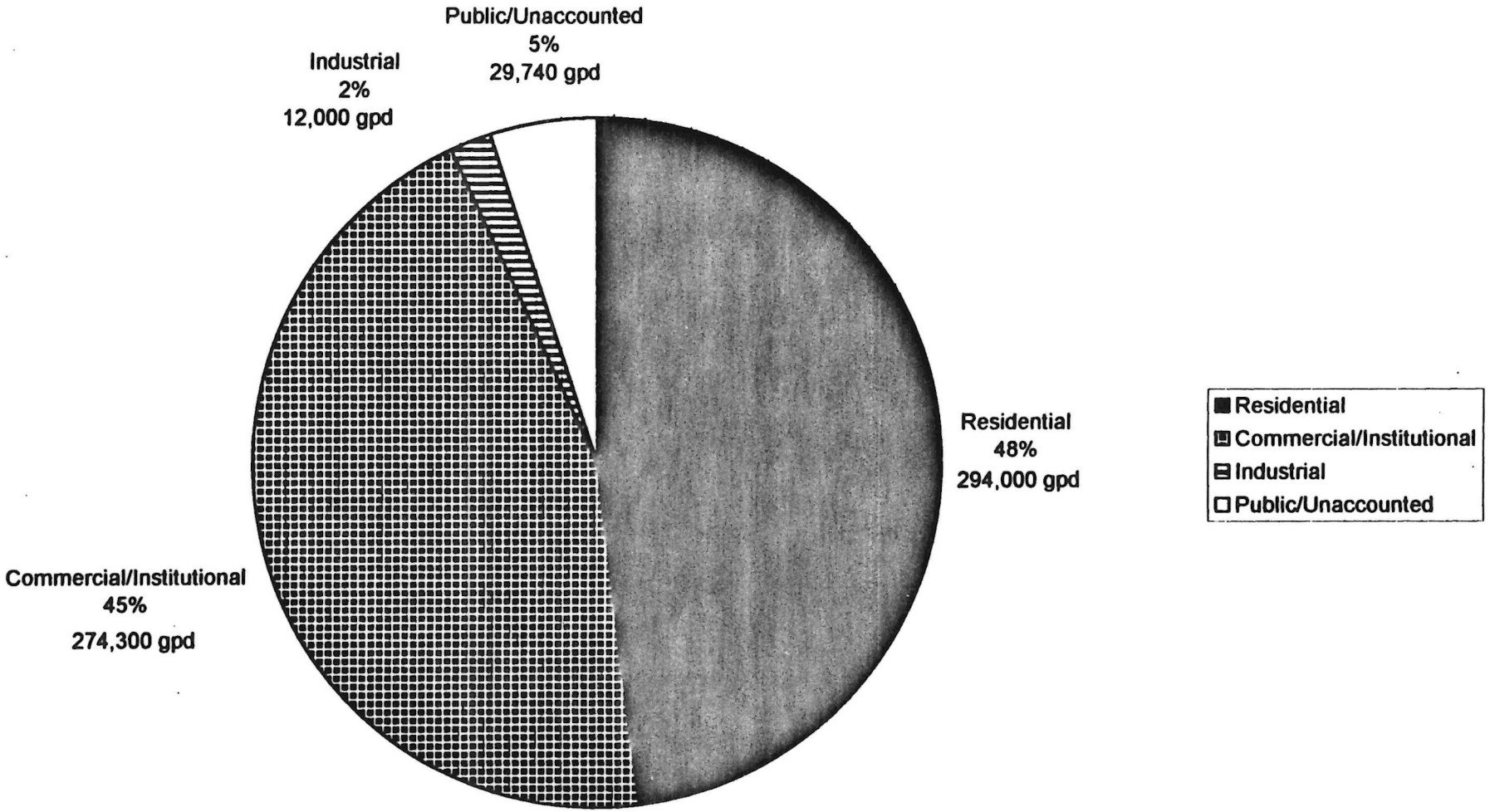


Figure 5.3

Owenton Water Works: 1990 Projected Use

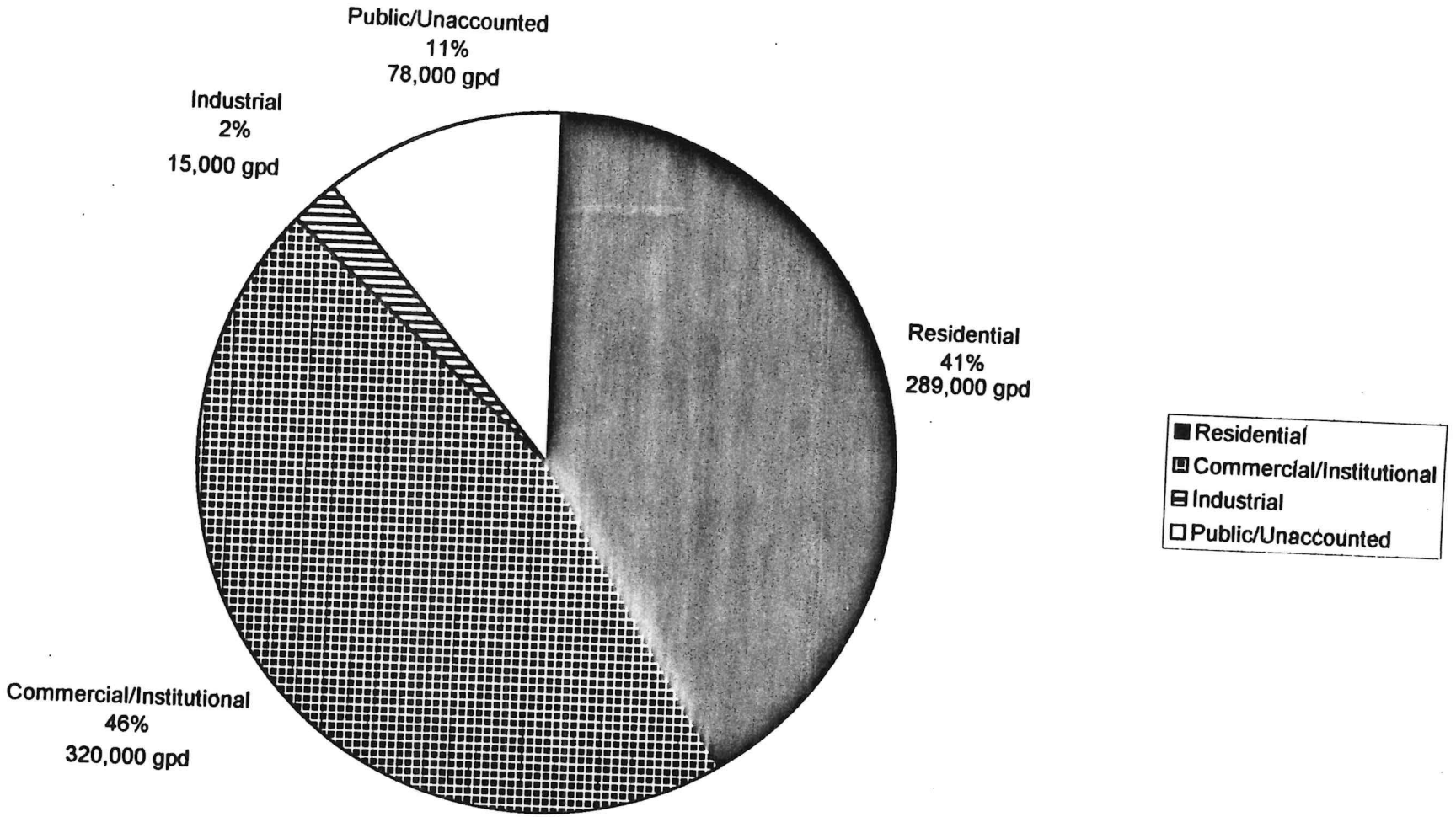


Figure 5.4

Owenton Water Works: 1995 Actual Use

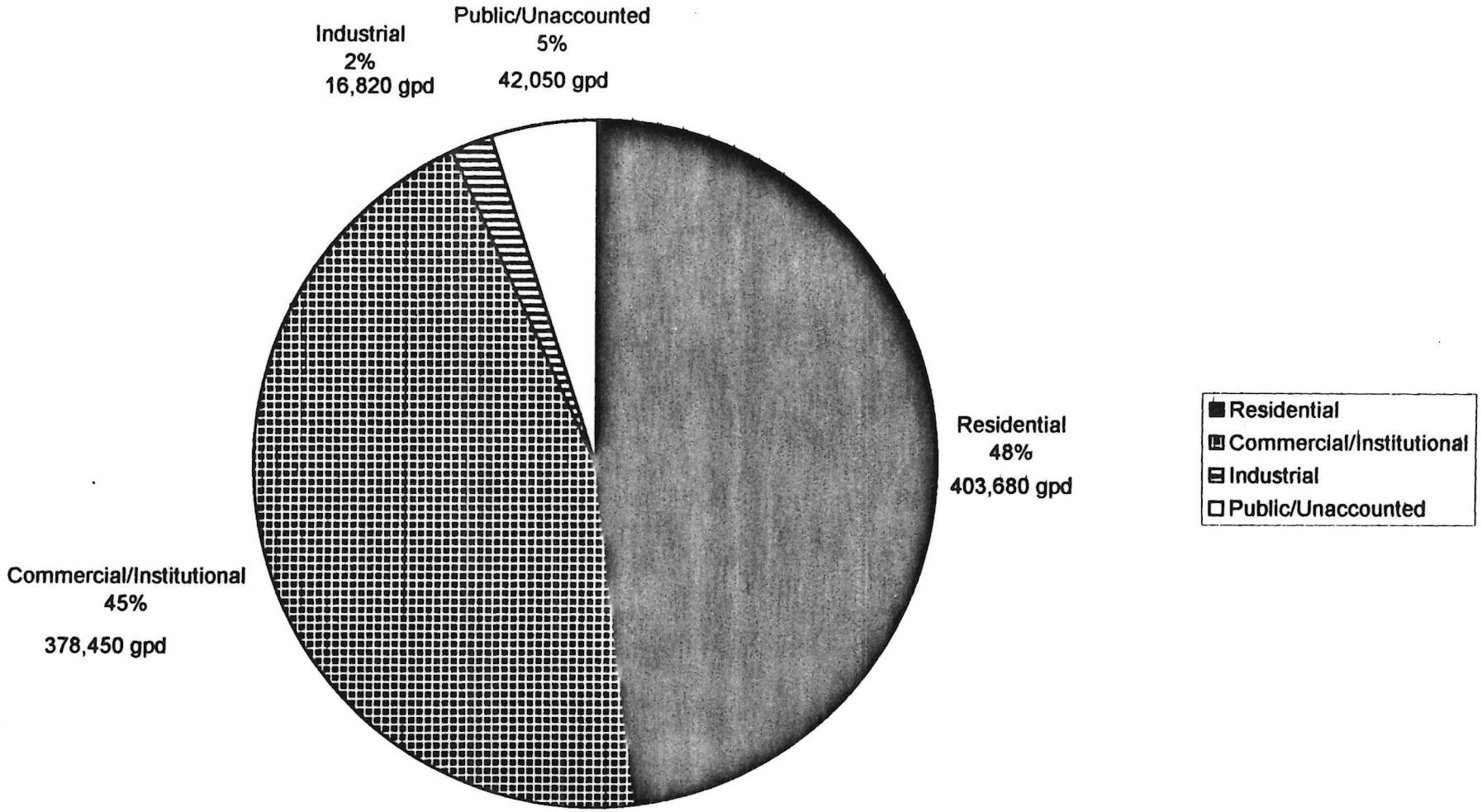


Figure 5.5

Owenton Water Works: 1995 Projected Use

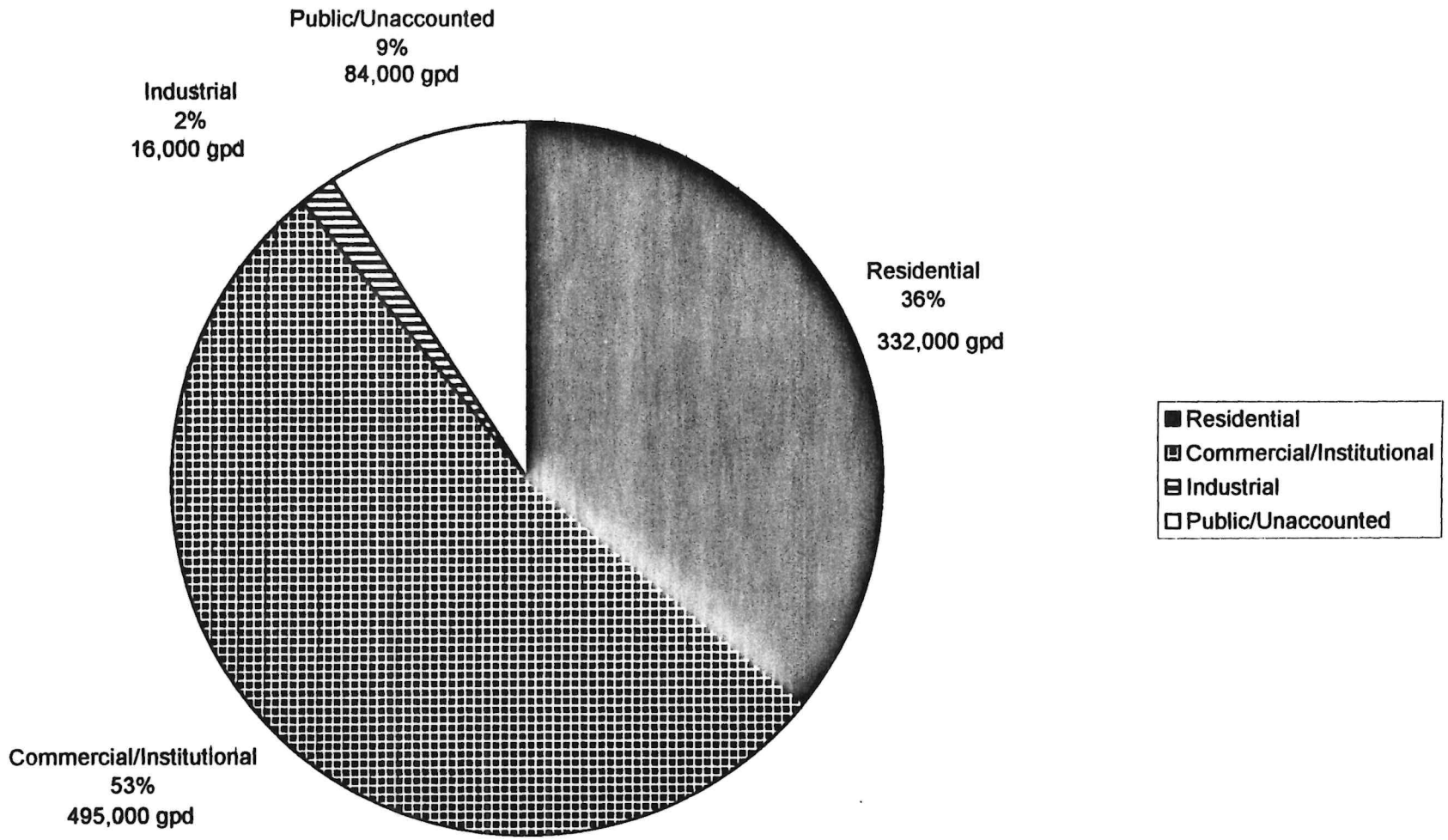


Figure 5.6

Owenton Water Works: 2000 Projected Use

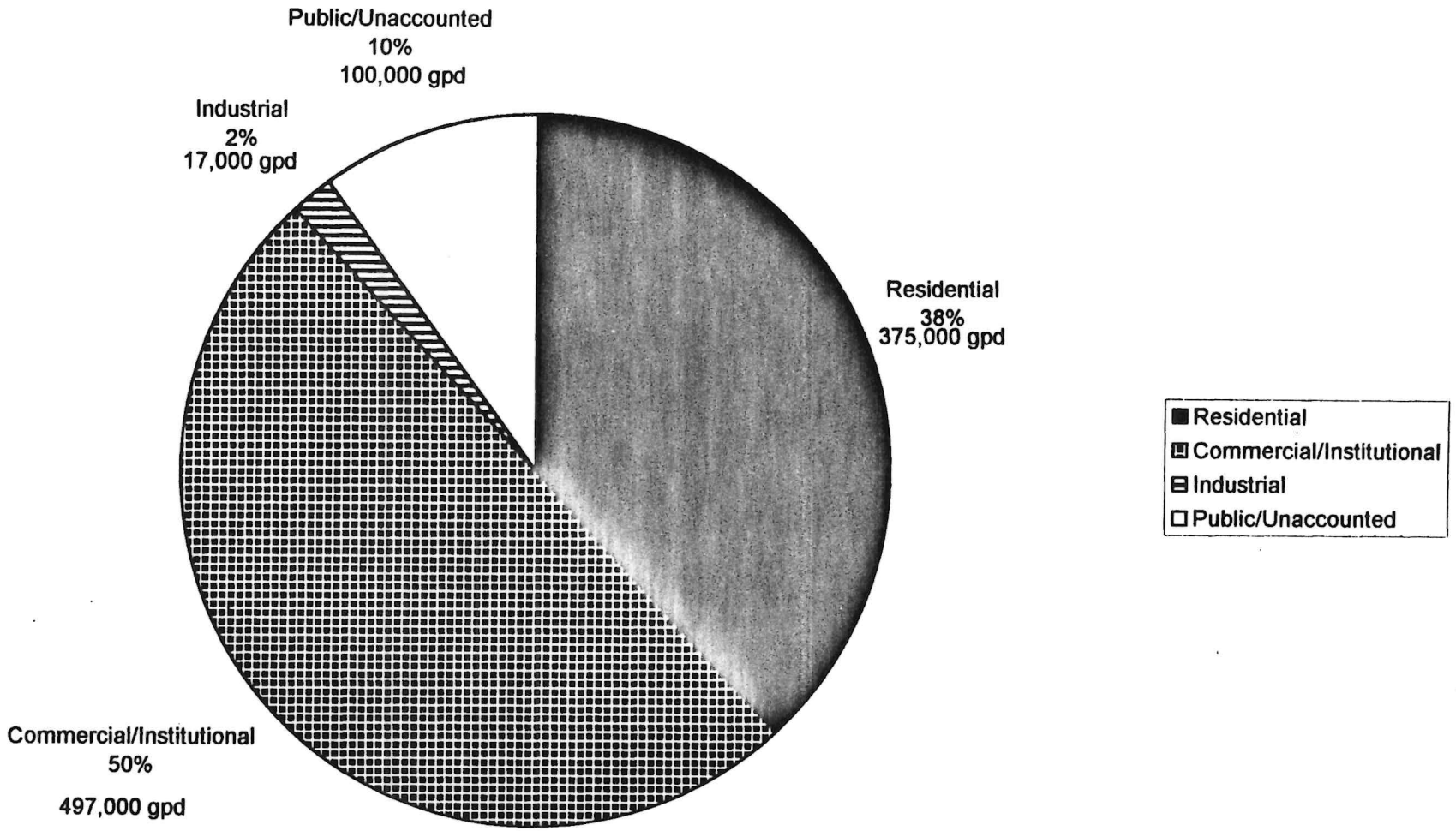


Figure 5.7

Owenton Water Works: 2005 Projected Use

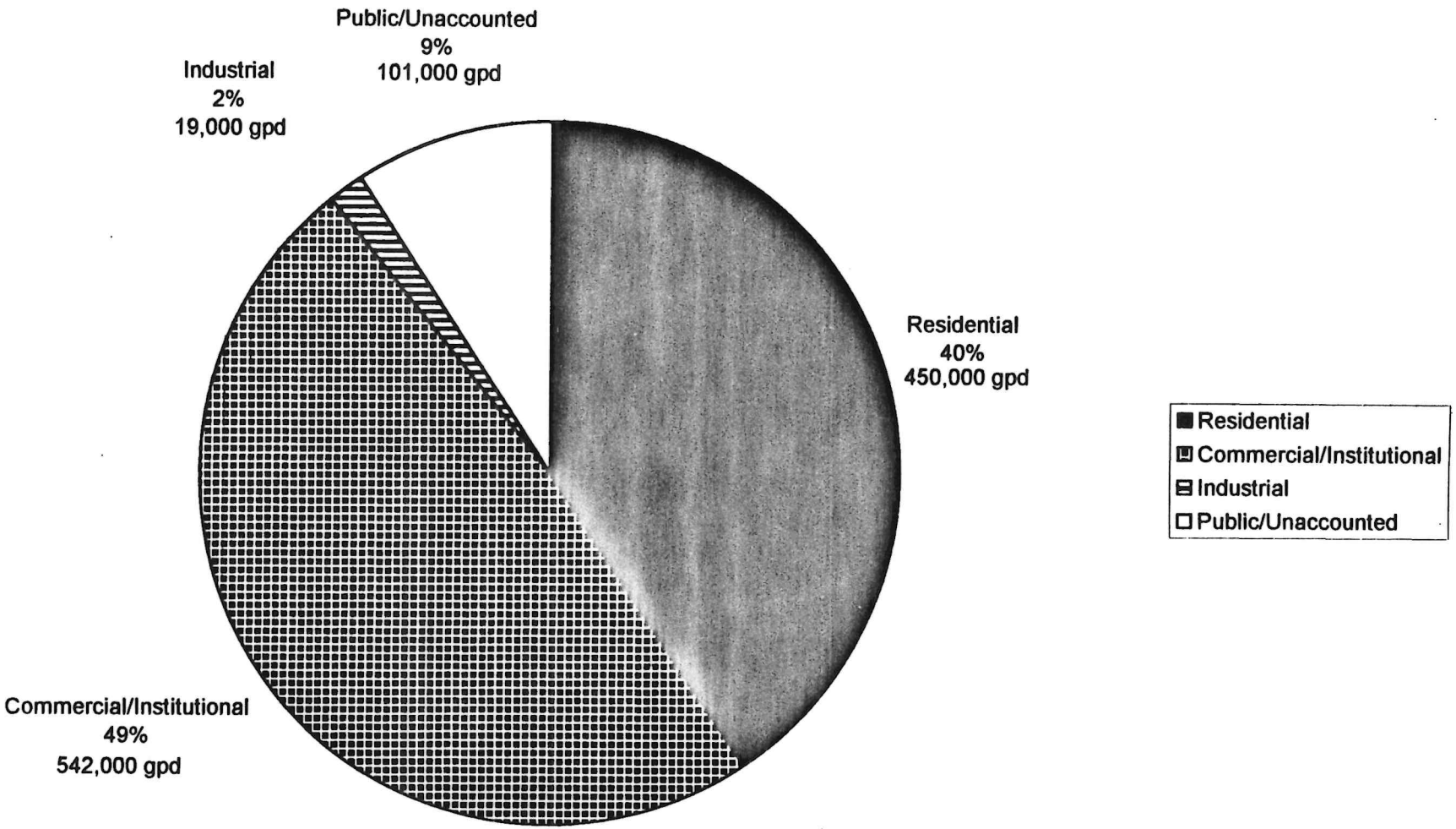


Figure 5.8

Owenton Water Works: 2010 Projected Use

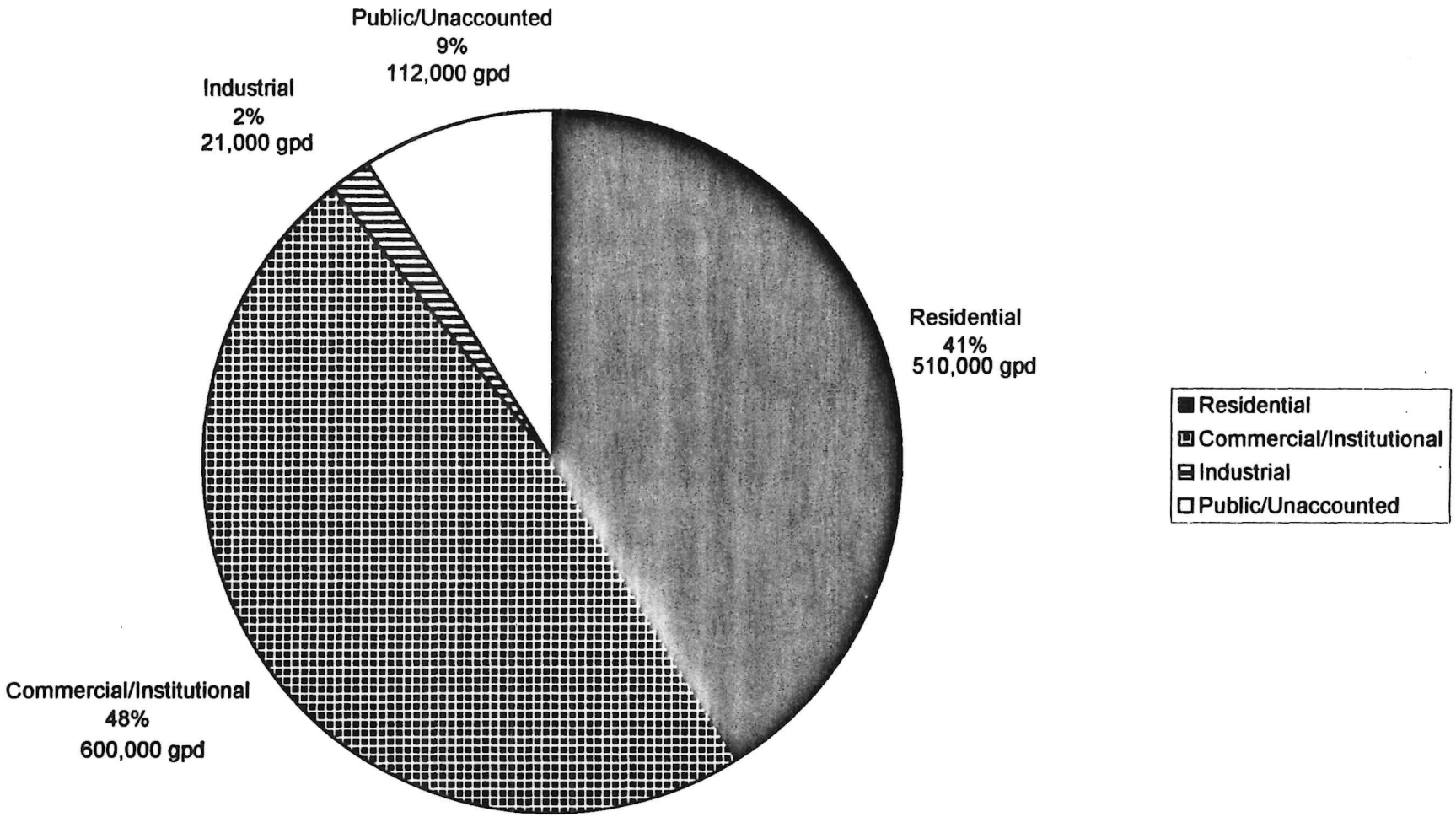


Figure 5.9

Owenton Water Works: 2015 Projected Use

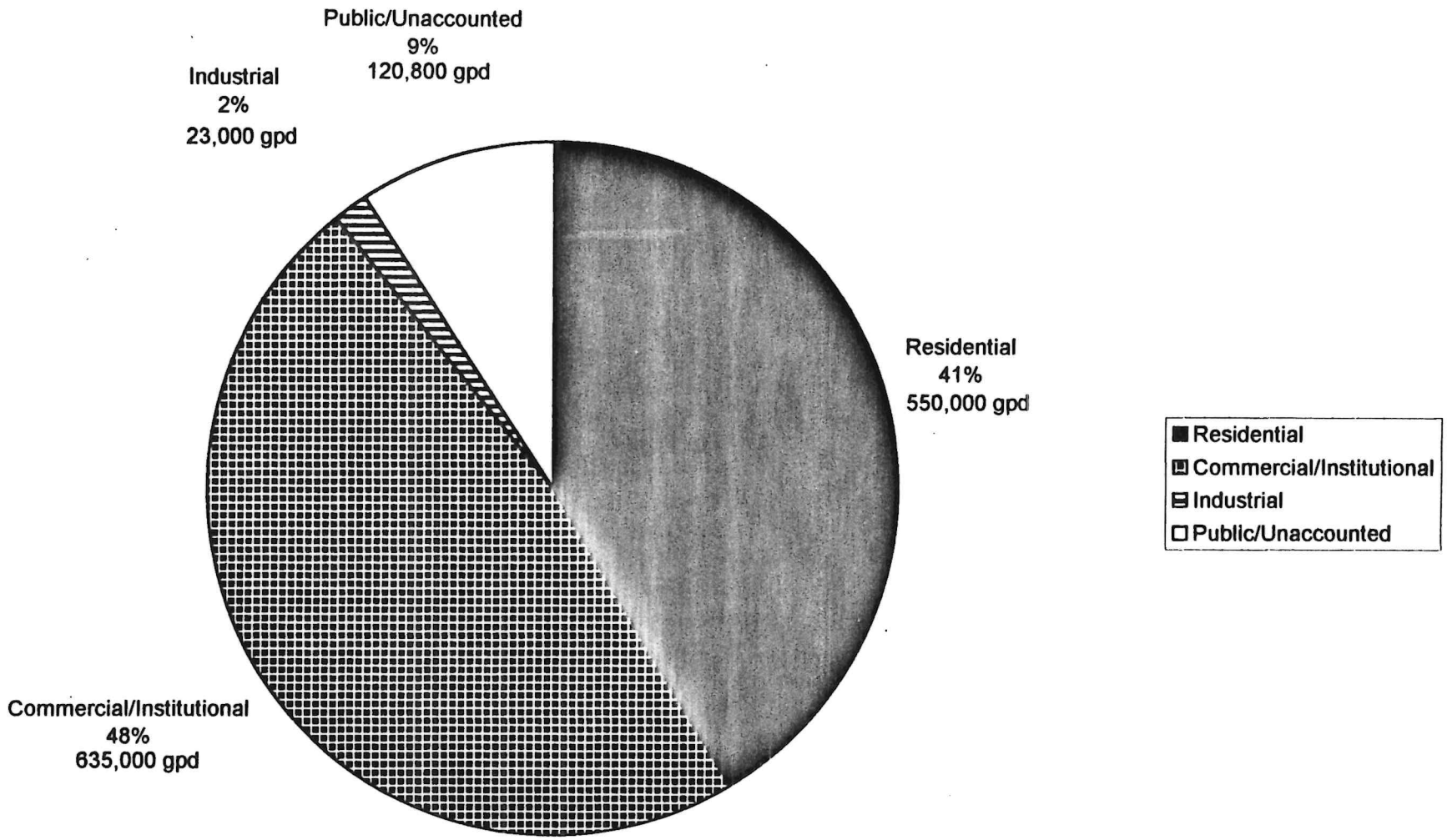
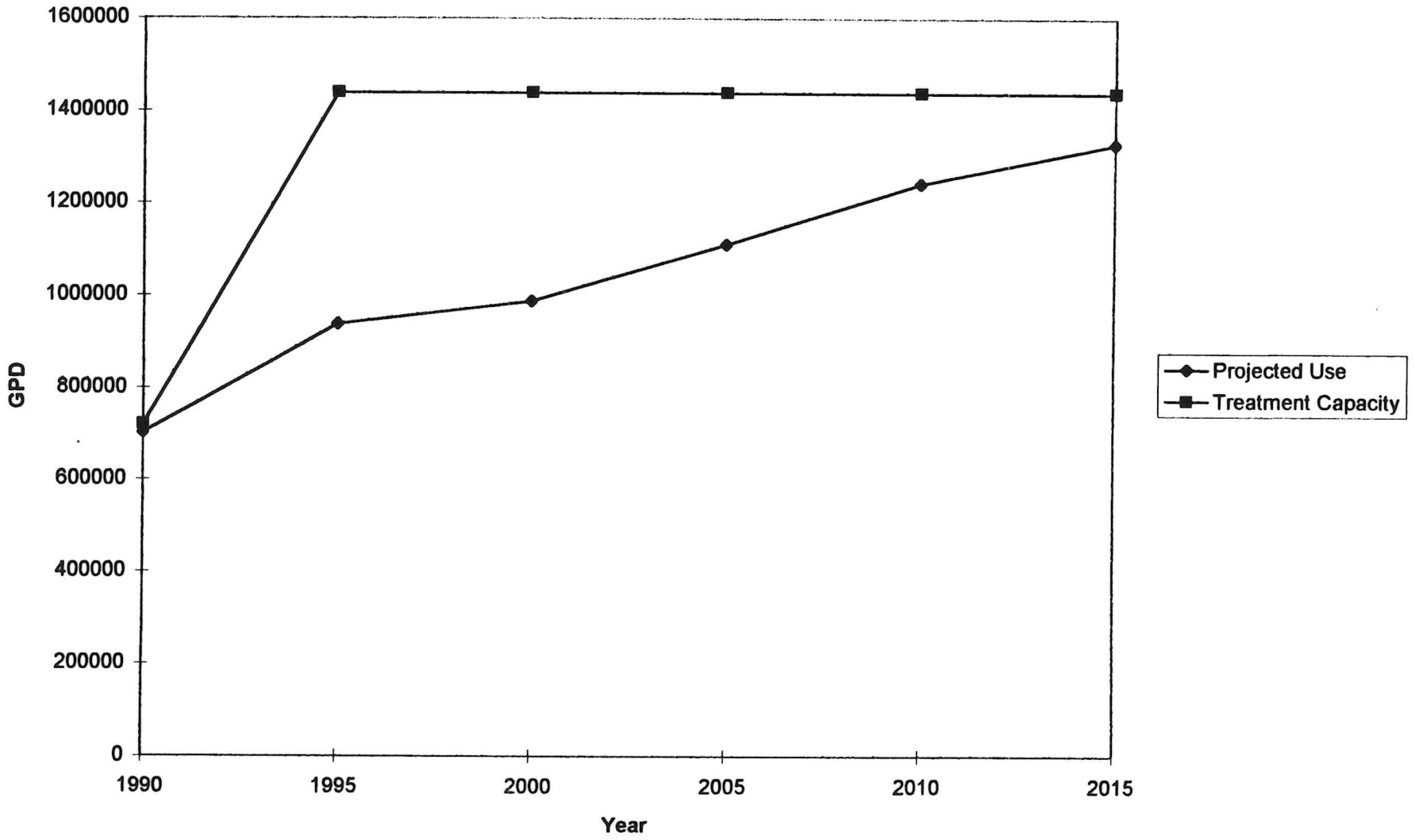


Figure 5.10

Owenton Water Works: Projected Demand For Water Vs. Treatment Capacity



CARROLL COUNTY WATER DISTRICT NO. 1 SERVICE AREA

The Carroll County Water District Number 1 (CCWD) serves customers in Carroll, Gallatin, and Owen Counties. In addition, CCWD sells water to the West Carroll Water District that serves western Carroll County.

Data Sources

Sources used included the 1990 Census of Population and Housing, County Business Patterns (1985-1994), Kentucky Directory of Manufacturers (1985-1996), and How Many Kentuckians: Population Forecasts 1995-2020 (1995 edition - High Growth Series). These sources were used to provide the demographic and economic data required for the IWR-MAIN model.

In addition, information from the survey for both CCWD and the West Carroll Water District was utilized.

Assumptions

A number of assumptions were made while preparing the data for the model.

1. 1990 was used as the base year because of the availability of extensive census data.

2. No conservation measures are currently in place and none are anticipated in the future.

3. Significant growth is expected in this water service area.

Methodology and Verification

1990 was selected as the base year. Forecast years were 1995, 2000, 2005, 2010, and 2015. 1990 and 1995 were used as comparison years for calibration and verification.

While the model understated water use in 1990, in 1995, water use was within .03 percent. However, after consultation with Jim Smith, Manager of CCWD, total water use was calibrated upwards for 2000, 2005, 2010, and 2015 by 10 percent, 19 percent, 22 percent, and 25 percent respectively. The increases were based on local knowledge of growth and planned improvements and expansions. Figure 5.11 compares actual and projected demand for water.

Conclusions

Steady growth will occur in this water service area. Figures 5.12 through 5.19 show actual and projected demand for water by sector. Residential water use will be the largest demand sector throughout the planning period. Industrial water use is expected to increase as local manufacturers complete planned expansions. Carroll County also has an active industrial and commercial recruitment program so increase demand for water from these sectors is anticipated.

Figure 5.11

Carroll Co. W.D. No.1: Average Daily Water Use (gpd)

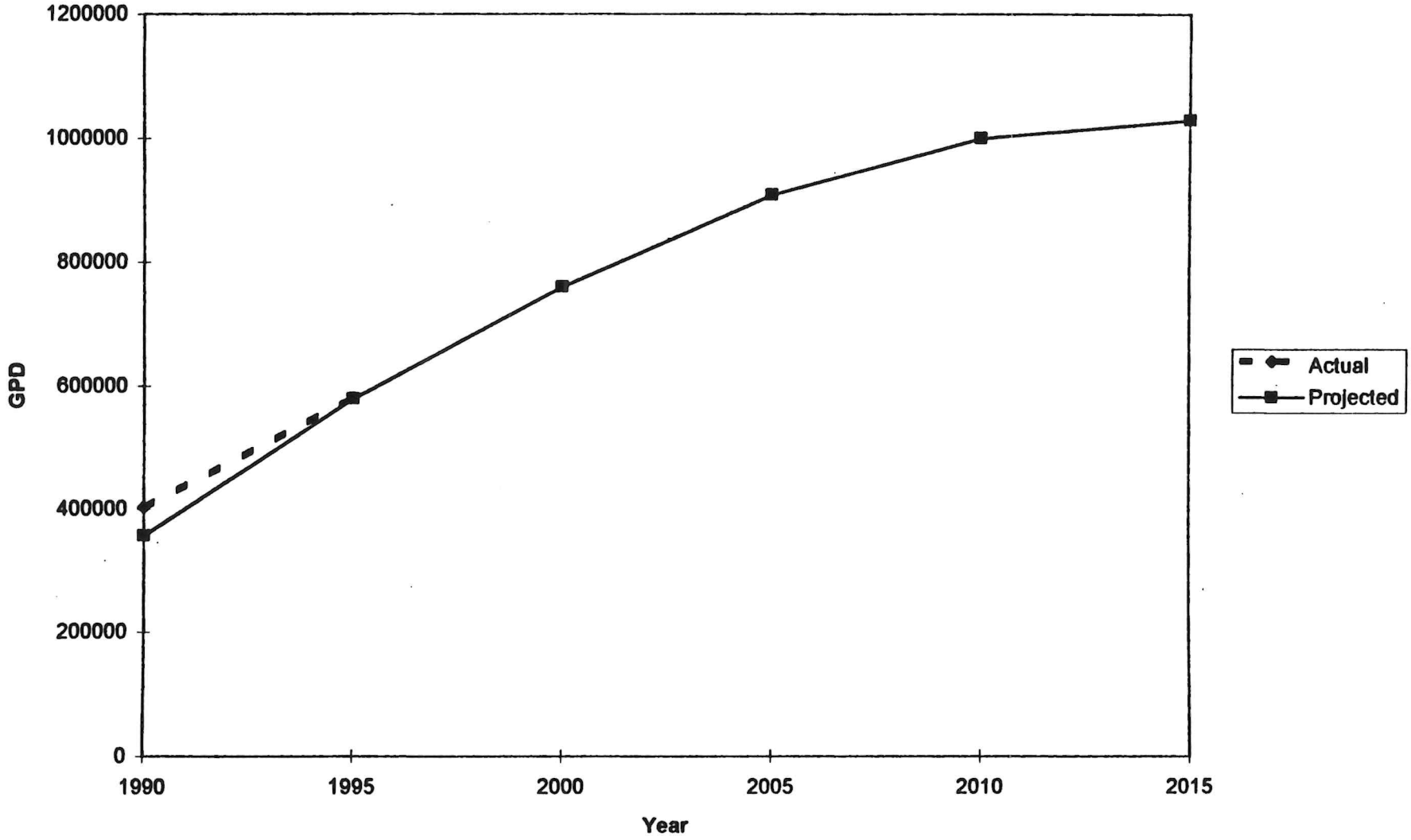


Figure 5.12

Carroll Co. W.D. No. 1: 1990 Actual Water Use

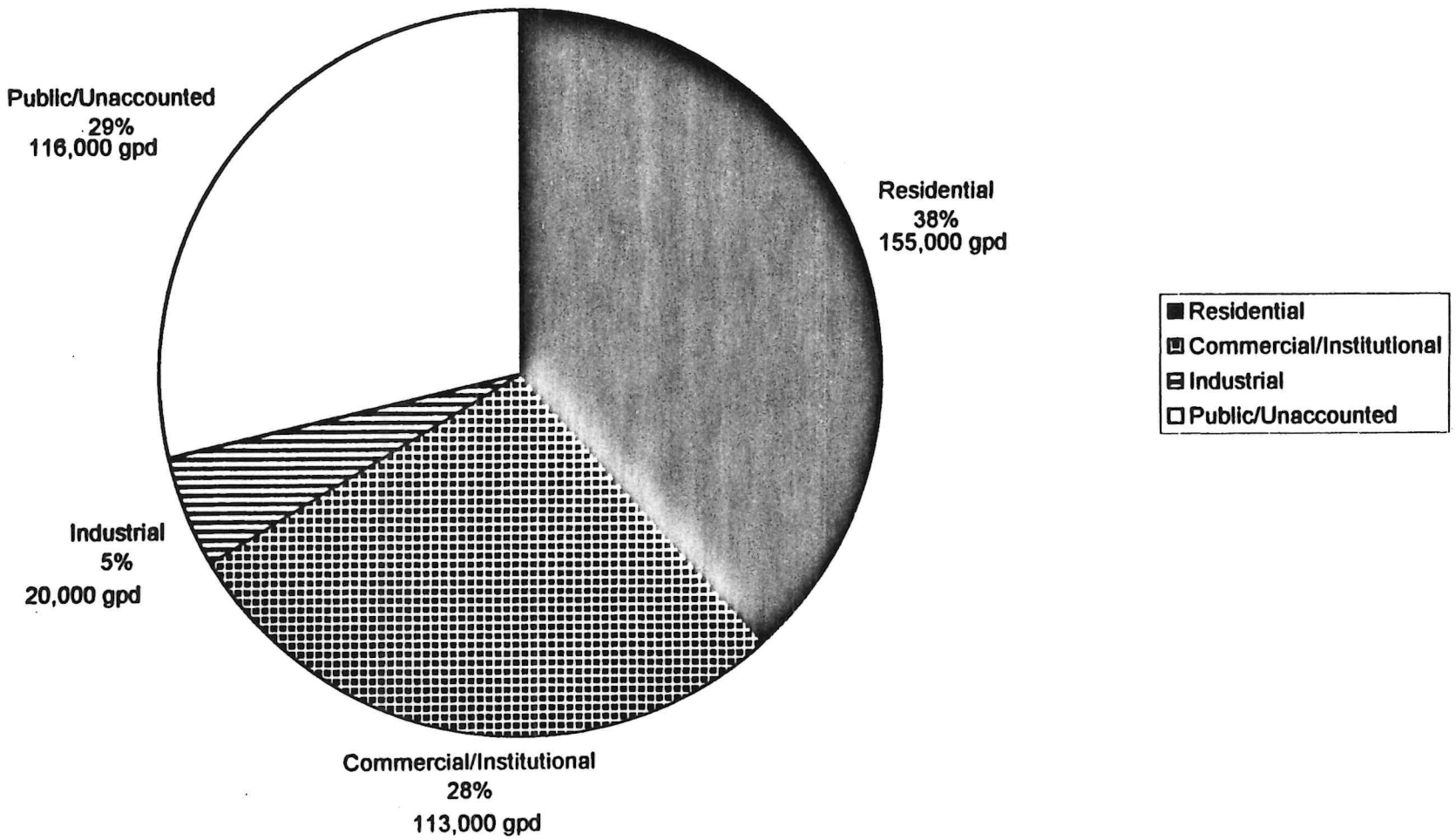


Figure 5.13

Carroll Co. W.D. No. 1: 1990 Projected Water Use

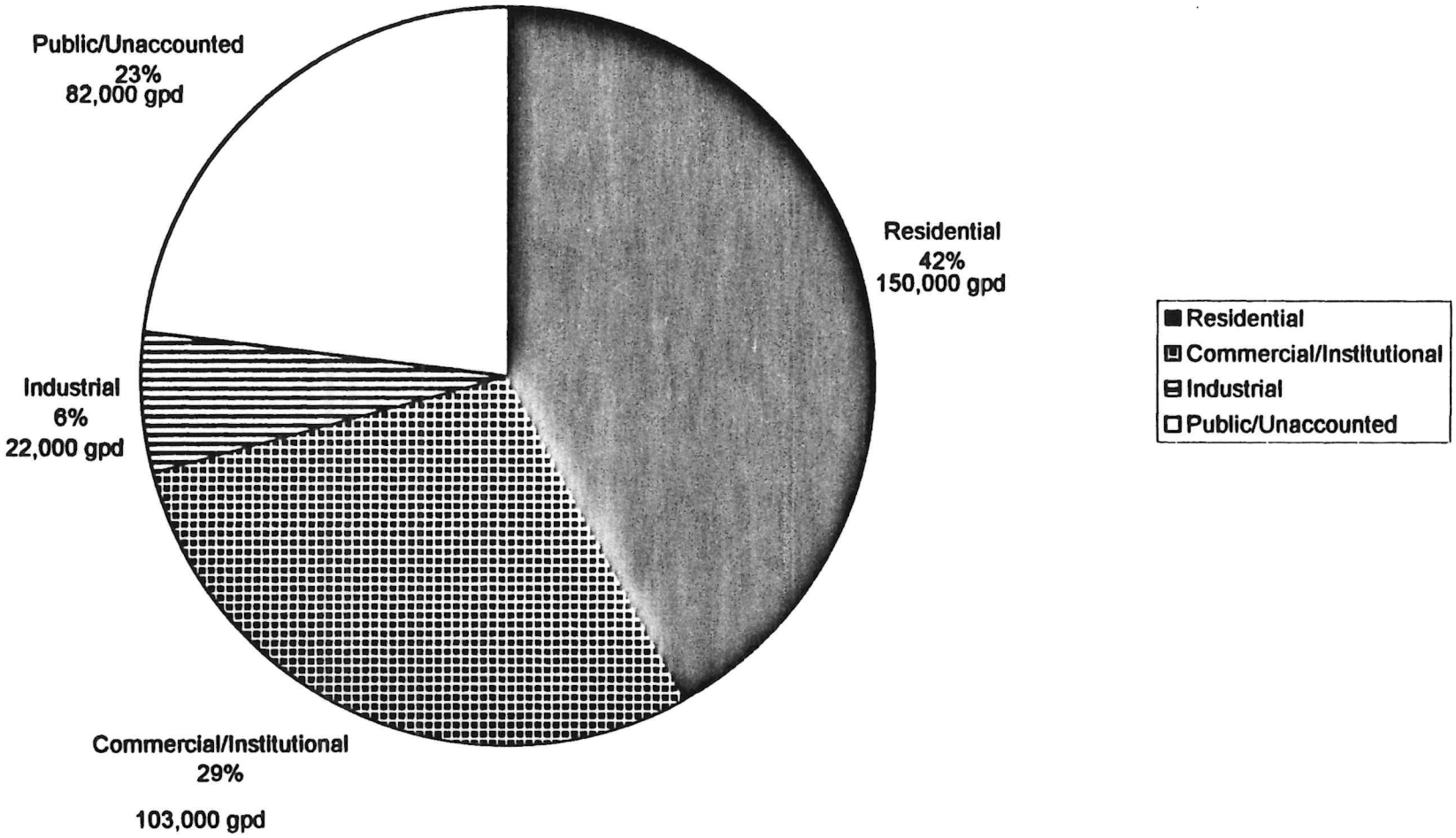


Figure 5.14

Carroll Co. W.D. No. 1: 1995 Actual Water Use

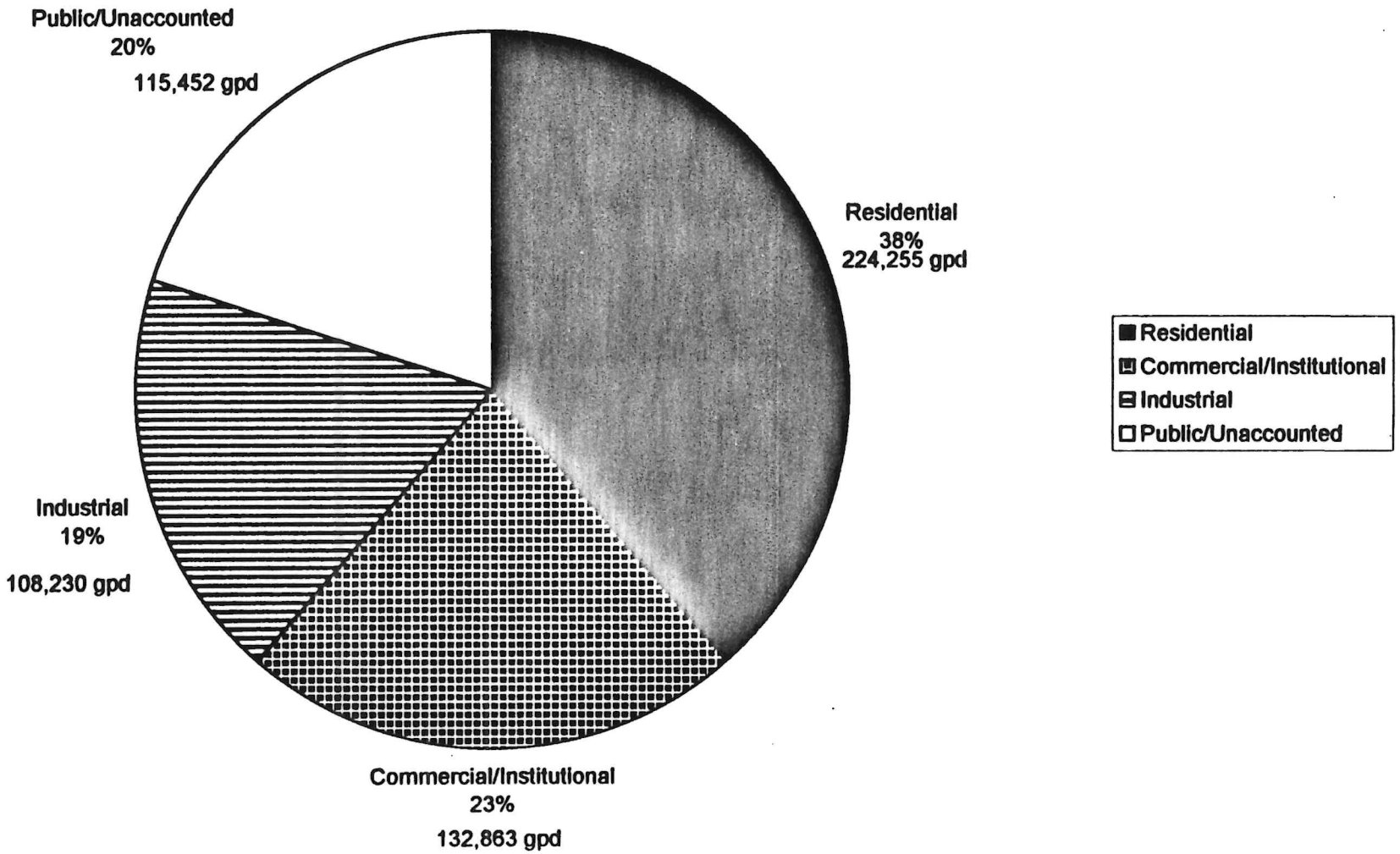


Figure 5.15

Carroll Co. W.D. No. 1: 1995 Projected Water Use

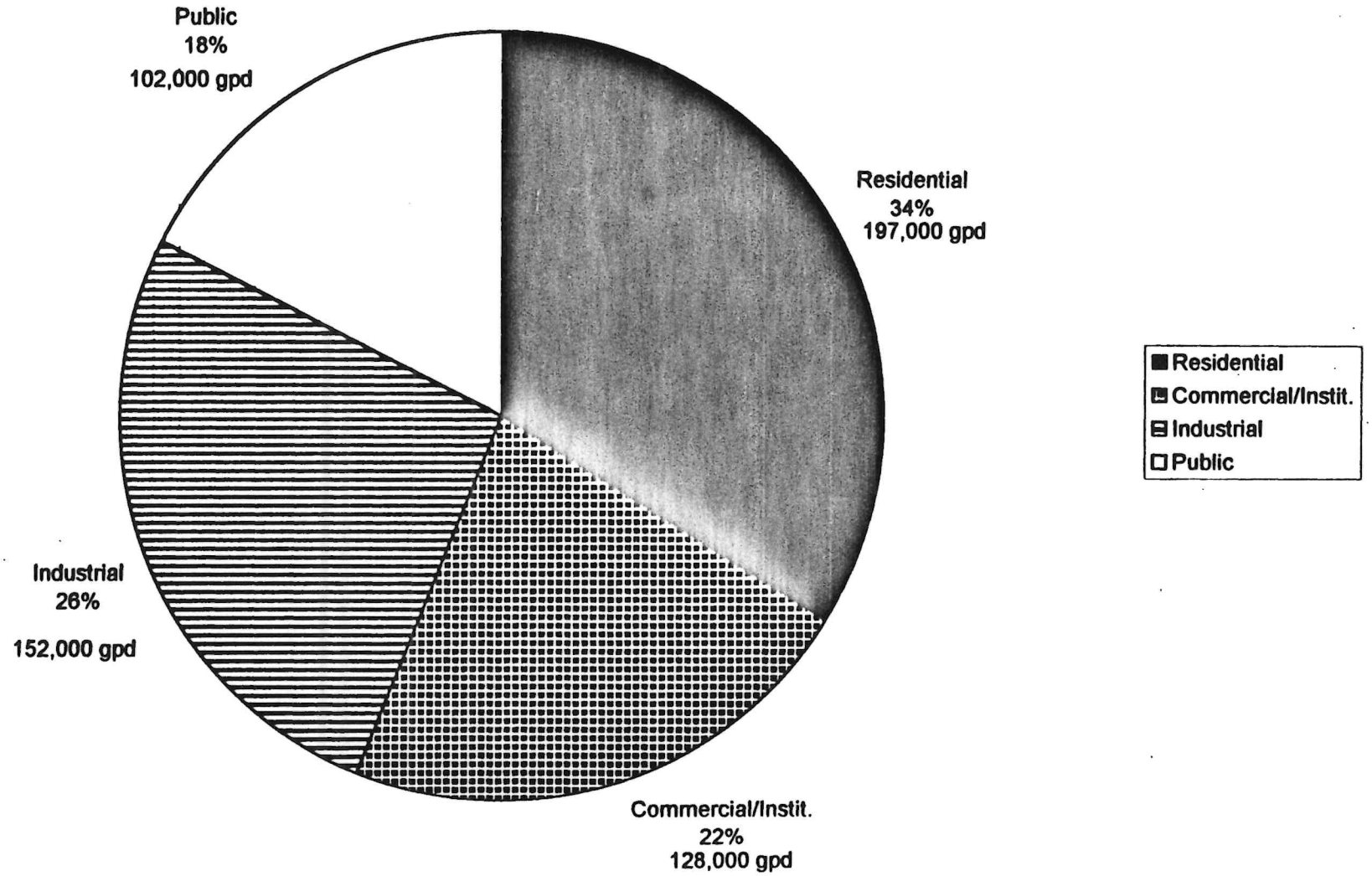


Figure 5.16

Carroll Co. W.D. No. 1: 2000 Projected Water Use

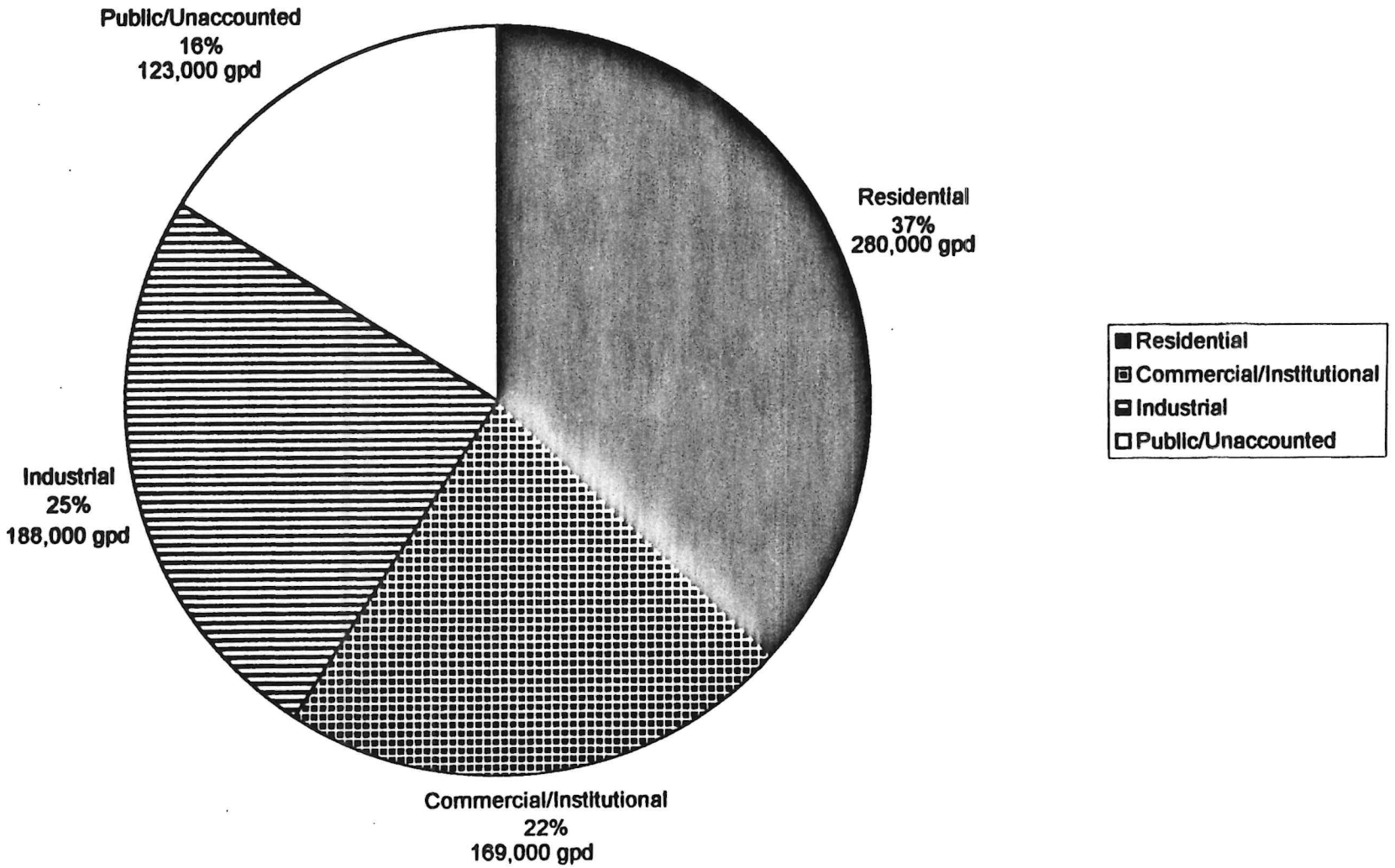


Figure 5.17

Carroll Co. W.D. No. 1: 2005 Projected Water Use

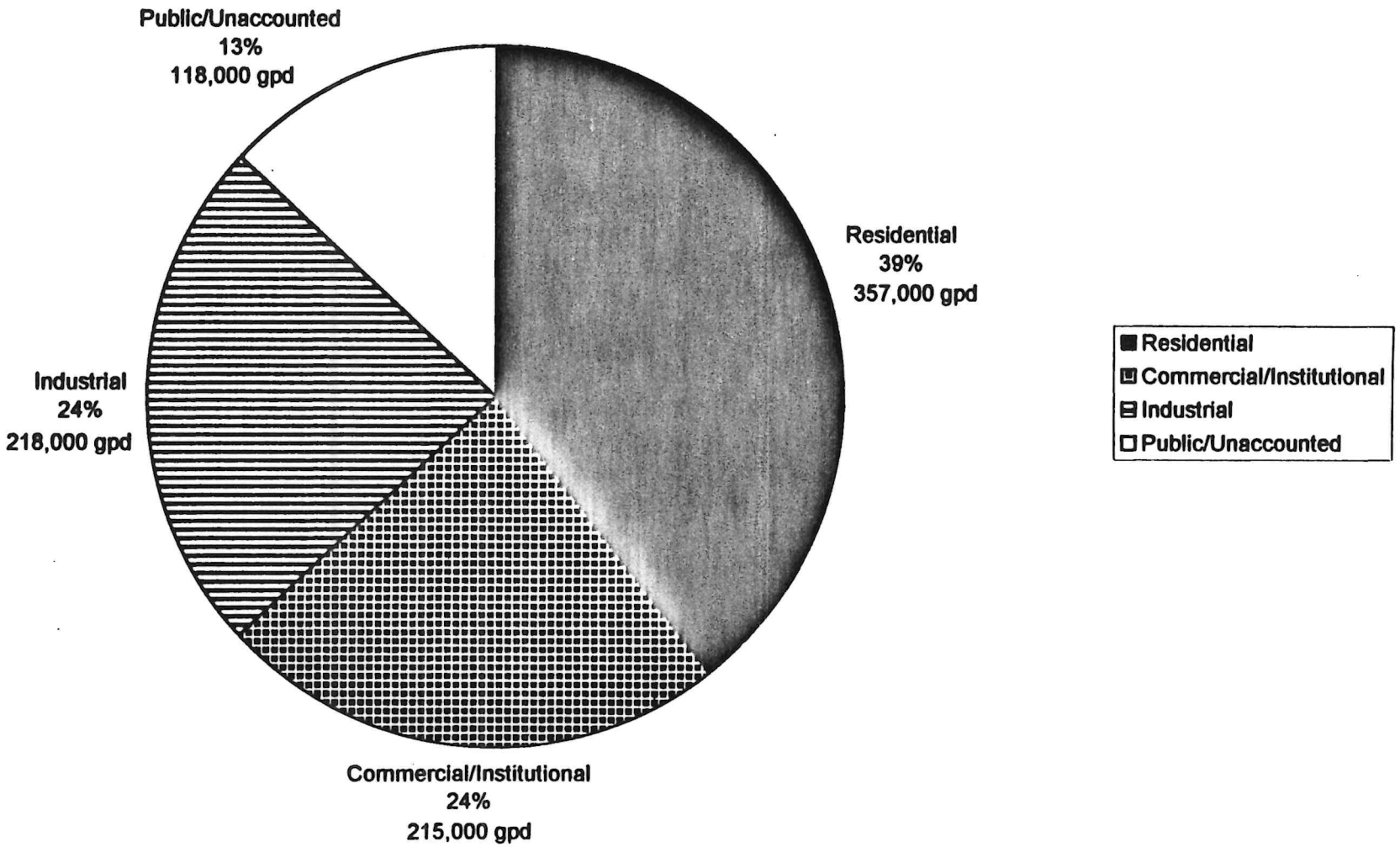


Figure 5.18

Carroll Co. W.D. No. 1: 2010 Projected Water Use

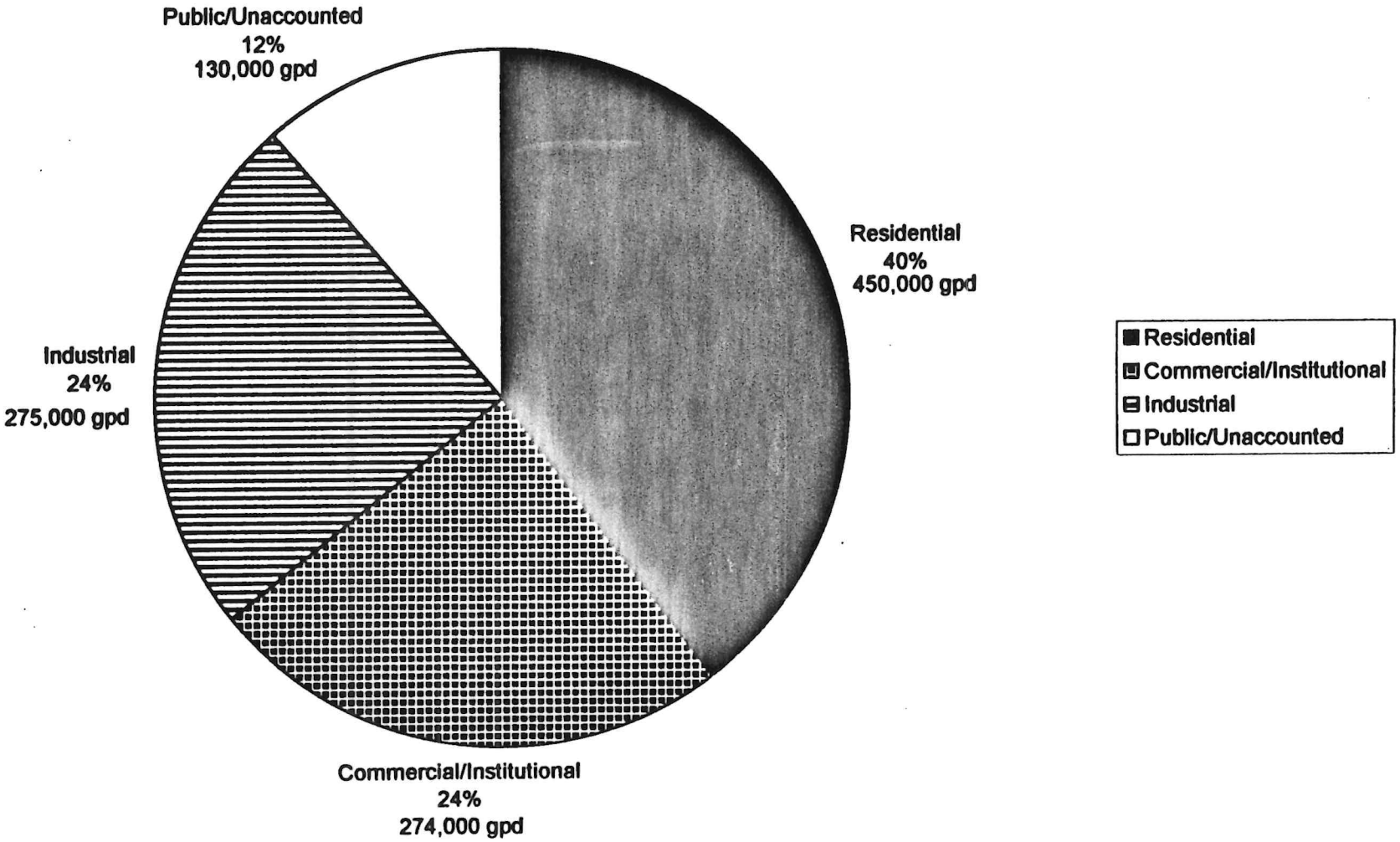
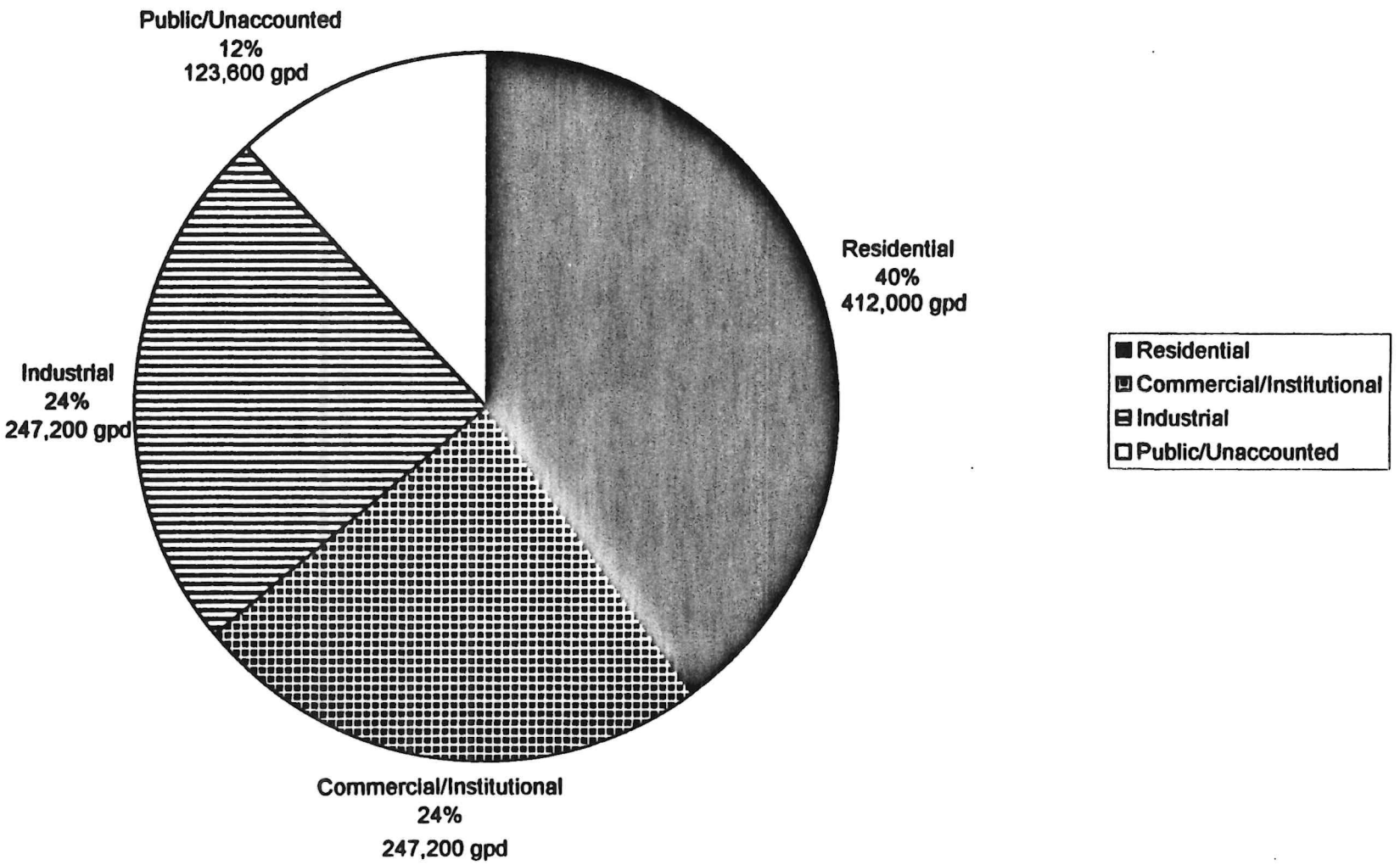


Figure 5.19

Carroll Co. W.D. No. 1: 2015 Projected Water Use



ELK LAKE WATER COMPANY

IWR-MAIN was not used to project growth for this supplier because it is a completely residential, non-growth system. The resort is primarily seasonal (and weekends), although some residents live there year-round. Average daily water use is approximately 17,000 gpd with a peak demand of 75,000 gpd. Approximately, 10 percent growth is anticipated by 2005 as the remaining resort properties are developed. Using this growth factor, water use would increase to an average of 18,700 gpd and a peak of 82,500. After the resort is fully developed, no further growth will occur because Elk Lake is not interested in serving customers outside the development. In fact, the utility has one water line that has several customers that are not located in the resort and this line will be transferred, per agreement, to Tri-Village Water District by the end of 1997.

GLENWOOD HALL RESORT AND COUNTRY CLUB

Demand projections were not prepared for this supplier because it will be taken over by Carroll County Water District No. 1 by October of 1997. Therefore, Glenwood Hall projected demand was incorporated into the Carroll County projections discussed previously.

C. INFRASTRUCTURE ASSESSMENT

This section provides a general assessment of the infrastructure and treatment capacity, where applicable, of the major water supplier and distributors in Owen County. Map 3 shows the service areas of the utilities as well as planned expansions.

Owenton Water Works

Owenton uses Lower Thomas Lake as a primary water source. The lake is supplemented with water pumped approximately 11 miles from an intake at Severn Creek, a pool of the Kentucky River. It is very expensive to pump the water uphill to the lake, with monthly electric cost of $3,000.00. The Severn Creek intake has two pumps, with one serving as a back-up, although the pumps can run simultaneously. The size of the pumps may be a limiting factor in the availability of raw water. During a recent visit by DOW staff, the pump room at the intake structure was observed to have numerous leaks. The City and Fiscal Court have recently authorized an engineering study that will look at ways to maximize raw water availability including larger pumps as an option as well as some others. Another option to increase water supply availability is dredging Lower Thomas Lake which has a siltation problem.

A new water treatment plant was completed in 1995 with a maximum treatment capacity of 1.44mgd. Currently, the plant is not operating at peak design capacity. Current capacity is approximately 800,000 gpd. To run at the full capacity, an additional ClariCone will be needed and possibly 24 hour-a-day plant operation. Figure 5.10 shows that demand will probably approach peak treatment capacity by the end of the planning period. In addition, the raw water has high levels of manganese making it difficult to treat. Owenton Water Works currently has a storage capacity of 735,000 gallons in locations noted previously. The storage system is in good condition.

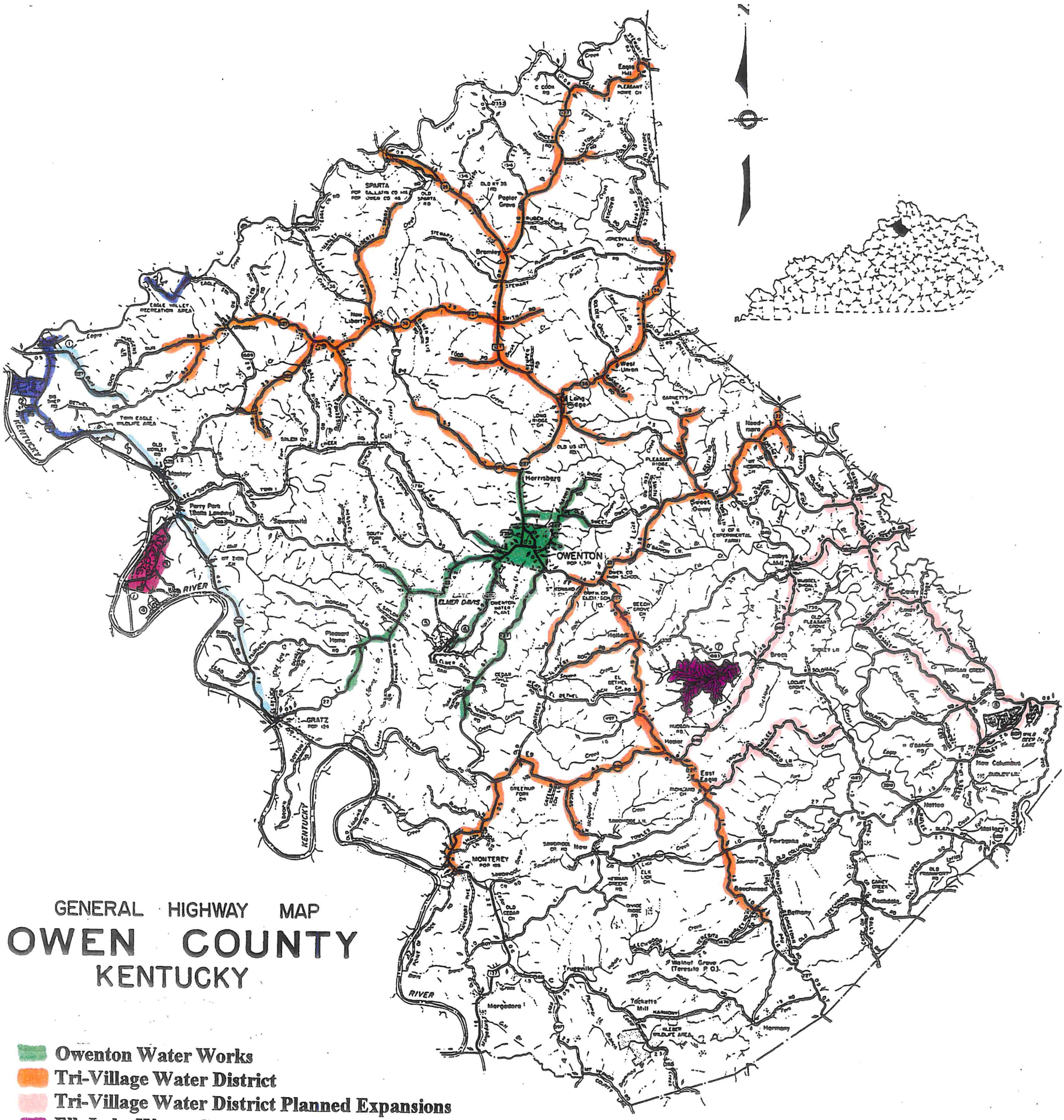
Water losses are estimated at five to ten percent. Leak detection methods include visual inspection, meters, and valving. The general condition of water lines is fair to average. Tri-Village Water District purchases approximately 50 percent of the water produced. Planned improvements include replacing old lines and fire hydrants on an annual replacement schedule.

Tri-Village Water District

Tri-Village purchases all of its water from Owenton Water Works. Tri-Village has 814,000 gallons of storage in locations noted previously. The storage system is in good condition. Water losses are estimated at 7 percent and leak detection methods include master meters and driving lines.

During the summer of 1997, during semi-drought conditions, Tri-Village experienced serious distribution problems in the northern portion of the county. Although Owenton Water Works was able to supply adequate water at good pressure to Tri-Village, residents of North Owen had little or no water pressure. County Judge/Executive Tom Olds declared a water emergency. A hydraulic study was recently completed by Gastineau and Associates to determine the cause of and solution to the problem. In the study, it was noted that the increase in customers in the Wheatley area had reduced the ability of the Water District to provide sufficient volume and pressure during periods of extremely high demand. After studying water use records, it appeared that there was an unusually

MAP 3
SERVICE AREAS



GENERAL HIGHWAY MAP

OWEN COUNTY
KENTUCKY

- Owenton Water Works
- Tri-Village Water District
- Tri-Village Water District Planned Expansions
- Elk Lake Water Company
- Glenwood Hall Resort
- Carroll County Water District No. 1
- Carroll County Water District No. 1 Planned Expansions

1 inch = 3 miles

high demand for water for agricultural purposes, such as setting tobacco, and also for residential lawn watering. The high demand prevented the storage tanks from refilling during off-peak periods as they normally would.

In the hydraulic study, analyses identified several problems in the Wheatley area. First, the Wheatley storage tank has an overflow elevation that provides only a small margin of excess pressure beyond the required 30 PSI. Second, the tank has a small head range from full to empty making it difficult to keep enough water in the tank to provide pressure under peak demand. Finally, the tank provides less than one day of storage under normal conditions. The study also noted that under present conditions, a maximum of 209 GPM (300,950 gallons) can be delivered into the Tri-Village system (Gastineau and Associates, p. 7)

The hydraulic study recommended improvements and modifications to the storage and distribution system to help alleviate the problems outlined above. The Wheatley tank should be replaced with one at a higher overflow elevation and a booster pump should be installed near the U.S 127/227 intersection. The Water District has already taken action on this recommendation and the design phase is underway. Another recommendation of the study was to re-negotiate the contract with the City of Owenton to provide a maximum delivery rate of 433 GPM (an increase from the current rate of 225 GPM). To increase the delivery rate, piping between Owenton and the Bromley storage tank would need to be enlarged. Finally, the flow tests conducted for the study suggested that there may some major restriction in the 12 inch line of the City of Owenton that serves Tri-Village. Further tests are needed (Gastineau and Associates, p. 8).

Growth is anticipated in this system and the Service Area map shows a planned expansion estimated to cost $1.7 million. No single user purchasing 20 percent or more of the water was identified.

Elk Lake Water Company

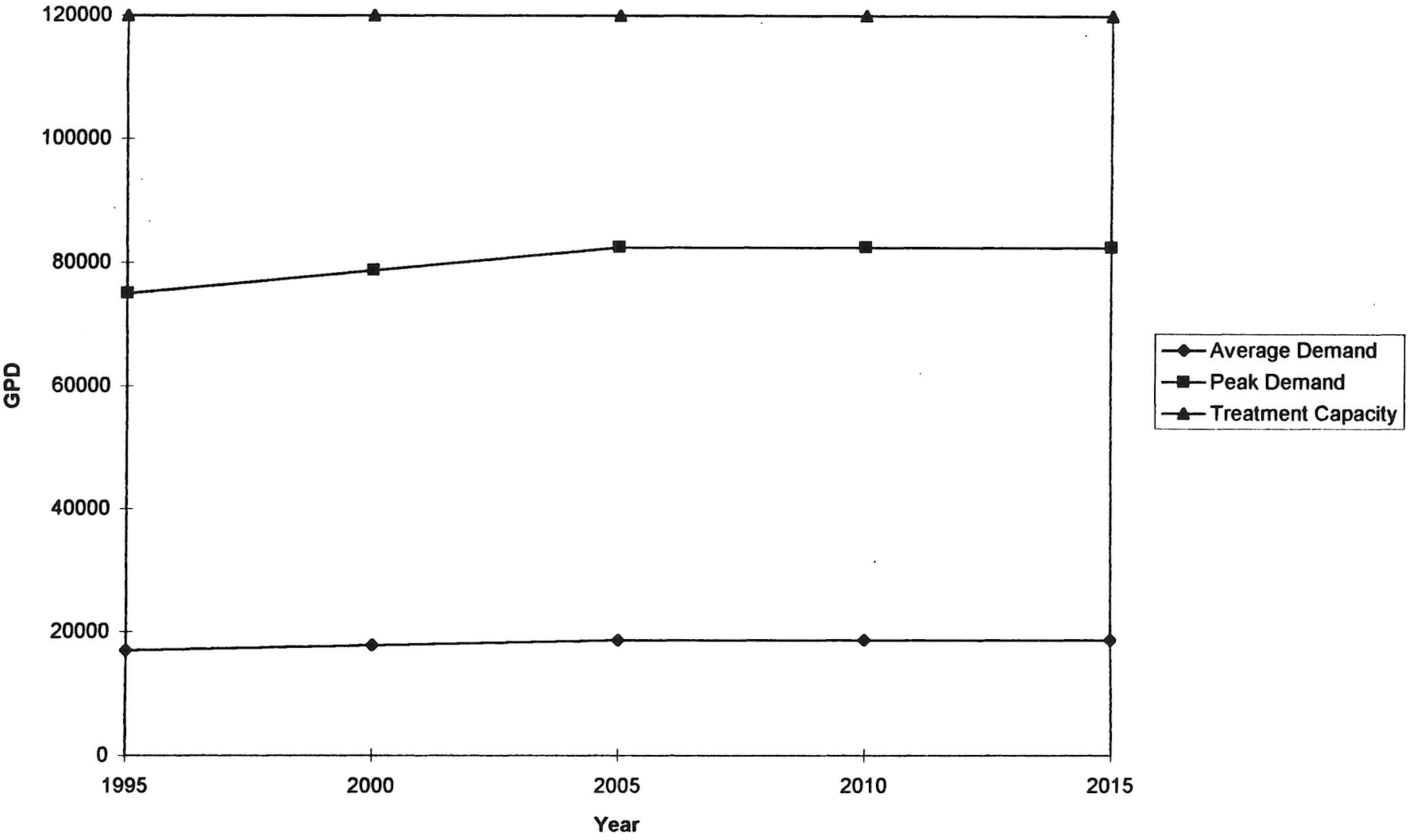
The Elk Lake Water Company uses a reservoir adjacent to and slightly elevated from Elk Lake. The treatment plant, constructed in 1961, has a capacity of 120,000 gpd and uses chemical processes for treatment. Average daily water use is 17,000 gpd with a peak use of 75,000 gpd. Figure 5.20 shows that treatment capacity is adequate for demand during the planning period. Water use is seasonal since this is a private resort with camps and summer homes. Some of the properties are used on a year-round basis. All the users are residential and the distribution system is in good condition. Storage consists of a 100,000 gallon standpipe. Water losses are estimated at 15 percent. Planned improvements include a new chemical mixing room. No accessibility problems related to intake elevation or pump capacity were identified.

Glenwood Hall Resort & Country Club

This water supplier will cease operations by the summer of 1998 when Carroll County Water District No. 1 begins service. The treatment plant, constructed in 1970, has a capacity of 72,000 gpd and is in poor condition. As a result of the treatment plant condition, this utility has had difficulty in hiring a certified operator. Storage capacity is 87,000 gallons in a tank at grade. More storage is needed. Water losses are estimated at six percent. Leak detection methods include visual inspection and comparing water sales with master meter readings.

Figure 5.20

Elk Lake Water Company: Projected Demand Vs. Treatment Capacity



Carroll County Water District No. 1

Carroll County Water District No. 1 uses groundwater as a source and currently has a treatment capacity of 756,000 gpd as rated by the Division of Water. An expansion of the Ghent treatment plan is expected to be completed by October of 1997 increasing DOW rated treatment capacity to at least 1 mgd. Functionally, treatment capacity will be approximately 1.2 mgd. Comparing projected demand to treatment capacity, capacity is adequate for the planning period (Figure 5.21).

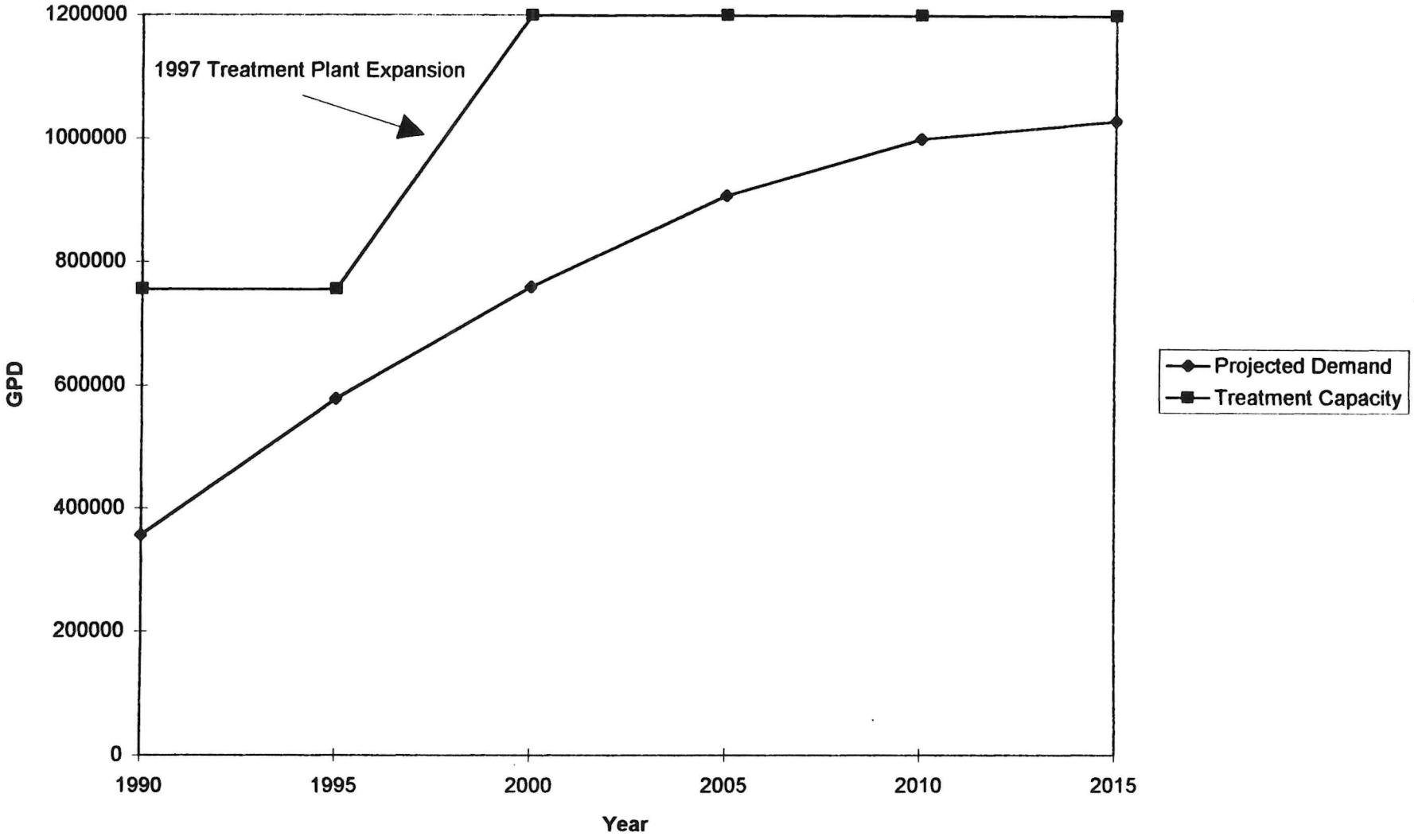
Total storage is 400,000 gallons in locations noted previously. A 150,000 gallon storage tank, located across from the Kentucky Utilities facility, will be completed by October of 1997. Another 100,000 gallon tank is planned for the Gratz area. Storage capacity is considered adequate for a typical day; however, with the large industrial users, it is possible to deplete all the storage within a few hours.

A new well has been drilled and is being used in Gallatin County and another well will be drilled soon, also in Gallatin County. Water losses are estimated at 14.3 percent. Leak detection methods include visual inspection and sequencing valve closures while monitoring appropriate locations with leak detectors. Overall, water lines are in good condition. No single user was identified that purchases 20 percent or more of the water produced. The system is metered.

Major expansions in Owen County are planned for the summer of 1998 when CCWD takes over service at Glenwood Hall Resort and extends service to the City of Gratz.

Figure 5.21

Carroll Co. W.D. No 1: Projected Demand Vs. Treatment Capacity



CHAPTER 6
WATER SUPPLIER SOURCE ASSESSMENT

I. INTRODUCTION

Owenton Water Works and Elk Lake Water Company rely on surface water as a water supply source. Glenwood Hall uses groundwater; however, as noted previously, Glenwood Hall will be served by Carroll County Water District No. 1 by the summer of 1998. Carroll County Water District No. 1 uses groundwater.

II. GEOLOGY AND SOIL CHARACTERISTICS

Geology

The geologic characteristics of the county were discussed in some detail in Chapter 1. Please refer to this section.

Soils

There are three major soil associations in Owen County: Otwell-Nolin- Markland, Lowell-Nicholson, and Eden. A generalized soils map can be found in Appendix E.

Eden Association soils predominate in Owen County comprising over 77 percent of the total land area. These soils are found on highly dissected uplands that have narrow ridgetops and narrow bottom lands. These soils are underlain by soft calcareous shale that has thin layers of limestone and beds of siltstone. The soils are fairly deep, contribute to rapid run-off, and have severe potential for erosion.

Otwell-Nolin-Markland Association soils make up approximately six percent of the county's land area. These soils are generally found on stream terraces and flood plains along the Kentucky River and Eagle Creek. Otwell soils are nearly level to sloping and are deep, moderately well-drained soils that have a loamy subsoil and a fragipan. Nolin soils are nearly level and can be found on flood plains. They are deep, well-drained soils that have a loamy subsoil. Markland soils are gently sloping to steep and are on stream terraces. They are deep, moderately well-drained to well-drained, with a clayey subsoil.

Lowell-Nicholson Association soils comprise 17 percent of the county's land area. The soils are underlain by limestone, calcareous shale, and beds of siltstone. Lowell soils are found on sloping to gently sloping hillsides and ridgetops. The soils are deep, well-drained, and have a clayey lower subsoil. Nicholson soils are gently sloping and are also found on fairly broad ridgetops. They are deep, well-drained to moderately well-drained, with a fragipan.

Hydric Soils

Hydric soils are defined as those which are saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions in the upper layer. Hydric soils may be an indication of wetlands. A wetland, under current definition, will include hydric soils, hydrophytic vegetation, and wetlands hydrology. In Owen County, Robertsville silt loam and Zipp silty clay loam are the only hydric soils. There are approximately 570 acres of Robertsville soil or .3 percent of the land area. There are only 90 acres of Zipp silty clay loam. These soils are found primarily in the northern portion of the county along Eagle Creek; however, there are also some areas in the bottomlands along the Kentucky River.

III. SOURCE ASSESSMENT

Owenton Water Works

Owenton's sources are Lower Thomas Lake (primary) and Severn Creek (supplementary). Lower Thomas Lake has a very small watershed with a drainage area of only 160 acres or .25 square miles. Normal pool volume of the lake is estimated at 50 million gallons. With an average 1996 withdrawal rate of 653,000 gpd, the lake provides approximately 76 days of storage. The lake essentially serves as a storage basin because Owenton pumps water into the lake from Severn Creek, a distance of approximately 12 miles. City officials estimate that if the pumps from Severn Creek to the lake were inoperable for some reason, that the lake would only provide 14 days of storage, particularly during the dry summer months. Applying minimum adequacy standards to current water use, it is apparent that Lower Thomas Lake does not hold the minimum 200 days of storage.

The intakes at Severn Creek are located in a pool of the Kentucky River. When the level of the Kentucky River falls, the backwater becomes dangerously low and very stagnant creating both water quality and quantity problems. In addition, Severn Creek has been observed in the summer to have virtually no discernible flow at all. In the summer of 1996, the Severn Creek pool dropped to within a few inches of the intake. Maps 4 and 5 show the recommended protection areas for both sources.

Elk Lake Water Company

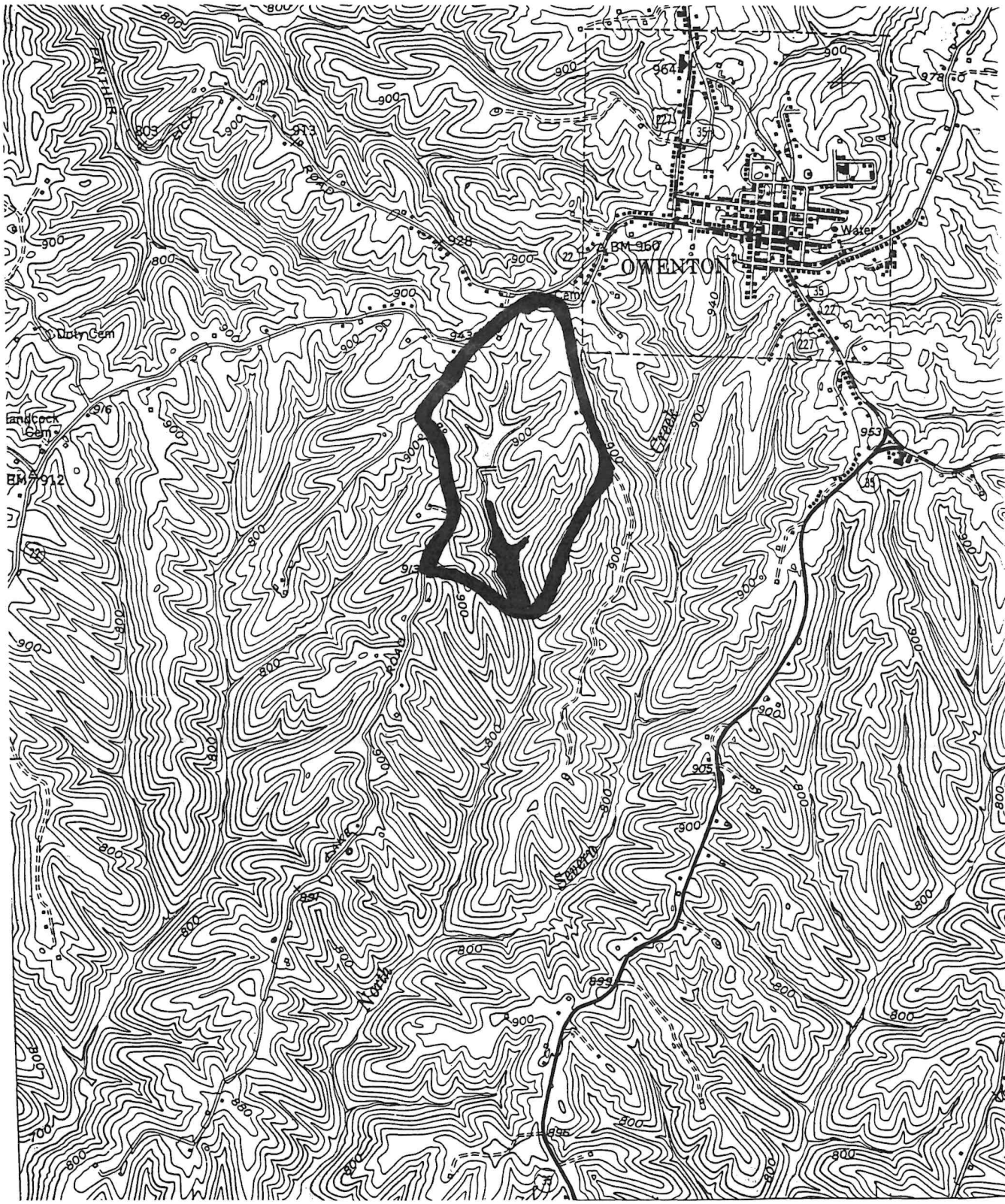
Elk Lake Water Company uses a private reservoir, adjacent to and slightly elevated from Elk Lake, for its water supply which has a normal pool volume of 81,462,857 gallons. Average daily usage is approximately 17,000 gpd and maximum daily usage is 75,000 gpd. The following calculations show that the source meets the minimum adequacy standard of 200 days for reservoirs with small watersheds.

Elk Lake Normal Pool Volume: 81,462,857 gallons
Elk Lake Water Company Average Use: 17,000 gpd
Number of Days to Deplete Source at Average Demand: 4,791
Number of Days to Deplete Source at Maximum Demand: 1,086
Number of Days to Deplete Source at Average 2015 Demand: 4,356
Number of Days to Deplete Source at Maximum 2015 Demand: 987

Map 6 shows the recommended protection area.

MAP 4

LOWER THOMAS LAKE: RECOMMENDED PROTECTION AREA

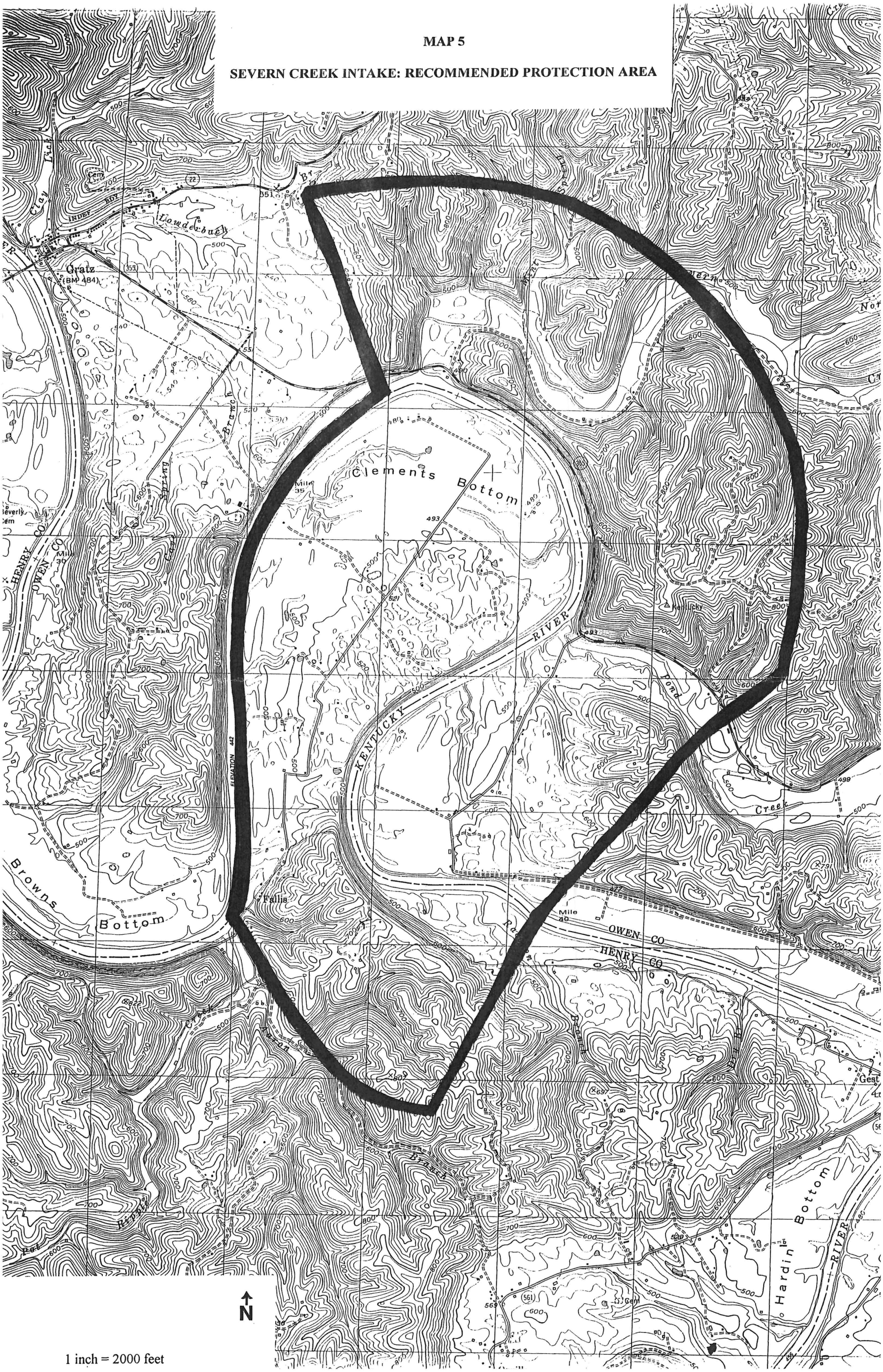


1 inch = 2000 feet

N

MAP 5

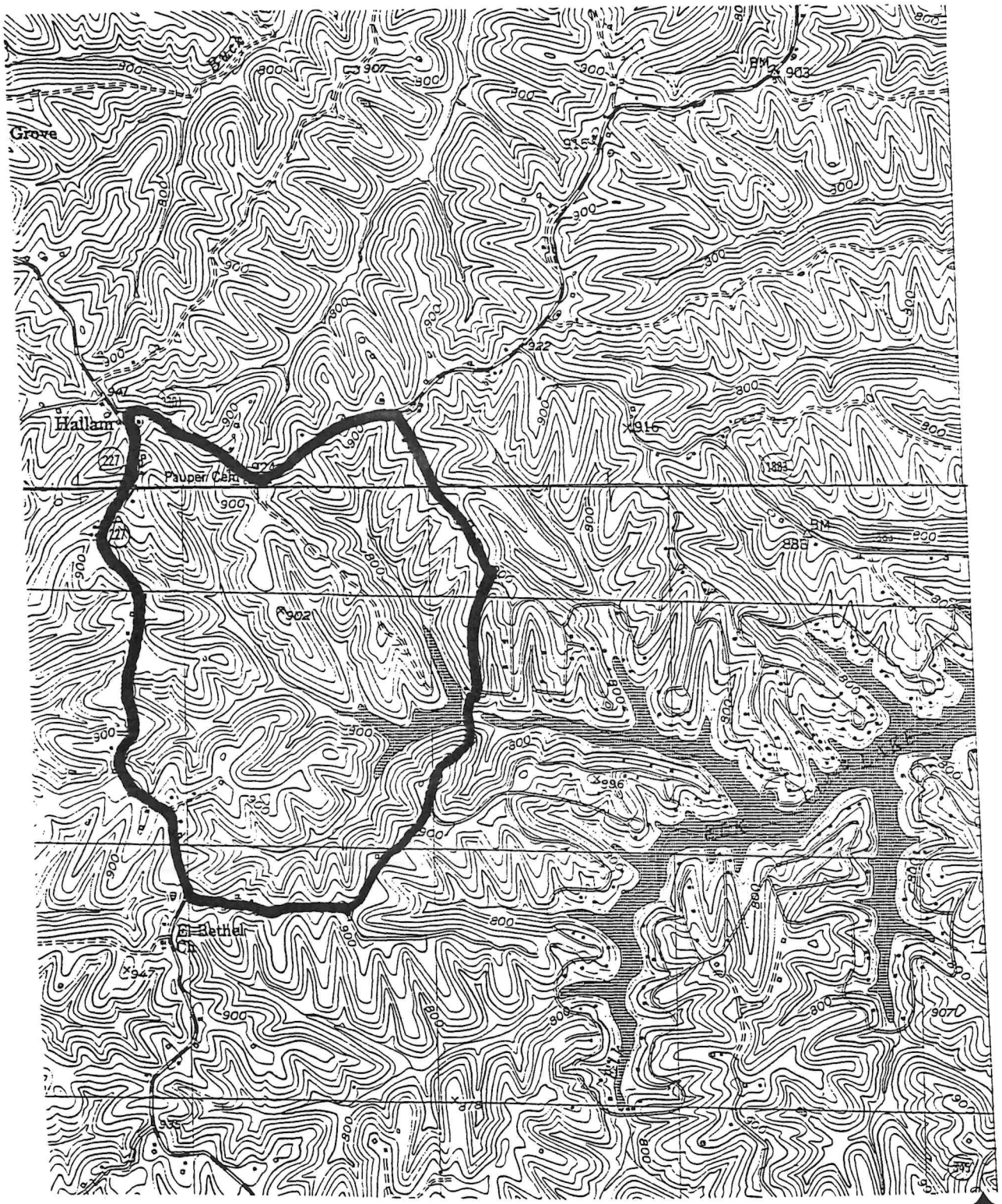
SEVERN CREEK INTAKE: RECOMMENDED PROTECTION AREA



1 inch = 2000 feet

MAP 6

ELK LAKE WATER CO. RESERVOIR: RECOMMENDED PROTECTION AREA



1 inch = 2000 feet

N

Glenwood Hall

This source was not assessed because this water supplier will be served by Carroll County Water District No. 1 by the summer of 1998. The scheduled completion date for the wellhead protection plan is July 1999. However, it is anticipated that the wells will be abandoned and that no protection plan will be necessary. The planning representative will work with the supplier to ensure that DOW is kept informed of the status of the well as a drinking water source and that all proper procedures are followed with regard to abandonment. Map 7 shows the location of the water supply well and uses a fixed radius as a protection area.

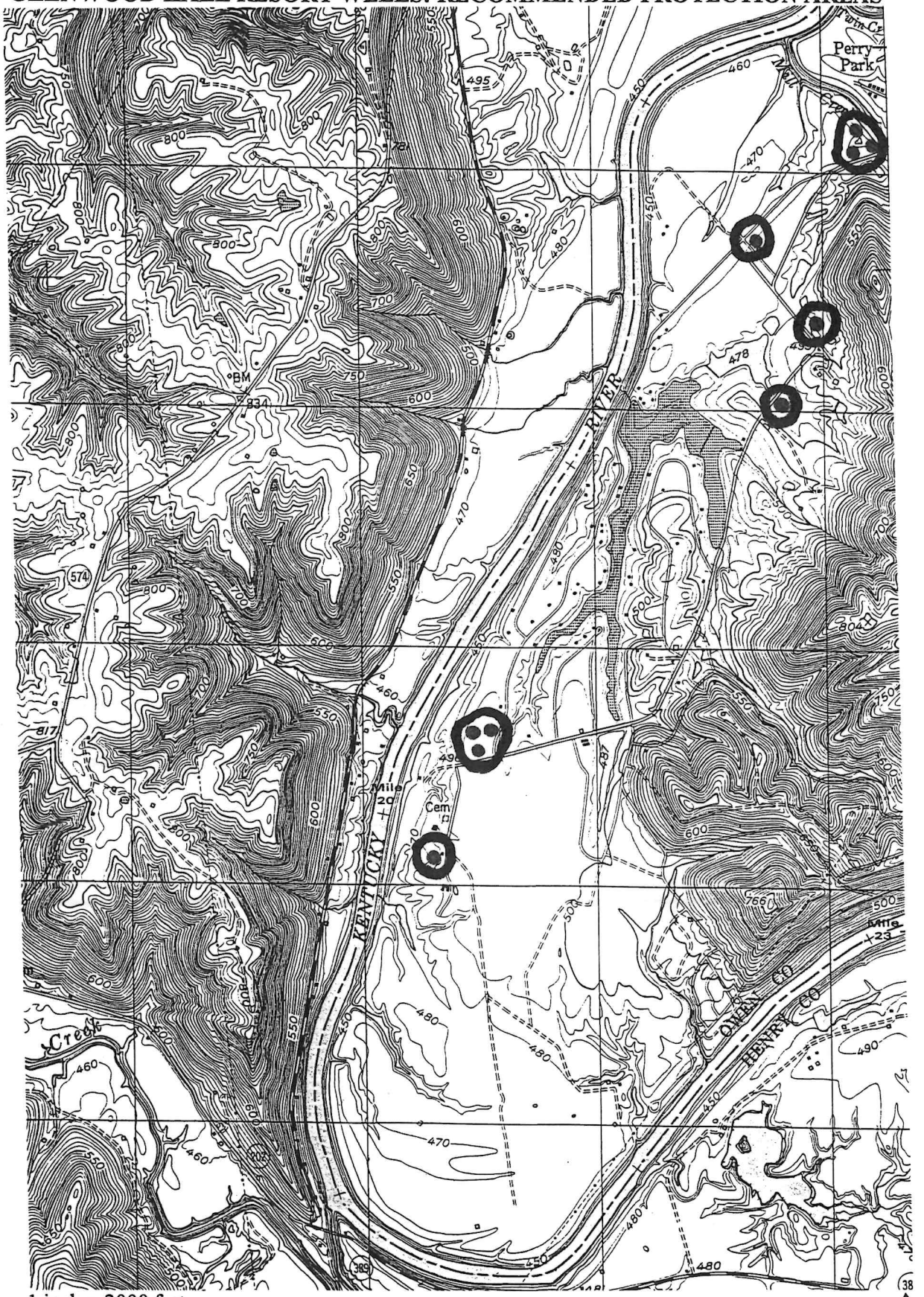
Carroll County Water District No. 1

Currently, no information is available regarding safe yield, specific capacity, or zone of contribution for this supplier's wellfields. However, an extensive study of the hydrogeology of the Ohio River alluvial aquifer in Carroll and Gallatin Counties has recently been completed by the U.S. Geological Survey. A groundwater flow simulation model was also developed. The draft study and computer model will contain all the information necessary for water supply adequacy assessment and wellhead protection. As soon as the data is received, the information will be incorporated into this plan. The wellhead protection plan is scheduled for completion is August of 1998.

Table 6.1 shows the source availability for the suppliers in the county.

MAP 7

GLENWOOD HALL RESORT WELLS: RECOMMENDED PROTECTION AREAS



1 inch = 2000 feet

● = well

Table 6.1
SOURCE AVAILABILITY

PUBLIC WATER SUPPLIER	SOURCE	SOURCE TYPE	NORMAL/1	MINIMUM/2	DROUGHT/3
Owenton Water Works	**Lower Thomas Lake**	Reservoir	50 mg	unknown	unknown
	(Primary Source)				
	Severn Creek	Stream	unknown	unknown	unknown
	(Secondary Source)				
Elk Lake Water Company	**Elk Lake Water Supply Reservoir**	Reservoir	81.5 mg	unknown	unknown
Glenwood Hall Resort	**Wells**	Groundwater	unknown	unknown	unknown
Carroll County Water District No. 1	**Wells**	Groundwater	not available*	not available*	not available*
*Anticipate having this data for Carroll County Water Supply Plan when U.S.G.S. draft study is made available. Anticipated by November, 1997.					
Owen County Plan will be updated to reflect this.					
Footnotes	**Streams**	**Reservoirs**	**Wells**		
1/	Lowest Flow Month	Full Reservoir	Specific Capacity		
2/	7Q10	7Q10 Inflow	Specific Capacity		
3/	7Q20	7Q20 Inflow	Safe Yield		

CHAPTER 7
WATER SUPPLY ADEQUACY

I. Adequacy Standards

The Owen County Water Supply Planning Council elected to provide a continuous level of supply where humanly possible and to encourage conservation where possible.

II. Application of Adequacy Standards

Owenton Water Works

Owenton Water Works is the major supplier in the county. The utility relies on Lower Thomas Lake as its primary source and Severn Creek as a supplemental source. As discussed previously, Lower Thomas Lake is currently an inadequate source because it only provides 76 days of storage at present water use levels. Siltation has greatly reduced the volume of the reservoir. Lower Thomas Lake also has a very small watershed. The City owns the lake and restricts access. Therefore, there are no competing users.

The Severn Creek intake is located in a backwater pool of the Kentucky River. Severn Creek has been observed to have virtually no flow during dry summer months. City personnel indicated that during a dry period in the summer of 1996, water levels dropped to within a few inches of the intake. City personnel also estimate that if water from Severn Creek were not available, particularly during high demand summer months, that Thomas Lake would only provide two weeks of supply. Water levels at the Severn Creek intake are influenced by the rise and fall of the Kentucky River. There are no competing users on Severn Creek and downstream users on the Kentucky River are not impacted by Owenton's withdrawals.

As a result of these inadequacies and Owenton's position as the county's major water supplier, water supply alternatives will be studied in Phase II.

Elk Lake Water Company

Elk Lake Water Company uses a reservoir with its own dam that is adjacent to Elk Lake. This private reservoir is an adequate source of water for both average and peak demand throughout the planning period. Since the water supply reservoir is separated from Elk Lake, recreational users are not impacted by or competing with water supply withdrawals.

Glenwood Hall Resort

This supplier's source is assumed to be adequate; however, it will be served by the Carroll County Water District No. 1 by the summer of 1998. This is a good solution since the treatment plant is in poor condition. No competing users of the alluvial aquifer were identified.

Carroll County Water District No. 1

The U.S.G.S. study, discussed previously, indicates that the Ohio River alluvial aquifer is an adequate source throughout the planning period (supporting data will be included as soon as it is available).

In addition, as a part of the study, a groundwater flow simulation model was developed. The model will allow users to study the impact of increased withdrawals or new withdrawals on the aquifer. There are a number of competing users of the aquifer including other water suppliers and industries. The water suppliers and industries are cooperating and sharing information to maintain the aquifer as a viable resource for all users.

CHAPTER 8
SUPPLY PROTECTION

This chapter evaluates the risk of contamination and degradation from both point and non-point sources of pollution for each water supply source. The impact of soil and geologic characteristics on supply protection are also considered. After evaluating risks, local supply protection measures are described and additional supply protection recommendations are made.

I. RISKS

Contamination of the water supply can come from both point and non-point sources. Point source pollution comes from a specific location such as a single pipe. An example would be a wastewater treatment plant. In contrast, non-point source pollution can be generated by agriculture, urban development, aging and poorly maintained septic systems, construction sites, roads and parking lots, lawns treated with pesticides and fertilizers, mining, and a variety of other sources. Unlike point source pollutants which enter the environment at well-defined locations and in relatively even discharges, non-point source pollutants usually enter surface water and ground water through surges associated with rainfall, thunderstorms, or snowmelt.

LOWER THOMAS LAKE

Lower Thomas Lake, with a small drainage area of 156 acres, feeds the Owenton treatment plant. The water level in the lake is maintained by pumping from the Kentucky River. The lake is owned by the City of Owenton and there are no other permitted uses.

Point Sources

The houses in the watershed are not served by a central sewer system and therefore, rely on septic systems for wastewater disposal. It is possible that some of the septic systems are aging or poorly maintained (refer to Map 4 for locations of housing units).

Non-Point Sources

A potential non-point source is run-off from the roads in the watershed. Road run-off could possibly be polluted by motor oil, gasoline, or road salt. Table 8.1 summarizes non-point sources.

Soils

The predominant soil in the watershed is EfE3. This soil is characterized by a clayey surface layer and is 15 to 25 percent thin limestone and siltstone flags. The soil erodes easily and has moderately slow permeability.

Security of Access

As mentioned previously, the City owns the lake and has restricted access to the reservoir with a gate across the entry road.

Table 8.1
POTENTIAL CONTAMINATION SOURCES

WATER SOURCE	SOURCES OF POLLUTION	Short-Term Vs. Long-Term Hazard	Chance of Contaminant Release	Contaminant Hazard
Lower Thomas Lake				
	Septic Systems	Long-Term	Moderate to High	Low
	Road Run-Off	Long-Term	Low to Moderate	Low to High
Severn Creek				
	Agriculture	Long-Term	Moderate	Low to Moderate
	Septic Systems	Long-Term	Moderate	Low
	Road Run-Off	Long-Term	Moderate	Low to High
	Residential Development	Long-Term	Low	Low
Elk Lake Water Reservoir				
	Septic Systems	Long-Term	Moderate to High	Low
	Road Run-Off	Long-Term	Low to Moderate	Low to High
Glenwood Hall				
	Residential Development	Long-Term	Low to Moderate	Low to Moderate
	Golf Course Maintenance	Long-Term	Moderate	Low to Moderate
Carroll Co. W.D. No. 1				
	Not Available*	Not Available*	Not Available*	Not Available*

* Information will be added when wellhead protection plan is completed.

SEVERN CREEK INTAKE

The Owenton intake is located in Severn Creek, in a backwater pool of the Kentucky River. The recommended protection area, which is the Zone of Critical Concern, is an isolated and undeveloped area.

Point Sources

There is no sewer service in this area so aging and poorly maintained septic systems are a potential contaminant source. Map 8 shows the location of the housing units.

Non-Point Sources

Agriculture is the primary non-point source in the protection area. Most of the agricultural activity is located in the bottom land along the Kentucky River. Map 8 shows the areas of agricultural activity. Agricultural activity in the area is primarily concentrated on crop cultivation. The area surrounding Severn Creek is forested and there is no agricultural activity. There is widely scattered residential development with a total of 62 housing units in the protection area. Run-off from KY 355 is a potential contaminant source.

Soils

The primary soil around the intake and adjacent to Severn Creek is NO. NO soil, a silty clay loam, is subject to flooding and has a permeability of .6 to 2.0 inches per hour. EfE3 (described previously) can be found along the steep areas bordering the creek.

Security of Access

There is no security of access. The intake structure is locked and gated; however, trespassers regularly shoot off the locks. Because of the remote location, 24-hour-a-day security would be necessary to prevent trespassing; however, that is not financially feasible. Of course, Severn Creek and the Kentucky River have no security of access.

ELK LAKE WATER RESERVOIR

The water supply reservoir is physically separated from Elk Lake by a dam.

Point Sources

Also, while there are only a few homes in the watershed, there is no centralized sewer system (refer to Map 6 for location of housing units). Therefore, aging or poorly maintained septic tanks could be a potential contaminant source.

Non-Point Sources

Run-off from the road located in the watershed is a potential contaminant.

Soils

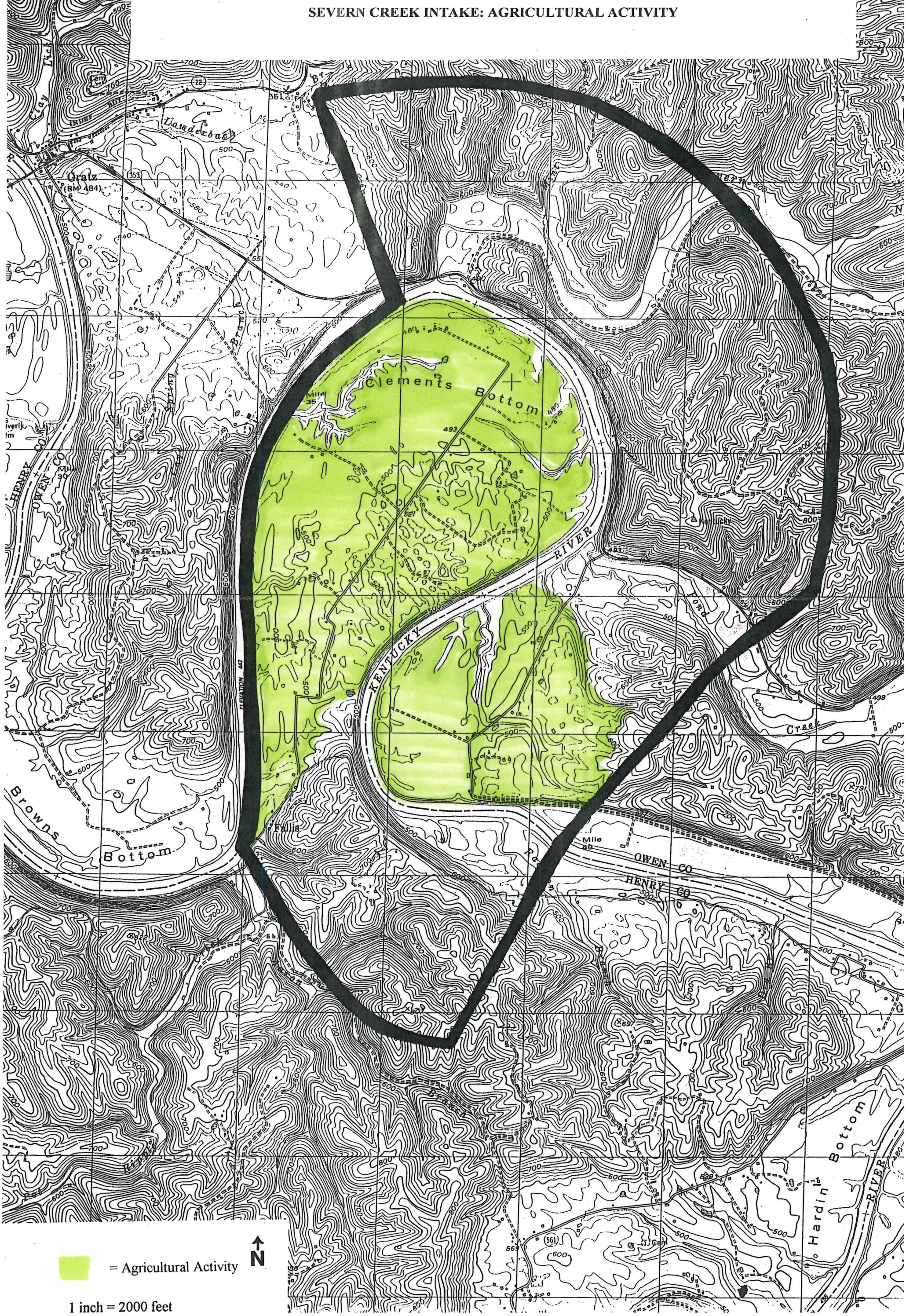
The primary soil in the watershed is EfE3 which was described previously.

Security of Access

Access into the Elk Lake Resort is limited because there is a guard shack.

MAP *8*

SEVERN CREEK INTAKE: AGRICULTURAL ACTIVITY



GLENWOOD HALL

As mentioned previously, Carroll County Water District No. 1 will be providing service to this area by the summer of 1998.

Point Sources

No point sources were identified.

Non-Point Sources

While the wells are relatively isolated from the residential development in the community, without more knowledge regarding the groundwater aquifer, potential non-point contamination from the residential development is possible (refer to Map 7 for the location of residential units). The community is served by a package wastewater treatment plant, so septic systems are not a threat. The resort has a golf course which may be a potential contaminant source if herbicides and pesticides are used to maintain the turf.

Soils

There a number of different soils in the recommended protection areas including: NO, LC, OtA, and EIC. LC, or Lawrence silt loam, has a slow permeability and a seasonal high water table at a depth of 6 inches to 1 foot. OtA also has slow permeability and is subject to infrequent flooding. EIC also has a slow permeability and erodes easily. NO was discussed previously.

Security of Access

A security guard at the gatehouse limits access to the community; however, there is no additional security for the well field.

CARROLL COUNTY WATER DISTRICT NO. 1

The Water District is currently working on a wellhead protection plan with the assistance of the Kentucky Rural Water Association. The U.S.G.S. is preparing time of travel analyses to delineate protection areas for both the Ghent and western Gallatin County well fields. Applicable data from the plan regarding potential contaminants located in protection areas will be incorporated here as soon as it is available (probably August of 1998).

II. PROTECTION MEASURES

The primary focus of this section is on local, rather than state and federal, regulatory and non-regulatory protection measures for Owen County's water supply.

Regulatory and Non-Regulatory Protection Measures

While there are no regulatory or non-regulatory measures specifically addressing protection of the water supply, the City of Owenton's Comprehensive Plan and Zoning Ordinance do contain some applicable provisions.

Owenton's Comprehensive Plan contains the following objective: "Protect and enhance the quality of the environment while permitting appropriate development only in physically suitable areas." This

is simply a statement of policy because the Comprehensive Plan is not a regulatory document. The City's Zoning Ordinance, which is a regulatory document, states that there is a mandatory hook-up to water and sewer mains if they are available. If water and sewer mains are not available, all individual water supply and sewage disposal must meet the requirements set by the County Health Officer.

Supply Protection Recommendations

A public hearing on supply protection recommendations was held on March 23, 1998 (See Appendix B for a copy of hearing notice). The following recommendations were adopted at the March 23, 1998 Water Supply Planning Council meeting.

1. Work with the Natural Resource Conservation Service and the Cooperative Extension Office to promote "best management practices" for agricultural and construction activities.

2. Provide assistance to the County Solid Waste Coordinator to clean-up dump sites, promote proper disposal, and further public awareness and education.

3. Promote the expansion of sewer service to areas located in the watersheds of Thomas and Elk Lake.

4. Promote the development of land use controls, including sub-division regulations, that protect existing water sources.

CHAPTER 9
WATER RESOURCES INVENTORY

The purpose of this chapter is to inventory the water resources available in the County and to present them graphically, where possible. The inventory is required because of inadequacies in the Owenton Water Works sources, Lower Thomas Lake and Severn Creek.

I. WATER RESOURCES MAPS

Applicable information will be presented on separate maps.

Soils
General soil characteristics for the County were discussed in Chapter 6 and a general soils map can be found in Appendix E.

Federal Rain and Streamflow Gages
The U.S.G.S. currently operates two streamflow gaging stations in or adjacent to Owen County. One is located on the Kentucky River at Lock 2 in Lockport which is on the Owen/Henry County line. There is also a gaging station on Eagle Creek on the US 27 bridge which is located on the Owen /Gallatin County line. See Appendix H for a map showing the locations of the gages.

Wetlands
There are no wetlands in the County.

Hydric Soils
Hydric soils were discussed in Chapter 6. Appendix H contains a map showing the approximate location of hydric soils.

Outstanding Resource Waters and Coldwater Aquatic Habitat
Eagle Creek is an Outstanding Resource Water.

Generalized Land Use
A generalized land use map can be found in Appendix H. The area shown as public in the southern part of the County is the John Kleber Wildlife area. The Kleber Wildlife area, comprised of 1,082 acres, has fishing, hiking, camping, and picnicking facilities available.

Geology
According to the Groundwater Sensitivity Regions Map for Kentucky, produced by the Division of Water, there are some areas along the Kentucky River that are characterized by sinkholes and depressions. A copy of the pertinent area of this map can be found in Appendix H.

Areas of Cultural and/or Archeological Significance
The State Office of Archeology and the Kentucky Heritage Council will be contacted prior to finalizing any plans for expansion of the water supply.

Aquifers and Groundwater Recharge/Discharge Areas
No information regarding aquifers was discovered. Few households in the County rely on wells. Most that are not served by a public water supplier utilize cisterns.

II. OTHER WATER RESOURCE INFORMATION

Water-Oriented Recreational Resources
The Eagle Creek Recreation Area, located at the confluence of Eagle Creek and the Kentucky River, offers fishing, boating, camping and swimming. Elmer Davis Lake is owned by the Department of Fish & Wildlife and offers fishing. Elk Lake Shores is a private resort with a 207 acre lake and has fishing, boating, and swimming. The Glenwood Hall Resort is a private resort with a marina and a lake for boating and fishing. Appendix H contains a map showing the location of these recreational areas.

Historical Stream-Flow Data
Stream-Flow data for the U.S.G.S. gaging stations is located in Appendix H.

Average Monthly Precipitation
The climatological station of record for Owen County is Lexington, KY. Annual precipitation averages 44.55 inches (29 year record). Mean annual snowfall is 15.80 inches (50 year record). Mean number of days of precipitation of .01 inches or more is 129.60 (51 year record). Mean number of days with thunderstorms is 44.40 (51 year record).

The following is the normal monthly precipitation based on a 30-year record.

January	- 2.86 inches
February	- 3.30 inches
March	- 4.66 inches
April	- 4.23 inches
May	- 4.62 inches
June	- 3.46 inches
July	- 4.51 inches
August	- 3.54 inches
September	- 3.16 inches
October	- 2.71 inches
November	- 3.70 inches
December	- 3.64 inches

State and Federal Regulations and Policies
Copies of Kentucky Revised Statutes, Chapter 151 and Kentucky Administrative Regulations, Title 401, Chapter 4 can be found in Appendix H.

Well Data
The Kentucky Rural Water Association is currently assisting Glenwood Hall/Perry Park with the preparation of a wellhead protection plan. Therefore, well data will be included as soon as it becomes available.

Generalized Quality of Water
Owenton Water Works Severn Creek intake location currently has an excessive sulphur content. Moving the intake to the Kentucky River, which will be discussed later in the plan, may improve the water quality.

Dams
The dam on Lower Thomas Lake is owned by the City of Owenton.

Aquifer Information
No information is available.

Topographic Maps
A complete set of topographic maps is on file at the office of NKADD, 16 Spiral Drive, Florence, KY 41022-0668, phone (606)283-1885.

CHAPTER 10
WATER SUPPLY ALTERNATIVES

As discussed previously, Owenton Water Works sources are inadequate. Lower Thomas Lake has a small watershed and only provides 76 days of storage at current water use levels. In fact, the City's Engineering firm, Mayes, Sudderth & Etheredge (MSE), recently estimated that during severe drought conditions, such as those experienced in Owen County in 1953, Lower Thomas Lake would have no yield. During moderate drought conditions in 1996, the Severn Creek intake was visible and near vortexing. Therefore, the Water Supply Planning Council evaluated a number of water supply alternatives as presented below.

Also, as a corollary to the Water Supply Plan, MSE completed the Raw Water System Improvements Evaluation Study for the City of Owenton. This study did not evaluate every alternative discussed by the Planning Council and detailed below because its scope was defined by the Owenton Water Works Board. Also, the study's scope was limited in an effort to keep the price affordable.

I. EVALUATION OF ALTERNATIVES

The following is a description of each of the alternatives and a summary of the evaluation of each. In many cases, some of the evaluation factors (described in detail in the next chapter) did not apply and therefore are not discussed.

Dredging Lower Thomas Lake

This was an alternative considered by MSE in their study. Dredging the lake would create more storage and could reduce Severn Creek pumping costs. Removing three feet of silt would increase the total volume of the reservoir by only 20 acre-feet and is estimated to cost $141,000. The bulk of the cost is the disposal of the silt which must be treated almost as a hazardous waste. Even with the increased volume achieved by dredging, during severe drought conditions, the yield of the lake would be 0 gpm. Under even the most ideal conditions, yield would only be 145 gpm. It is estimated that the energy savings from reduced pumping would only be $1,485.53 per year. Therefore, since the renovations would be costly and would not produce a substantial yield, this was not considered to be a feasible alternative. However, MSE did recommend that the area around the intake be dredged to keep the reservoir functional. This could be achieved at a substantially lower cost. Also, this alternative does not meet the goals and objectives of the plan because it does not provide a continuous level of supply.

Piping Raw Water from Elk Lake to Owenton Treatment Plant

Piping raw water from the main Elk Lake reservoir to the Owenton treatment plant was discussed. Elk Lake is 207 acres and could probably provide a continuous level of supply. However, the project would be very expensive to construct since the lake is located over seven miles from the treatment plant. Operating costs to pump water to the treatment plant would also be high. Also, Elk Lake is a privately-owned resort and there would likely be social and political opposition to such a project since it would be a competing use.

New Reservoir Above Thomas Lake

A new reservoir in this location could use the existing treatment plant. Also, since there is currently little development in the watershed, land uses could be controlled to minimize pollution. However, as discussed with the dredging of Lower Thomas Lake, the watershed is quite small and may not yield enough water to make this alternative feasible. In addition, the project would have land acquisition costs and would be a long-term alternative to implement.

Eagle Lake Project

A feasibility study for the Eagle Lake project was proposed in the early 1990s by the U.S. Army Corps of Engineers. The proposed project would serve as a water supply and recreational resource for Central and Northern Kentucky as well as providing flood control by reducing flood stages below the dam in the Eagle Creek and Kentucky River Valley. The drainage area of the proposed project would consist of 118 square miles in Scott County and 38 square miles in Owen County. The maximum volume of the proposed reservoir would be 510,000 acre-feet. However, when the feasibility study was proposed, there was considerable opposition, particularly from farmers and hunters. Therefore, the study was never conducted. Recently, in a meeting in Carrollton, one of the local congressman's field officers stated that this project was "dead" and that no more flood control projects would be built.

Also, this alternative would have a long-term implementation and would not solve some of the immediate problems. The proposed lake would also be located in the southern part of the County, far-removed from the existing treatment plant. Therefore, a treatment plant would need to be constructed or raw water would need to be pumped to Owenton. Also, even if the project is not "dead", it would need wide regional political support and cooperation.

Interconnection Between Carroll County Water District No. 1 and Tri-Village Water District

The benefits of this alternative are that it would provide an alternate source of supply thus relieving some of the burden on the City of Owenton. Also, the interconnection would occur in the northern portion of the County where there is a great demand for water. However, this alternative definitely entails further study to determine what infrastructure improvements would be needed (re-doing line sizes, pumping costs, etc...) and to assess its feasibility.

Well in Gallatin County

This alternative had been considered in the past by Tri-Village Water District. It would provide an additional water supply source; however, a new treatment plant would probably be required. Also, the costs of pumping the water from Gallatin County would be high.

Pumping Raw Water from Elmer Davis Lake to Owenton Treatment Plant

Elmer Davis Lake, a 145 acre lake owned and operated by the Department of Fish and Wildlife, is located approximately three miles southwest of Owenton. Its watershed is approximately 6.6 square miles. In the past, a raw water line ran from the Lake to the Owenton treatment plant for emergencies; however, the Department for Fish and Wildlife was concerned about the impact of the withdrawals and limitations on its operational discretion. Therefore, the City's withdrawals were terminated. That line has since been converted into a distribution main to supply treated water from Owenton to the Elmer Davis Lake area residents. Currently, an agreement is in place that would allow Owenton to withdraw water from the lake in an "extreme" emergency; however, the pipe

would need to be placed on top of the ground.

MSE conducted a yield analysis of the lake and concluded that the City could withdraw .3 mgd and only drop the lake level by .8 feet under normal conditions. Also, under normal conditions, the City could withdraw 1.25 mgd and only drop the lake level by 2.1 feet. However, under the 100 year drought scenario, a withdrawal of 1.25 mgd would drop the lake by 6.8 feet. Also, under the drought scenario, if the City withdrew its 2030 maximum projected demand of 2 mgd (engineer's projection), the lake level would drop 22 feet. However, it should be noted that the Department of Fish & Wildlife itself, drops the lake levels by 15 feet every two years to kill shad.

The MSE study cited correspondence from the Department of Fish & Wildlife, dated July 22, 1990, stating that "it is their position that no waters below the spillway crest should be allocated for municipal use." Therefore, M.S. & E. concluded that while this alternative is an excellent source for the City, particularly when compared to the pumping costs from Severn Creek, it is not politically feasible at this time. M.S. & E. recommended that the City continue to negotiate with the Department of Fish & Wildlife to obtain withdrawal rights.

Moving Owenton Intake from Severn Creek to Kentucky River

This alternative would move the intake from the Severn Creek backwater pool of the Kentucky River to the KY 355 bridge. This location would withdraw water from a lower pool, virtually eliminating all drought vulnerability. In addition, the new intake location may eliminate the high sulphur content that is found at the Severn Creek pool. This alternative requires several additional infrastructure improvements. A new intake structure will be necessary and a section of the old CL PVC raw water main will need to be replaced with MPVC CL200 and PVC CL200. The old intake structure will be maintained as a back-up.

Water will be pumped directly from the Kentucky River to the treatment plant as a part of this alternative. This will make the river the primary water source and Lower Thomas Lake will become the secondary water source. This will eliminate the existing dam classification problem. The dam on Lower Thomas Lake is currently classified as Low Hazard; however, since water is being pumped into the lake (and then into the treatment plant), the lake is effectively the primary water supply source and should have a dam classification of Moderate Hazard.

According to the M.S. & E. study, with these improvements, a pumping rate of 1500 gpm can be achieved. This would allow the City to produce the 2 mgd projected demand. This alternative is estimated to cost between $658,300 and $1,000,000 depending on how quickly it could be constructed and what funding sources are utilized.

CHAPTER 11
PRIMARY WATER SUPPLY ALTERNATIVE

I. SELECTION OF PREFERRED ALTERNATIVE

The Water Supply Planning Council held a public hearing to solicit input on water supply alternatives on January 26, 1998. The public hearing was advertised in the January 14, 1998 Owenton News Herald (See Appendix B). No citizens attended the meeting. The alternatives described in Chapter 10 were discussed. A sheet listing all the alternatives and factors to be used in the evaluation was distributed to all those in attendance. Evaluation factors included: conformance with planning objectives, particularly providing a continuous level of supply under all circumstances; environmental impacts, if known; feasibility of providing adequate pumpage and pressure; drought vulnerability; costs, if known, or at least relative costs; social, political, and economic impacts; potential sources of contamination for new sources; changes to existing treatment techniques or capacity (such as having to build a new treatment plant); water use conflicts with existing users; degree of supply protection; changes to wastewater treatment and disposal systems necessitated; and finally, time frame to implement the alternative.

The Council discussed each of the alternatives. Mr. Gill had received a draft of the MSE study and was able to provide a lot of information regarding some of the alternatives. An additional alternative was to encourage water suppliers in adjacent Counties to serve the outlying areas of Owen County, wherever feasible.

After the public hearing, the Planning Council selected moving the Owenton intake (and the associated infrastructure improvements) as the primary alternative. There was consensus among the members that this alternative could be implemented within two to five years; whereas, many of the other alternatives would have a much longer time frame. This alternative would utilize existing infrastructure, with the exception of the new intake structure and replacing some piping. The Council also selected a corollary to the preferred alternative which is to encourage suppliers in adjacent Counties to serve outlying areas of Owen County.

II. DESCRIPTION OF THE PREFERRED ALTERNATIVE

The Owenton intake will be moved farther down Severn Creek to the bridge on KY 355. This is right near the confluence with the Kentucky River. This intake location will be at a lower elevation and will not be vulnerable to droughts. The existing raw water line will be extended from the old site to the new one.

Because the project is being designed for a pumping rate of 1500 gpm or 2 mgd, some of the existing piping will not withstand the proposed pressures. Therefore, about 2,000 feet of 12" ductile iron pipe will be required to tie in with the existing raw water main at the old intake. 4000 feet of MPVC CL200 12" main and 2,000 feet of PVC CL200 main will replace some of the existing piping. 500 LF of 12" main will pipe water directly into the treatment plant. Lower Thomas Lake will still serve as a secondary source.

Also, because the Kentucky River has been experiencing a zebra mussel invasion, the intake will be vulnerable as well. Zebra mussels are capable of reducing the inlet and piping transmission hydraulic capacity. Therefore, the intake must be equipped with chlorine or potassium permanganate feed equipment to deter mussel invasion.

III. ESTIMATED COSTS OF PREFERRED ALTERNATIVE

The preferred alternative will be implemented in two phases.

Phase I

The first phase will install 500 lf of 12" pipe to send water directly into the treatment plant. The cost is estimated at $25,000 and the City of Owenton is currently seeking financing. This phase will be completed by the end of 1999 and will eliminate the use of Lower Thomas Lake as the primary water supply source.

Phase II

The second phase consists of moving the intake, installing a new intake structure and pump station, and upgrading and installing new pipe from the river.

Construction Costs

12" Ductile Iron Pipe PVC C	2,000 ft@	$ 26.00	$ 52,000
12" MPVC CL200 Pipe	4,000 ft@	$ 18.00	$ 72,000
12" PVC CL200 Pipe	2,000 ft@	$ 13.60	$ 27,200
16" Steel Casing Open Cut	190 ft@	$ 20.00	$ 3,800
12" Gate Valves	15 ea@	$ 800.00	$ 12,000
3/4" Air Release Valves	10 ea@	$ 160.00	$ 1,600
Intake Structure & Pump Station			$ 275,000
Telemetry Controls			$ 40,000
Estimated Total Construction			**$ 483,000**
Contingencies			$ 48,000
Engineering Design			$ 45,300
Resident Project Inspection			$ 31,400
Additional Services (Property Surveys, Permits, etc..)			$ 15,000
Land and Right-of-Way			$ 20,000
Legal and Administrative			$ 15,000
Estimated Total Project Cost			**$ 658,000***

*The total project cost may be closer to $1,000,000 as a result of rapidly rising construction costs. The funding sources utilized for the project may also increase costs since they may require Davis-Bacon wage rates and additional administrative oversight.

III. POTENTIAL FUNDING SOURCES AND PROJECT SCHEDULE

Potential Funding Sources

The search for potential funding sources is currently underway. Funding sources to be explored include, but are not limited to, Community Development Block Grant, Rural Development, the State Drinking Water Revolving Loan Fund and private financing.

Project Schedule

Phase I will be completed by the end of 1999. The search for Phase II funding is currently underway and it is assumed that identifying and securing funding will take one to two years. Therefore, project construction would probably not begin until at least 2001. Project construction, including acquisition of easements, would take approximately two years. This timetable is an estimate.

IV. KENTUCKY RIVER AUTHORITY

The DOW permitting process will ensure that the project complies with Kentucky River Authority regulations. The project does not conflict with existing plans.

CHAPTER 12
EMERGENCY PLANS

Two types of emergency plans are discussed in this chapter: Water Shortage Response Plans and Supply Contamination Response Plans.

I. WATER SHORTAGE RESPONSE PLANS

Both the City of Owenton (a drought-vulnerable supplier) and the Tri-Village Water District (Owenton's wholesale customer) have had water shortage ordinances since 1988. Copies of these ordinances may be found in Appendix I. No drought vulnerability was identified for Glenwood Hall, Elk Lake Water Company, or Carroll County Water District No. 1.

In the event of a water shortage that required rationing, or in other words, an "extreme emergency", the Department of Fish & Wildlife has agreed to allow Owenton to withdraw water from Elmer Davis Lake. Raw water would be pumped to Lower Thomas Lake and treated at the existing plant. There is a stipulation that the piping must be above ground. Waterworks personnel estimate that implementation might take as long as a week.

II. CONTAMINATION RESPONSE PLANS

The following contamination response plans outline the procedures that County water suppliers would take in the event of contamination, or a threat of contamination, of their water supply source(s).

A. Owenton Water Works

Notification Procedure

Tri-Village Water District would be notified by telephone. All major water users would be notified by telephone. Notification to the public would be made through the local radio stations, area television stations, the local newspaper, and flyers. If the situation were particularly urgent, city personnel including public works, fire, and police, would go door-to-door or drive streets with a public address system to inform residents. The Superintendent would be responsible for contacting the Division of Water.

Emergency Water Sources

Assuming that the contamination were in Severn Creek or the Kentucky River, then Lower Thomas Lake provides 10 to 15 days of storage. Also, for a short-term emergency, water could be trucked into Lower Thomas Lake. For a long-term emergency, raw water could be pumped from Elmer Davis Lake to Lower Thomas Lake or possibly, directly to the treatment plant. It should be noted that getting permission from the Department of Fish & Wildlife and installing the temporary infrastructure would probably take at least a week.

Problems with the Distribution System
No problems that would affect the ability of the utility to cope with the contamination were identified.

Threat of Contamination
If a threat of contamination occurred, such as a spill on the Kentucky River, the intake would be closed until testing showed that there was no threat or the contamination had passed. During that time, Lower Thomas Lake and stored water would be utilized.

B. ELK LAKE WATER COMPANY

Notification Procedure
Notification of residents would be door-to-door, by telephone, and at the security gate which is the only point of entry into the community. Due to the structure of the community served by the Elk Lake Water Company, complete notification would be easy. Notification would also be made through the newspapers and radio and television stations as required by the Division of Water and Public Service Commission regulations.

Emergency Water Sources
Based on a daily average use of 26,000 gpd in 1997, Elk Lake Water Company would have a four or five day reserve in storage for a short-term emergency. Purchasing water from Tri-Village Water District is a short-term emergency source. A long-term source would be pumping directly from Elk Lake; however, if the overflow from the water supply reservoir contaminated the lake, then purchased water from Tri-Village would be the only alternative source.

Problems with the Distribution System
No problems within the distribution system were identified. The connection with Tri-Village is not in place at this time, but it is in progress. To pump directly from Elk Lake to the treatment plant, additional infrastructure would be needed.

Threat of Contamination
If there were a threat of contamination, the treatment plant and the distribution system would be immediately shut down. A distribution shut-down would completely stop water usage at Elk Lake, until the threat could be evaluated. If the threat materialized, then the procedures detailed previously would be followed. The nature of the threat would have a bearing on the extent of notification that would be warranted.

C. GLENWOOD HALL RESORT

Notification Procedures
Notification of residents would be door-to-door. Cars would also be stopped as they entered or exited the community at the security gate. The treatment plant superintendent would contact the Division of Water and the Public Service Commission as required.

Emergency Water Sources
Glenwood Hall has three to four days of storage for a short-term emergency. Bottled water would have to be used after that. Glenwood Hall will be served by the Carroll County Water District No.

1 by the summer of 1998.

Distribution Problems
None were identified.

Threat of Contamination
If a threat of contamination occurred, the treatment plant would be shut down so the threat could be evaluated. Stored water would be used.

D. CARROLL COUNTY WATER DISTRICT NO. 1

Notification Procedure
Customers would be notified through announcements on local radio stations, tv stations, and newspapers. The General Manager would contact the Division of Water and the Public Service Commission as required.

Emergency Water Sources
For a short-term emergency, stored water would be used. Also, for both a short and a long-term emergency, depending upon the nature and the extent of the contamination, pumping from affected wells could be halted.

Distribution Problems
None were identified.

Threat of Contamination
Pumping from potentially contaminated areas would stop until the threat could be evaluated.

CHAPTER 13
IMPLEMENTATION PLAN

I. ANNUAL MEETING

The Owen County Water Supply Planning Council will meet annually with the next meeting date tentatively scheduled for February 22, 1999 at the Owen County Courthouse. At that meeting, the plan will be reviewed for any needed amendments or revisions and to check for consistency with Kentucky River Authority regulations and water resource plans.

II. PLAN UPDATES AND AMENDMENTS

Once the Owen County Water Supply Plan has been approved by the Division of Water, the County will be provided with a diskette containing all plan documents as well as a hard copy of the plan. The County will be able to make any necessary changes or revisions. Or if the County prefers, NKADD will be available to provide this service on a contractual basis.

III. PLAN IMPLEMENTATION

Implementation of the preferred alternative, moving the Owenton intake location and associated infrastructure improvements, will be the focus of the Council for the next several years. Since the project will be owned by the City of Owenton, they will have responsibility for the tasks outlined below. The Council will be available to provide any support that may be needed.

Timetable

Identification of Funding Sources: 6/1/98 - 12/31/98
Applications to Funding Sources and Securement of Funding: 1/1/99 - 6/30/00
Project Construction Including Administrative Functions: 7/1/00 - 6/30/02

Methods of Financing

As mentioned previously, a variety of grant and loan programs will be investigated including, but not limited to: Community Development Block Grant, Rural Development, and the State Drinking Water Revolving Loan Fund. However, since the City of Owenton already has a debt load of over $3,000,000, it will be essential to secure some grant funds.

Costs

The project cost is estimated at a minimum of $658,300 and a maximum of $1,000,000 depending on construction schedule and what type of funds are utilized. Owenton currently has a customer base of approximately 1,000 and through wholesale sales to Tri-Village, serves an additional 1,400. Therefore, the cost per user would be between $274 and $416.

Authority to Implement Plan

The City of Owenton and its Water Board have the authority to implement the plan.

Other Implementation Activities

The Planning Council will continue to serve in a coordinating function with regard to the corollary alternative, encouraging water suppliers in adjacent counties to serve the outlying areas of Owen County.

Also, after the intake is moved, or preferably concurrently, the treatment plant will need an additional ClariCone to operate at design capacity. This project is estimated at $900,000 including pump change-outs and reservoir intake improvements.

CHAPTER 14
PLAN APPROVALS

Carl J. Stich, Sr.
Elk Lake Water Company _____

Judge/Executive William P. O'Banion
Owen County Fiscal Court _____

Mayor Rebecca Albaugh
City of Monterey _____

W.E. Babington _____

Mayor K.F. "Jr" Ballard
City of Owenton _____

Carol F. Tudor
Tri-Village Water District _____

Frank Downing
Owen Electric Cooperative _____

Marshall Gibson
Owenton Water & Sewer _____

Bill Gill
Owen Electric Cooperative _____

Charles F. Noel
Tri-Village Water District _____

Mayor Billy Stamper
City of Gratz _____

A missing signature indicates that the member became a non-participant during the planning process.

Appendix A: Minutes

Owen County Water Supply Planning Council
November 29, 1994

Minutes

Call to Order at 7:05 p.m.

Judge Tom Olds stated the purpose of the meeting and introduced Paul Gardner from Northern Kentucky Area Development District (NKADD).

Mr. Gardner provided an explanation of the water supply planning process and discussed planning council membership requirements, funding possibilities, planning representation and a preliminary schedule which Owen County might pursue.

Mr. William Gill suggested that the group should conduct the official activities of appointing a chairman, establishing quorum and, committing to a regular meeting schedule.

Judge Olds asked for volunteers to Chair the committee. Ed Ostendorf volunteered as Chairman. Mr. Gill motioned that Ed Ostendorf be elected Chairman for the Council, Mr. Stich seconded the motion, the motion passed.

There was a brief discussion relative to the Planning representative. Mayor Ballard motioned that the Northern Kentucky Area Development District be designated as the planning representative, Mr. Gill seconded the motion, the motion passed.

There was discussion of the Goals and Objectives for the water supply plan. Two sample lists of the goals and objectives were provided for the committee. Sample 1 was discussed and various amendments were made. The goals and objectives for owen county were accepted by the planning council. Motion was made to Mr. Stich and seconded by Mr. Gill that a public hearing be scheduled for the goals and objectives. Motion passed.

The hearing was scheduled for Tuesday, January 17, 1995 at the Owen County Courthouse.

The meeting adjourned at 8:40 p.m.

OWEN COUNTY WATER SUPPLY PLANNING COUNCIL
January 17, 1995

Minutes

The meeting was called to order at 7:10 by Mr. Ostendorf.

A copy of the goals and objectives for the Owen County Water Supply Plan was passed to all those in attendance and Mr. Ostendorf asked for comments on these.

No comments were submitted and motion was given to approve the goals and objectives. The motion was seconded and passed.

There was discussion of membership. There was agreement that a representative from Carroll County/ Carrollton Utilities needs to be represented on the council because they supply parts of the county with water.

The budget for the plan was discussed at length. Mr. Gardner was asked to review the scope of work and funding sources and scenarios which the council would pursue.

1. The Division of Water has approved the grant for $ 3,500, which will be available for Phase I of the plan.
2. The ADD district can arrange billing to disperse cost over several fiscal years.

Judge Olds stated that the county has no money allotted or available for water supply planning activities for fiscal 1995.

Mr. Gardner presented an option whereby the members of the council would conduct the data collection and engineering elements of the plan to lower the cost by $ 4,000.

This was discussed as Option # 2, and had considerable support among council members. It was agreed that a copy of a data questionnaire would be submitted to all council members and utilities in order to study option two in more depth.

Regular meeting times have been set for the 3rd Tuesday of the month. Next meeting was set for Tuesday February 21.

Meeting adjourned at 8:00 p.m.

OWEN COUNTY WATER SUPPLY PLANNING COUNCIL
February, 21 1995

Minutes

OWEN COUNTY WATER SUPPLY PLANNING COUNCIL
February 21, 1995

MINUTES

The meeting was called to order at 7:00 by Ed Ostendorf.

After a brief discussion of the minutes from January 17, 1995, motion was made and minutes were accepted.

The scope of work and contract with NKADD was discussed, with particular reference to the cost savings measures provided by Option 2.

Motion was made that the council approve the scope of work for Option 2. Motion passed.

Funding of the work plan will be $3,500 in FY95 and $2,500 in FY96. The Division of Water Grant will cover the FY95 payment. The Owen County Fiscal Court will provide the FY96 payment.

Participation and membership were discussed. NKADD will send a formal letter to Carroll County Water District to notify them of their requirement to serve on the Owen County Water Supply Council. Council members will continue attempts to contact Perry Park for their participation.

Next meeting is set for March 21 at 7:00 p.m. at the courthouse.

Meeting adjourned at 8:30.

OWEN COUNTY WATER SUPPLY PLANNING COUNCIL
March 21, 1995

MINUTES

The meeting was called to order at 7:10 by Ed Ostendorf.

After a brief discussion of the minutes from February 21, 1995, motion was made and minutes were accepted.

Considerable time was spent working on the data collection phase of the water supply plan. Specifically the council reviewed the data collection step by step as outlined in the scope of work.

The council identified several items which would be difficult to gather data for. The plan requires identification of agricultural water users who are not served by a public water system.(3c. in the workplan) Since this condition describes virtually every farmer in the county, clarification will be needed from the cabinet. In terms of data for mapping, the same situation applies to the location of permit exempt users. (4f. in the workplan)

The contract with NKADD was presented to the council by Paul Gardner. Motion was made for the council to approve the contract and recommend to Judge Olds to officially authorize.

Because of the nature of the upcoming work, and the progress to date, the council discussed scheduling the next meeting time for June 20, 1995. Motion was made and seconded, and council approved that the next meeting is to be held for June 20, 1995 at 7:00 p.m. in the Owen County Courthouse.

Meeting adjourned at 8:20.

OWEN COUNTY WATER SUPPLY PLANNING COUNCIL
June 20, 1995

MINUTES

The meeting was called to order at 7:30 pm. by Judge Tom Olds who served in Ed Ostendorf's absence.

There was no discussion of the minutes from March 21, 1995. Motion was made to accept the minutes and minutes were accepted.

Hossein Rakhshan with the Division of Water (DOW) briefly discussed the water supply planning process, the status of other counties, and Owen County in particular. Mr. Rakhshan stated that there is currently very little money available for assistance - approximately $50,000.00 statewide - for Phase I activities.
Mr. Rakhshan stated that Owen County is making good progress with its activities.

There was discussion regarding mapping criteria. The DOW is somewhat flexible on what is acceptable, but the plan must adhere to planning regulations.

Paul Gardner discussed the work progress. The completed work was presented in the draft document and he explained that the next step is running the forecasting model.

The next meeting will be held on an as needed basis.

Meeting was adjourned at 8:10 pm.

OWEN COUNTY WATER SUPPLY PLANNING COUNCIL
May 16, 1996

MINUTES

In attendance: Chairman Carl Stich, Sr. - Elk Lake Water Co.
Judge/Executive Tom Olds - Owen Co. Fiscal Court
Heidi Van Keuren, NKADD staff

The council did not have a quorum; however, an informational meeting was held to review completed sections of the plan.

Water demand forecasts for Owenton Water Works, the county's major water supplier, were reviewed. A computer model, IWR-MAIN, was used to generate forecasts. Ms. Van Keuren explained that the model was designed for use in large urban areas and can be quite accurate. However, in rural areas, model results need to be compared with local estimates and projections and adjusted as necessary.

The results from the model indicated that demand for water may reach or exceed existing treatment capacity by 2010. While the estimates may be rather high, the decision was made to leave them "as is" for planning purposes. With Tri-Village's current expansion project and a proposed expansion in Owenton, it is possible that these projections may prove to be accurate.

The projections for Elk Lake Water Company will be prepared according to Mr. Stich's estimates rather than attempting to use the model.

Ms. Van Keuren relayed the interest of the Grant County Water Supply Planning Council in having a joint meeting of the two water supply planning councils to discuss common concerns and possible cooperative efforts. A joint meeting will probably be held in the fall.

OWEN COUNTY WATER SUPPLY PLANNING COUNCIL

August 19, 1997 Meeting Summary

In Attendance:

Carl J. Stich, Council Chair
Marshall Gibson, City of Owenton
Mayor K.F. Ballard, City of Owenton
Judge/Executive Tom Olds, Owen County Fiscal Court
Dave Morgan, Division of Water
Mostafa Nikou, Division of Water
Heidi Van Keuren, Northern Kentucky Area Development District

Judge Olds opened the meeting and those present introduced themselves. Judge Olds called everyone's attention to the recent notice of a Water Shortage Advisory issued for the Northern Kentucky and Bluegrass region. Mr. Morgan explained that he serves on the advisory board that issued the alert. The reason for the alert was an extended period with no significant rainfall. Mr. Gibson noted that the City of Owenton has not had any drought-related problems this year, but did have some last year when the level of the Kentucky River dropped significantly.

There was a discussion of the recent water pressure problems in the northern portion of the county and the declaration of a water emergency. The exact cause of the problem has not been determined. The extremely dry weather may have led to a much higher demand than the Tri-Village distribution system was able to handle. Higher elevations in the northern portion of the county may have exacerbated the problem. According to Mayor Ballard and Mr. Gibson, there was never a problem with the water supply source or the water pressure.

Judge Olds stressed the importance of planning for the future. Industry will be unlikely to locate in the county if there is a problem with water supply adequacy or water distribution systems. There was also discussion about the residential development that will occur as a result of the new road to Frankfort. The residential development will increase the demand for water.

Dave Morgan emphasized the importance of the water supply planning council and the future role of the council. The water supply planning council will be the local advisory body for the Governor's Water Development Resources Commission. It is important that the council be fully staffed as per the regulations. The deadline for an approved plan is July 15, 1998. Ms. Van Keuren is editing Phase I now and hopes to submit it in September. There were some inconsistencies in permit withdrawal limits and infrastructure information, but these have been

resolved. Mr. Morgan said that cities and counties will not be eligible to apply for funds from the state revolving loan for drinking water unless there is an approved water supply plan.

Mayor Ballard and Mr. Gibson talked about the difficulties Owenton has had in obtaining raw water. If the pumps at the Severn Creek intake failed, they estimated that Thomas Lake could only meet the demand for water for two weeks! Owenton's engineering firm, MS & E has put together a proposal to study ways to obtain more raw water including: dredging Lake Thomas, putting larger pumps in the Kentucky River instead of the Severn Creek pool, and increasing the height of the dam on Lower Thomas Lake.

There was some discussion of the security of access to the intake structure on Severn Creek. Mr. Gibson said that since the pump house is located in a remote area, it has been very difficult to secure. Locks are shot-off frequently and the spot is a popular "party area" for kids. The City cannot afford to provide 24 hour a day security, so the area is posted "No Trespassing".

The next meeting was scheduled for Thursday, October 9, 1997 at 7:00 p.m. at the Owen County Courthouse. The meeting adjourned at 9:00 p.m..

OWEN COUNTY WATER SUPPLY PLANNING COUNCIL

November 6, 1997 Meeting Summary

In Attendance:

Marshall Gibson, Owenton Water Works
Bill Gill, Owenton Water Board
Charles F. Noel, Tri-Village Water District
Carol Tudor, Tri-Village Water District
Carl Stich, Elk Lake Water Company
Mayor K.F. Ballard Jr., City of Owenton
Judge/Executive Tom Olds, Owen County Fiscal Court
Heidi VanKeuren, NKADD staff

The meeting began at 7:00 p.m. with a review of the October 9, 1997 meeting summary. There were no comments or changes.

Mr. Gibson reported on a recent DOW inspection visit led by Kevin Flowers. DOW is strongly encouraging the city to move its intake into the middle of the Kentucky River; however, they have no power to enforce this. Mayor Ballard commented that this alternative was probably the best and the quickest fix to the immediate problems. M.S. & E. is currently studying this alternative as well as some others that will improve availability of raw water. Other alternatives being studied are adding an intermediate pump station that would reduce head and increase efficiency of intake. Dredging Thomas Lake is also being studied. The cost just for dredging will probably be $380,000 with an additional, probably higher, cost for disposal of the sludge. Dredging would probably increase the lake's storage capacity from a two week supply to a one month supply.

The intake structure and the lack of security was discussed. It is impossible to keep it secure since trespassers shoot off locks and break down the gates. The city cannot afford to keep personnel at the structure 24 hours a day. Mr. Gibson reported that zebra mussels have become a problem at the intake as well.

DOW's preference for continuing to use the river as a water source, instead of a new reservoir, was discussed. DOW staff claim that the river water is easier to treat and a better source than lake water which is contaminated by septic tanks.

Mr. Gill reported on a study that looked at the impact of Owenton pumping water from Elmer Davis Lake for its water needs. The study concluded that even at maximum usage, water levels would not drop more than 12 inches in a year. Mr. Gibson noted that Owenton's water use has increased since that study which would probably change the results. After some discussion,

planning council members present concurred that Elmer Davis Lake was never going to be an alternative source of water except in extreme emergencies.

The feasibility of drilling a well in Gallatin County and pumping it to Owen County was discussed. Mr. Gill explained that since a chemical was discovered in the Ohio River aquifer from Ashland to Carrollton, full treatment is required. Therefore, a treatment plant would need to be constructed making this a very expensive alternative. Also, the pumping costs would be very expensive given the topography. Interconnection between Carroll County Water District No. 1 and Tri-Village was discussed. Both utilities have small lines in areas where interconnection would be possible. Lines would have to be re-sized which would be expensive.

Interconnection between Tri-Village and Williamstown was discussed. Williamstown is no longer interested because they are experiencing so much growth.

New reservoirs were discussed. Any reservoir would need an adequate recharge area or else the same problems would exist. The Eagle Lake project was discussed. While it would be a good water source and recreational asset, it would be necessary to put in another treatment plant or to pump water a long distance to Owenton.

Raising water rates to pay for infrastructure improvements was discussed. Raising rates would have a political and social impact; however, as grant sources diminish, it may be inevitable. Loading stations were discussed and Tri-Village is concerned because they are losing money on them after they pay the wholesale cost of water.

There will be a public hearing before the next council meeting to discuss water supply alternatives. The public hearing will be held on Monday, January 26, 1998 at 7:00 p.m. at the Courthouse. The meeting adjourned at 8:40 p.m..

OWEN COUNTY WATER SUPPLY PLANNING COUNCIL

October 9, 1997 Meeting Summary

In Attendance:

Judge/Executive Tom Olds - Owen County Fiscal Court
Marshall Gibson - Owenton Water Works
Bill Gill - Owenton Water Board
Bobby Gaines - Owen County Fiscal Court
Charles F. Noel - Tri-Village Water District
Carol Tudor - Tri-Village Water District
Shirley Traylor - Tri-Village Water District
Mayor K.F. Ballard Jr. - City of Owenton
Heidi Van Keuren - NKADD

The meeting began with a review of the August 19, 1997 summary. Judge Olds noted one change that needed to be made.

Ms. Van Keuren reported that the Phase I water supply plan had been submitted. The review period will probably be about two months.

Tri-Village's hydraulic study was discussed. Some of the recommendations are already being implemented. The design and plan for a new pump station in Wheatley are underway. Also, other problem areas identified in the study were discussed. Ms. Tudor will forward a copy of the study to Ms. VanKeuren.

The study by Mayes, Sudderth, & Etheredge, Inc. has been approved for the City of Owenton. The study will look at ways to improve raw water availability such as increasing the pump sizes at the Severn Creek intake, moving the intake, and other alternatives.

Ms. Van Keuren gave an overview of Phase II planning activities. Phase II focuses on the protection of the existing water supply sources, contamination response plans, water shortage response plans, inventory of existing sources, and selection of a primary alternative water source for further study. Water supply protection was briefly discussed. There was an old landfill that was sealed in the 1960s; however, it was not located in the watershed protection areas identified in the plan.

Water shortage response plans were discussed. They are already in place and copies will be forwarded to Ms. Van Keuren. Elmer Davis Lake was discussed as a potential emergency water

supply. Currently, the lake water level is being dropped 3 inches per day; however, Owenton cannot access that water. Elmer Davis Lake can only be used under extreme emergency conditions and there is a condition that the pipe leading to Owenton's treatment plant must be on top of the ground (in other words, a very temporary arrangement).

Alternative water supply sources were discussed. Moving the intake from Severn Creek out into the middle of the Kentucky River was discussed. Magistrate Bobby Gaines discussed a potential site for a new water supply reservoir above Thomas Lake that could be connected via a valve through a dam. The possibility of running a pipe seven miles to Elk Lake was briefly discussed. The Eagle Lake project was also mentioned. Carroll County Water District No. 1 could also provide some supply to Tri-Village in the northern portion of the county. Ms. Van Keuren explained that the potential water supply alternatives needed to be discussed at a public hearing, but that the next council meeting should focus on discussion of the alternatives, particularly pros and cons of each.

Growth in the Tri-Village service area was discussed. Three new subdivisions are planned with a total of 100 homes. The problem of fire department water use was discussed. During this drought period, some fire departments are still using a lot of water to do things like wash fire trucks. Some are getting water out of hydrants for these purposes so they can bypass the meter at the fire station. Despite efforts by Tri-Village to discourage this kind of use, some of the fire departments are still not cooperating.

The next meeting was scheduled for Thursday, November 6, 1997 at the Courthouse. Ms. Van Keuren will compile a list of alternatives and members should be prepared to discuss pros and cons of each. The meeting adjourned at 8:40 p.m..

OWEN COUNTY WATER SUPPLY PLANNING COUNCIL

November 6, 1997 Meeting Summary

In Attendance:

Marshall Gibson, Owenton Water Works
Bill Gill, Owenton Water Board
Charles F. Noel, Tri-Village Water District
Carol Tudor, Tri-Village Water District
Carl Stich, Elk Lake Water Company
Mayor K.F. Ballard Jr., City of Owenton
Judge/Executive Tom Olds, Owen County Fiscal Court
Heidi VanKeuren, NKADD staff

The meeting began at 7:00 p.m. with a review of the October 9, 1997 meeting summary. There were no comments or changes.

Mr. Gibson reported on a recent DOW inspection visit led by Kevin Flowers. DOW is strongly encouraging the city to move its intake into the middle of the Kentucky River; however, they have no power to enforce this. Mayor Ballard commented that this alternative was probably the best and the quickest fix to the immediate problems. M.S. & E. is currently studying this alternative as well as some others that will improve availability of raw water. Other alternatives being studied are adding an intermediate pump station that would reduce head and increase efficiency of intake. Dredging Thomas Lake is also being studied. The cost just for dredging will probably be $380,000 with an additional, probably higher, cost for disposal of the sludge. Dredging would probably increase the lake's storage capacity from a two week supply to a one month supply.

The intake structure and the lack of security was discussed. It is impossible to keep it secure since trespassers shoot off locks and break down the gates. The city cannot afford to keep personnel at the structure 24 hours a day. Mr. Gibson reported that zebra mussels have become a problem at the intake as well.

DOW's preference for continuing to use the river as a water source, instead of a new reservoir, was discussed. DOW staff claim that the river water is easier to treat and a better source than lake water which is contaminated by septic tanks.

Mr. Gill reported on a study that looked at the impact of Owenton pumping water from Elmer Davis Lake for its water needs. The study concluded that even at maximum usage, water levels would not drop more than 12 inches in a year. Mr. Gibson noted that Owenton's water use has increased since that study which would probably change the results. After some discussion,

planning council members present concurred that Elmer Davis Lake was never going to be an alternative source of water except in extreme emergencies.

The feasibility of drilling a well in Gallatin County and pumping it to Owen County was discussed. Mr. Gill explained that since a chemical was discovered in the Ohio River aquifer from Ashland to Carrollton, full treatment is required. Therefore, a treatment plant would need to be constructed making this a very expensive alternative. Also, the pumping costs would be very expensive given the topography. Interconnection between Carroll County Water District No. 1 and Tri-Village was discussed. Both utilities have small lines in areas where interconnection would be possible. Lines would have to be re-sized which would be expensive.

Interconnection between Tri-Village and Williamstown was discussed. Williamstown is no longer interested because they are experiencing so much growth.

New reservoirs were discussed. Any reservoir would need an adequate recharge area or else the same problems would exist. The Eagle Lake project was discussed. While it would be a good water source and recreational asset, it would be necessary to put in another treatment plant or to pump water a long distance to Owenton.

Raising water rates to pay for infrastructure improvements was discussed. Raising rates would have a political and social impact; however, as grant sources diminish, it may be inevitable. Loading stations were discussed and Tri-Village is concerned because they are losing money on them after they pay the wholesale cost of water.

There will be a public hearing before the next council meeting to discuss water supply alternatives. The public hearing will be held on Monday, January 26, 1998 at 7:00 p.m. at the Courthouse. The meeting adjourned at 8:40 p.m..

OWEN COUNTY WATER SUPPLY PLANNING COUNCIL

January 26, 1998 Public Hearing & Meeting Summary

In Attendance:

Heidi Van Keuren, NKADD
Judge/Executive Tom Olds, Owen County Fiscal Court
Carl Stich, Elk Lake Water Co.
Carol Tudor, Tri-Village Water District
Mayor K.F. Ballard, City of Owenton
Bill Gill, Owenton Water Dept.

The public hearing to discuss water supply alternatives opened at 7:00 p.m.. Ms. Van Keuren distributed a summary of the pros and cons of the alternatives that had been compiled to date. Mr. Gill reported on the preliminary results of a study being conducted by M.S. & E. regarding alternative water supply sources and infrastructure improvements for the City of Owenton.

Moving the Owenton water intake from Severn Creek to the Kentucky River would cost approximately $158,000. This would lessen drought vulnerability for the system and would eliminate the high sulfur content (currently found in the Severn Creek pool). Treatability would improve and the cost of chemicals would decrease considerably. This alternative, to be effective, also includes adding new raw water main booster pumping stations, a new 200,000 gallon storage tank, and telemetry. These improvements, including land acquisition, are estimated at $551,000. This alternative would continue to use the existing intake structure.

Dredging Thomas Lake was also considered in the study and was not recommended. The cost to remove three feet of sludge was estimated at $136,000. The sludge removal would only increase capacity by 20 acre-feet which would be a minuscule improvement. Also, it was noted that the lake has a very small recharge area. With such a limited recharge area, building another lake above the existing Thomas Lake would not be an effective alternative.

M.S. & E. also looked at the possibility of utilizing Elmer Davis Lake as a water supply source. A projected withdrawal amount of 1 mgd was compared to water levels in 1952 (a severe drought) and it was estimated that the water level of the lake would drop 5.3 feet. Under normal conditions, a 1 mgd withdrawal would lower the lake level by 1.7 feet. The study concluded that while this alternative would be the best from an engineering standpoint, it is politically unfeasible. Therefore, Elmer Davis Lake will continue to serve only as an emergency source of water per a 1994 agreement. The agreement stipulates that piping must remain above ground and be strictly temporary. There was some discussion about the length of time it would take to install temporary

infrastructure in the case of an emergency. Those present thought that it might take a week.

Mr. Gill reported on a conversation he had with a representative of Kentucky American regarding the possibility of serving part of Owen County. While there seemed to be some interest, the individual has not returned phone calls. Kentucky American's water supply problems were briefly discussed.

Judge Olds emphasized the importance of working with water suppliers who are at the edges of the County or already serving parts of the County such as Carroll County Water District No. 1.

The public hearing closed at 8:30 p.m.. After the public hearing, the regular meeting of the water supply planning council began with the selection of a preferred alternative. Based on the discussion of the alternatives, there was consensus that the Owenton intake be moved and the necessary infrastructure improvements be made. A corollary to the preferred alternative is to work with water suppliers at the edges of County to serve outlying areas of the County.

The Contamination Response Plans were discussed. One must be submitted for each supplier as part of the plan. The next meeting was scheduled for Monday, March 23, 1998 at 7:00 p.m. at the Owen County Courthouse. The meeting adjourned at 8:55 p.m..

OWEN COUNTY WATER SUPPLY PLANNING COUNCIL

March 23, 1998 Public Hearing & Meeting Summary

In Attendance:

Heidi Van Keuren, NKADD
Scott Taylor, Mayes, Sudderth & Etheredge
Bill Gill, Owenton Water
Mayor K.F. Ballard, City of Owenton
Marshall Gibson, Owenton Water Superintendent
Judge/Executive Tom Olds, Owen County Fiscal Court

The meeting began with a presentation by Scott Taylor of M.S. &E. on the Raw Water System Improvements Evaluation Study, prepared for the City of Owenton.

Mr. Taylor estimated that the demand for water would reach 1500 gpm or approximately 1.7 mgd by 2020. Based on this estimate, Mr. Taylor evaluated four alternatives to increase the raw water supply including: development of Elmer Davis Lake as a source; modifications to Lower Thomas Lake; changes to the Kentucky River intake, and Kentucky River raw water pumping and transmission main operation plans.

Mr. Taylor explained the yield analysis of Elmer Davis Lake. The City could withdraw 300,000 gpd and only drop the lake level by .8 feet, under normal conditions. Also, under normal conditions, the City could withdraw 1,250,000 gpd and only drop the lake level by 2.1 feet. However, under the 100 year drought scenario, a withdrawal of 1,250,000 gpd would drop the lake by 6.8 feet. Under the drought scenario, if the City withdrew its total projected demand of 2,000,000 gpd, the lake would drop by 22 feet. Some discussion followed regarding the Department of Fish & Wildlife's practice of dropping the lake level by 15 feet every two years to kill the shad in the lake. The study concluded that while Elmer Davis is an excellent source, it is politically unfeasible at this time. Correspondence from the Department of Fish & Wildlife, dated July 22, 1990, stated that "it is their position that no waters below the spillway crest should be allocated for municipal use."

Mr. Taylor reviewed the possibility of dredging Lower Thomas Lake to increase its capacity. However, it was concluded that the drainage area was just too small (156 acres compared to Elmer Davis' 4200 acres) to make dredging a cost-effective option. However, the area around the intake will need to be dredged to keep it functioning.

Mr. Taylor summarized an option that would add a raw water main booster pump and tank.

Under this scenario, the pumping rate of 1500 gpm could be achieved; however, the intake location would be at the same elevation and would still be drought-vulnerable.

Therefore, the recommended alternative is moving the intake location to a site near Highway 355 which will be directly in the Kentucky River pool. This alternative also calls for a new intake structure and pump station. The existing intake structure could be used as a backup. The estimated cost of this alternative is $658,300.

Mr. Taylor left copies of the study for members of the Fiscal Court and the Owenton Water Board. He answered questions from the Water Supply Planning Council. Judge Olds had several questions about putting in a new dam above Elmer Davis Lake and the approximate cost of a project like that. Mr. Taylor responded that the dam would probably cost at least $1 million and there would be additional costs such as land acquisition. Also, DOW might not approve a project in that location because it would impact Elmer Davis Lake.

Ms. Van Keuren updated the Council on the status of the Phase I plan. The plan has been approved. Also, a bill extending the water supply plan deadline by one year passed the House, but has not been passed by the Senate.

The public hearing to consider water supply protection recommendations opened at 8:50 p.m. and closed at 9:00 p.m. with no members of the public in attendance. The Council discussed the supply protection recommendations. The recommendation to promote sewer service to areas in the watersheds of the Thomas Lakes and Elk Lake was discussed. It would be expensive to serve Elk Lake since it quite a distance from the sewage treatment plant; however, the Council elected to leave the reference in because it is possible that the resort could be served with some sort of package treatment plant in the future. The Council adopted the supply protection recommendations.

Protection areas for each water source were reviewed and discussed. Those present agreed that the most likely potential contaminant to Lower Thomas Lake was aging septic systems. There isn't any agricultural land use in the watershed. The Severn Creek intake would primarily be impacted by agricultural run-off from higher elevations and even that would be fairly minimal. The only potential contaminant source around the Elk Lake reservoir was aging septic systems; however, there are few houses in the watershed.

Potential contaminant sources were identified and located on a map including open dump sites, junkyards, and a livestock market. Underground storage tanks and RCRA notifiers (companies using potentially hazardous chemicals such as auto repair shops and drycleaners) may not be identified on the map if there are too many of them.

The next meeting was scheduled for April 27, 1998 at 7:00 p.m. at the Courthouse.

OWEN COUNTY WATER SUPPLY PLANNING COUNCIL
April 27, 1998 Meeting Summary

In Attendance:

Judge/Executive Tom Olds, Owen County Fiscal Court
Mayor K.F. Ballard, Jr., City of Owenton
Carol F. Tudor, Tri-Village Water District
Charles F. Noel, Tri-Village Water District
Marshall Gibson, Owenton Water Works
Bill Gill, Owenton Water Board
Carl Stich, Elk Lake Water Company
Heidi Van Keuren, NKADD

The meeting began with a review of the March 23, 1998 meeting summary. Judge Olds noted that the information regarding Elk Lake needed to be clarified.

Ms. Van Keuren updated the Council on the recent water supply planning workshop at General Butler State Park. DOW has not formalized the amendment process as of yet. Also, DOW is talking about permitting for future use based on the projections in the water supply plan. Ms. Van Keuren will emphasize the average daily water needs and the desired pumping rate as described in M.S. & E.'s study. Also, Ms. Van Keuren informed the Council of DOW plan reviewer Mostafa Nikou's death. He had spoken to the Council last fall.

Ms. Van Keuren reviewed the outstanding information needed for Phase II. Those present agreed that the preferred alternative would comply with Kentucky River Authority regulations. Those regulations would factor into the permitting process and Owenton already pays a fee to the Authority for its withdrawals. Also, implementation of the plan will fall primarily on Owenton. It is estimated that implementation, including seeking and securing funding as well as construction, will take four years. When discussing costs, Mr. Gill felt that the cost to implement the project would probably be closer to $1,000,000. Also, Mr. Gill mentioned the other outstanding need, once the raw water problem was solved, was adding another ClariCone to the treatment plant. The cost for the additional ClariCone (including pump replacement) would be approximately $9,000. The total number of customers for Owenton and Tri-Village combined is 2,400.

Ms. Van Keuren distributed the original signature pages. DOW will keep three copies with original signatures and the county will keep a copy with original signatures. It was decided that those who were not in attendance at the meeting and had not participated in several years would be designated as non-participants rather than trying to obtain their signatures. At the 1999 meeting, the Council membership list will be reviewed and those who became non-participants

will be queried as to their interest. Ms. Van Keuren will distribute copies of the plan, once it is approved, to Council members.

As a part of general discussion, funding for projects identified in the plan was discussed. Mayor Ballard discussed the debt level of the city, which is currently at about $3,000,000 and moving the intake would raise that by another $1,000,000. He felt that is more debt than the city will be able to pay-off. Mr. Noel mentioned that Tri-Village keeps trying to apply for grants; however, their last application was turned down because it was too big at $2.25 million. Also, Tri-Village representatives stated that their rate for the first 2,000 gallons had risen to $17.00 to pay for needed improvements, not expansions of service.

Judge Olds asked those present to help prioritize the needs of the County. He asked if moving the intake was the highest priority. There was agreement that without solving the raw water supply problem, any other extensions of service were pointless. Judge Olds and Mayor Ballard will put together a letter of support for the project to start publicizing it to the Governor's office.

The next meeting was tentatively scheduled for February 22, 1999. Judge Olds thanked everyone for their work on the project and the meeting adjourned at 8:30 p.m..

Appendix B: Notifications

APPENDIX B
NOTIFICATIONS

Notifications to Adjacent Counties

A notification letter was sent to mayors, county judge/executives, and water suppliers in adjacent counties as required by 401 KAR 4:220 subsection 5.3(a) (see sample).

The following is a list of recipients of this letter:

Judge/Executive Gene McMurry, Carroll County
Mayor William Welty, City of Carrollton
Mayor Rick Flynn, City of Ghent
Mayor Mervin Kindoll, City of Prestonville
Mayor Rick Alexander, City of Sanders
Mayor David White, City of Worthville
Gerald Ballinger, Carrollton Utilities
John Romans, Dow Corning
Arthur Anderson, Green Acres Trailer Park
Alumax
Kentucky Utilities Ghent Generating Station
Judge/Executive Clarence Davis, Gallatin County
Mayor Ed Roulette, City of Glencoe
Mayor Dale Davis, City of Sparta
Mayor E. Richard Wood, City of Warsaw
River's Edge Campground
Judge/Executive Shirley Howard, Grant County
Mayor Winford Colson, City of Corinth
Mayor Martha Hicks, City of Crittenden
Mayor Norman Ferguson, City of Dry Ridge
Mayor Robert Hall Jones, City of Williamstown
Mayor William Catlett, Bullock Pen Water District
Dorothy Jamieson, I-75 Camper's Village Campground
Henry County Judge/Executive
Mayor of Campbellsburg
Mayor of Eminence
Mayor of Smithfield
Mayor of New Castle
Mayor of Pleasureville
Henry County Water District #2
Franklin County Judge/Executive
Mayor of Frankfort
Scott County Judge/Executive
Mayor of Georgetown
Mayor of Stamping Ground

Mayor of Sadieville
Georgetown Municipal Water & Sewer
Stamping Ground Water Works

Notification to Local Governments and Water Suppliers
A letter was also sent to local units of government in Owen County, water suppliers that provide water for use in Owen County, and all local governments that share the same water sources (Lower Thomas Lake and Severn Creek).

This letter notified recipients of Owen County's intent to prepare a water supply plan and also requested any pertinent information (see sample).

The following is a list of recipients:

Judge/Executive Tom Olds, Owen County
Mayor K.F. Ballard, City of Owenton
Mayor Rebecca Albaugh, City of Monterey
Mayor Billy Stamper, City of Gratz
Jim Smith, Carroll County Water District No. 1
Carl Stich, Elk Lake Water Company
Bill Allen, Glenwood Hall Resort and Country Club
Kentucky River Authority

Water Watch Groups
John Harrod, head of the Water Watch Group at the Owen County Elementary School, received a notification letter informing him of planning activities and inviting his participation (see copy).

Public Notifications
A Notice of Intent to Plan was advertised in the Owenton News-Herald in December 1994; however, the former planning representative did not keep a tearsheet in the files. An additional Notice of Intent to Plan will be run for Phase II planning activities. The public hearing to adopt planning objectives was advertised in the January 4, 1995 Owenton News-Herald (see copy).

Information Review
One document was received in response to the notification process, the March 1988 Lower Kentucky River Navigation Modernization: Feasibility Study. This document provided lots of useful historical information about water use by water supplier and distributor as well as projections of future water demand.

NORTHERN KENTUCKY AREA DEVELOPMENT DISTRICT
16 SPIRAL DRIVE / P.O. BOX 668 / FLORENCE, KENTUCKY 41022-0668
PHONE (606) 283-1885 / FAX (606) 283-8178 / TDD (606) 282-2707

December 5, 1994

Judge/Executive Gene McMurry
Carroll County Courthouse
Carrollton, Kentucky 41008

Dear Judge/Executive McMurry:

Owen County has begun the process of preparing a water supply plan in accordance with state law, KRS 151.110 through 116. The purpose of the plan is to assess the long-range water supply availability for the county. If the water resources appear adequate to supply the county's residential, commercial, municipal, and industrial needs for the next 20 years, then the water supply planning council will develop water supply protection for the county and cities. If the current water supply appears inadequate to meet the county's long-term needs, then the council will also prepare a water shortage response plan and select alternatives.

The Owen County Water Supply Planning Council consists of:

Carl J. Stich, Sr. - Elk Lake Water Company, Council Chair
Judge/Executive Tom Olds - Owen County Fiscal Court
Mayor Rebecca Albaugh - City of Monterey
W.E. Babington - Kennoy Engineers
Mayor K.F. "Jr" Ballard - City of Owenton
Carol Cox - Tri-Village Water District
Frank Downing - Owen Electric Cooperative
Marshall Gibson - Owenton Water & Sewer
Bill Gill - Owen Electric Cooperative
Charles Noel - Tri-Village Water District
Mayor Billy Stamper - City of Gratz

The planning council is interested in your input. If you or your representative would like to attend planning council meetings, receive minutes from the meetings, or submit written comments involving the plan or planning process, please don't hesitate to contact me at NKADD, 16 Spiral Drive, P.O. Box 668, Florence, KY 41022-0668, (606)283-1885 or Fax (606)283-8178.

Sincerely,

Paul Gardner/mw

Paul Gardner
Planning Representative

PG/mw

NORTHERN KENTUCKY AREA DEVELOPMENT DISTRICT
16 SPIRAL DRIVE / P.O. BOX 668 / FLORENCE, KENTUCKY 41022-0668
PHONE (606) 283-1885 / FAX (606) 283-8178 / TDD (606) 282-2707

December 5, 1994

Jim Smith
Carroll County Water District No. 1
513 Highland Avenue
P.O. Box 333
Carrollton, KY 41008

Dear Mr. Smith:

Owen County has begun the process of preparing a water supply plan in accordance with state law, KRS 151.110 through 116. The purpose of the plan is to assess the long range water supply availability for the county. If the water resources appear adequate to supply the county's residential, commercial, municipal, and industrial needs for the next 20 years, then the water supply planning council will develop water supply protection recommendations for the county and cities. If the current water supply appears inadequate to meet the county's long term needs, then the council will also prepare a water shortage response plan and select alternatives.

The Owen County Water Supply Planning Council consists of:

Carl J. Stich, Sr. - Elk Lake Water Company, Council Chair
Judge/Executive Tom Olds - Owen County Fiscal Court
Mayor Rebecca Albaugh - City of Monterey
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Mayor K.F. "Jr" Ballard - City of Owenton
Carol Cox - Tri-Village Water District
Frank Downing - Owen Electric Cooperative
Marshall Gibson - Owenton Water & Sewer
Bill Gill - Owen Electric Cooperative
Charles Noel - Tri-Village Water District
Mayor Billy Stamper - City of Gratz

In compliance with the planning requirements and in the interests of cooperation, please submit the following information to the below address by January 15, 1997:

1. A copy of any existing water or related plans; .

2. A statement of any current or potential conflicts, problems or opportunities that the local units or water systems want the planning process to examine or address, including water use rights, access and conservation; and

3. A description of expected changes in or around the planning unit that may alter current growth trends, including existing ordinances and planning goals.

If you would like to attend planning council meetings, receive minutes from the meetings or submit written comments involving the plan or planning process, please don't hesitate to contact me at NKADD, 16 Spiral Drive, P.O. Box 668, Florence, KY 41022-0668, (606)283-1885 or FAX (606)283-8178.

Sincerely,

Paul Gardner/mw

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Planning Representative

PG/mw

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16 SPIRAL DRIVE / P.O. BOX 668 / FLORENCE, KENTUCKY 41022-0668
PHONE (606) 283-1885 / FAX (606) 283-8178 / TDD (606) 282-2707

March 2, 1998

John Mays, Executive Director

John Harrod
Water Watch Group
Owen County Elementary School
1945 Highway 22 East
Owenton, KY 40359

Dear Mr. Harrod:

Owen County is currently in the process of preparing a water supply plan in accordance with state law, KRS 151.110 through 116. The purpose of the plan is to assess the long-range water supply availability for the County. Phase I of the plan, which has been submitted in a draft format to the Division of Water, assessed the adequacy of the existing water supply for the residential, commercial, municipal, and industrial needs through 2015. Since the Phase I plan identified some inadequacies in the City of Owenton's water supply sources, Phase II of the plan will focus on water supply alternatives, water shortage plans, and protection of the existing supply.

The Owen County Water Supply Planning Council currently consists of the following members:

Carl J. Stich, Sr. - Elk Lake Water Company, Council Chair
Judge/Executive Tom Olds - Owen County Fiscal Court
Mayor Rebecca Albaugh - City of Monterey
W.E. Babington - Gastineau & Associates
Mayor K.F. "Jr" Ballard - City of Owenton
Carol Tudor - Tri-Village Water District
Frank Downing - Owen County Electric Cooperative
Charles Noel - Tri-Village Water District
Mayor Billy Stamper - City of Gratz

As a member of the local water watch group, the Planning Council is interested in your input. If you would like to attend Planning Council meetings (next meeting is scheduled for Monday, March 23, 1998 at 7:00 p.m. at the Owen Co. Courthouse), receive minutes from the meetings, or submit written comments involving the plan or the planning process, please don't hesitate to contact me at NKADD, 16 Spiral Drive, P.O. Box 668, Florence, KY 41022-0668, (606)283-1885 or e-mail at hvankeuren@juno.com.

Sincerely,

Heidi Van Keuren
Planning Representative

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BUYING all types merchandise; old, yard sale furniture, etc. Call 4 or 484-5096.

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Chevrolet in Williamstown, 606-824-3337.

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Jan. 4, 1995
Marlene Wright
fax # 606-283-8178
phone # 606-283-1885
Public hearing
Water Supply Planning Council

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LEGALS

PUBLIC NOTICE

A public hearing will be held by the Owen County Water Supply Planning Council at the Owen County Courthouse at 7:00 p.m. on Tuesday, January 17, 1995 to consider the goals and objectives of the Owen County Water Supply Plan.

The Water Supply Plan will assess water use needs for the next twenty years, evaluate alternatives to meet those needs, and recommend supply protection measures. Copies of the draft goals and objectives, and 401 KAR 4:220 are available for public viewing at the NKADD during normal business hours.

Public Participation in the water supply planning process is encouraged and welcomed. Public comment on objectives, the planning process or any other issue affecting water supply planning will be heard during the meeting.

Send comments or questions to:
Paul Gardner or
Heidi Van Keuren
Northern Ky. Area
Development District
16 Spiral Drive
Florence, Kentucky 41042
Phone (606)283-1885

The Owen County Fiscal Court will be receiving bids for Health Insurance until the next regular scheduled meeting, January 10, 1995, 7:00 P.M.. The court has the right to reject or accept any and all bids.
Tom Olds
County Judge/Executive

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5658	RANKINS CLAUDE MR & MRS	$14.76
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5689	REED BILLYE & M BLEVINS	$12.57
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5745	REYNOLDS TERESA ANN	$400.89
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5778	RICHTER PAUL & ELMA	$12.57
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5798	RIDDLE WILLIAM JR	$159.13
5799	RIDENOUR CHARLES & MARY	$19.12
5807	RILEY JOHN & MYRTLE	$38.83
5811	RISCH GILBERT & JANET	$257.59
5812	RISCH ROBERT & TERESA	$388.84
5814	RISING ED SR & VERA	$19.12
5829	ROBBINS L ROBT & W OHAIR	$12.57

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6836	STONESTREET MA	
6848	STUZMAN STEPHA	
6855	SULLIVAN BARBAR	
6860	SUMMERS JAMES S	
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6882	SUTTON GLEN	
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6897	SWITZER ALLPHIN	
6898	SWORD MORRIS &	
6916	SWORD MORRIS B &	
6927	TAGGART JAMES	
	TANKSLEY KENNE	

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1992 CORSICA, 97000 miles, auto, air, runs & looks good; $3990 502-463-2612

1995 TOYOTA Camry, 24,000 miles, one owner, $13,300. 484-5971

1988 TOYOTA Corolla door, 5 speed manual transmission, maroon, 10 miles, one owner, AM/F cassette, new tires, good condition $2300. 484-3710

1989 GMC Short bed pick truck, cruise control, all electric, chrome wheels, new ti truck in good condition- owner 502-484-5897

1994 CHEVROL Cavalier, automatic, good c dition, low miles, teal gre $5,500. Karen Ruby 4 2556

PUBLIC HEARING NOTICE

To all interested citizens. The Owen County Water Supply Planning Council will hold a public hearing to solicit input concerning Chapter 8 of the Owen County Water Supply Plan. There are two components of this section.

1) Summarize the risk of water supply contamination, degradation, or depletion, and the impact of soils and geologic characteristics on supply protection.

2) Describe any local supply protection measures which may exist, and develop recommendations for supply protection.

The hearing will be held Monday, March 23, 1998 at 7:00 p.m. at the Owen County Courthouse, Owenton, Ky. For more information or to submit written comments, contact:

Heidi Van Keuren, NKADD
PO Box 668, 16 Spiral Dr., Florence, KU 41022-0668
(606)283-1885

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Rates.
Gary Woolums
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Owenton, KY 40359
ida B. Towles, 460 E.
St., Owenton ,KY
, Administratrix WWA
of Robert K. Bibb,
. Adair St., Owenton,
359
12-29-97
Hon. Charles E. Carter
Owenton, KY 40359
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1-5-98
Hon. Charles E. Carter
Owenton ,KY 40359

lyn Keith, Clerk
n District Court

LEGAL NOTICE
e is hereby given that
ements have been filed
ne estates listed below.
ptions to any settle-
must be filed within 10
. If there are no excep-
filed, each settlement
be approved and the
ciary relieved of his
onsibility.
Mike Hartman, Rt. 1,
ollton, KY 41008,
rdian for Jacob William
man, Rt. 1, Carrollton,
41008
l. 7-786

Atty. Hon. James E. Crawford
523 Highland Avenue
Carrollton, KY 41008
2) Gary Gibson, 435 Georgetown Rd., Owenton, KY 40359, Executor Estate of Nettie J. Gibson, 2785 Hwy 22, Owenton ,KY 40359
Qual. 3-27-97
3. Aldean Hamilton, 2220 Davis Lake Rd., Owenton, KY 40359, Guardian of Kalib Ray Hamilton, 2220 Davis Lake Road, Owenton ,KY 40359
Qual. 12-04-92

Carolyn Keith, Clerk
Owen District Court

PUBLIC HEARING
NOTICE

To all interested citizens. The Owen County Water Supply Planning Council will hold a public meeting to solicit input regarding water supply alternatives for the county. The meeting will be held Monday, January 26, 1998 at 7:00 p.m. at the Owen County Courthouse.

For more information contact: Heidi Van Keuren, NKADD, 16 Spiral Drive, P.O. Box 668, Florence, KY 41042-0668; 606-283-1885

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5643	RAISOR JENNIFER	$89.14	6631	SPENCER ELLIS &
5648	RALEY RICHARD & MARY C	$131.80	6647	ST CLAIR MARK B
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5658	RANKINS CLAUDE MR & MRS	$12.57	6693	STANSELL CHARL
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5745	REYNOLDS TERESA ANN	$213.82	6773	STEWART STACY L
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5807	RILEY JOHN & MYRTLE	$19.12	6882	SWEENEY DOUGLA
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5814	RISING ED SR & VERA	$388.84	6898	SWORD MORRIS B
5829	ROBBINS L ROBT & W OHAIR	$19.12	6916	TAGGART JAMES
		$12.57	6927	TANKSLEY KENNE

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1983 BUICK Century V-6, runs good, asking $800, Call 484-2111 between 12:00 and 12:30

1987 FORD F150 p/u 100K miles, in good condition, a/c p.s. asking $4100 or best offer 1-606-643-2199

1992 CORSICA, 97000 miles, auto, air, runs & looks good; $3990 502-463-2612

1995 TOYOTA Camry, 24,000 miles, one owner, $13,300. 484-5971

1988 TOYOTA Corolla door, 5 speed manual trai mission, maroon, 10 miles, one owner, AM/F cassette, new tires, good co dition $2300. 484-3710

1989 GMC Short bed pick truck, cruise control, all ele tric, chrome wheels, new tir truck in good condition- o owner 502-484-5897

1994 CHEVROLE Cavalier, automatic, good co dition, low miles, teal gree $5,500. Karen Ruby 48 2556

PUBLIC HEARING NOTICE

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1) Summarize the risk of water supply contamination, degradation, or depletion, and the impact of soils and geologic characteristics on supply protection.

2) Describe any local supply protection measures which may exist, and develop recommendations for supply protection.

The hearing will be held Monday, March 23, 1998 at 7:00 p.m. at the Owen County Courthouse, Owenton, Ky. For more information or to submit written comments, contact:

Heidi Van Keuren, NKADD
PO Box 668, 16 Spiral Dr., Florence, KU 41022-0668
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Appendix C: Workplan

Owen County Water Supply Planning Council
Proposed Scope of Work Phase I

NKADD staff is available to assist the Owen County Water Supply Planning Council with the preparation of a Phase I water supply plan as defined by 401 KAR 4:220.

Data Collection

1. Contact all water suppliers, distributors, the Industrial Authority, and the cities to obtain any plans that may impact future water usage in the county.

2. Assemble and review all information collected during the notification process.

3. Assess water use for historic and base years:

   a. Obtain usage figures for the following categories (residential, commercial/institutional, industrial, and public) from water suppliers and distributors for historic and base years.

   b. Obtain water use data for historic and base years from permitted water withdrawers.

   c. Work with the County Extension agent to identify those agricultural water users who are not served by a public water system. Estimate agricultural water use and type of use (i.e. irrigation, livestock, horsefarm, etc...) for historic and base years.

   d. Identify any permit-exempt water users and estimate usage for historic and base years.

4. Provide data needed for water use map including:

   a. Location of water supplier intakes.
   b. Location of water supplier wells, if any.
   c. Location of permitted water withdrawal intakes or wells that do not serve water suppliers.
   d. Location of agricultural users that do not rely on public water systems.
   e. Location of permitted water withdrawal sites.
   f. Location of permit-exempt users.

5. Provide data for service area map including the existing service area of all water suppliers and distributors and any planned expansions.

6. Work with the County Extension agent to summarize the soil characteristics and geology of the county.

Data Collection (cont.)

7. Identify and contact any single user that purchases 20 percent or more of the water produced by a water supplier and review any plans such users have that may affect future water use.

Engineering

1. Calculate the amount of available water at the site of any water supplier intake on a stream, if applicable.

2. Calculate the available amount of water at the site of any water supplier intake in a water supply reservoir during normal and drought conditions.

3. Compile any information available regarding past drought conditions and water availability for each supplier.

4. Determine safe yield, specific capacity, zone of contribution, and zone of influence for any water supplier well, if applicable.

5. Determine if vertical elevation of an intake or capacity of a pump limits access to available water and describe access limitations.

6. Estimate the cost of finding and repairing leaks for water suppliers whose water losses are greater than fifteen percent.

Planning

1. Develop a workplan for council approval and submission to the Cabinet.

2. Identify and describe obstacles to the planning process.

3. Describe water use conflicts or potential conflicts, if any.

Computer Modeling and Data Analysis

1. Forecast the amount of water available under normal and drought conditions, from each source being used by water suppliers in the planning unit, during the base year.

2. Forecast water supply demand for dates five, ten, fifteen, and twenty years after the base year. Forecasts will be made using IWR-MAIN water forecast software developed by the Army Corps of Engineers which allows for projections disaggregated by types of usage.

3. Compare water source availability and water demand for the base year and forecasted demand for dates five, ten, fifteen, and twenty years afterward, for each water supplier or source.

4. Evaluate adequacy of water supply to meet forecasted demand for twenty years past the base year. If inadequate, inventory water resources of the county. If adequate, evaluate and describe security of access to supply.

Graphics

1. Prepare a county base map according to regulation specifications.

2. Prepare a water use map according to regulation specifications.

3. Create disaggregated use diagrams for water withdrawn by each of the water suppliers including the categories of domestic, industrial, commercial, municipal, and lost or unaccounted-for water use during the base year.

4. Prepare a water supplier source map according to regulation specifications.

5. Prepare a service area map for the county showing the existing jurisdictional and service area boundaries, as well as planned expansions, of water supplier and distributors.

PHASE II

Planning

1. Identify and evaluate the risk of water supply degradation, contamination, or depletion resulting from activities in the watersheds or recharge areas in the planning unit.

2. Relate soils and geologic characteristics of the planning unit to the risks of water supply contamination, degradation, or depletion.

3. Describe local, existing regulatory and non-regulatory measures that protect the quality and quantity of the water supplier's sources.

4. Formulate recommendations for local regulatory and non-regulatory measures to protect the quality and quantity of the water supplier's sources through watershed recharge area, or wellhead protection programs.

5. Summarize the available information related to quality of water in the county.

6. Evaluate one or more alternatives if an existing source of supply is not adequate to meet forecasted needs for twenty years after the base year.

7. Examine each alternative that could potentially provide adequate water for normal supply provisions and clarify these alternatives for the public as prescribed by regulation.

8. If regionalization is considered to be a feasible alternative, identify and evaluate the factors related to supply dependability, contamination and other risks, a recommended management structure for the regional unit, and economic costs to individuals, water suppliers, and governments.

9. If interconnection between existing water suppliers is a specified alternative, provide reasonable assurance that the resulting demand for water is included in any water use forecast performed in conjunction with water supply planning for the proposed interconnected water supply system.

10. If capital improvement projects are proposed, projects shall be described including: design components; storage capacity; location alternatives; proposed construction schedule; expected federal, state, and local costs; types of financing; and sources of local funding.

11. Prepare water shortage response and supply contamination plans according to regulation.

12. Determine and describe steps necessary to implement the water supply plan including methods for updating and amending the plan, containing a timetable for initiation and completion of tasks, showing anticipated costs of implementation, and recommending procedures to coordinate actions of local government and others, and describing existing authority to implement the plan and identifying any legal charges or agreements that are necessary to implement the plan.

13. Include all outlined work in plan documents required by regulation.

Data Collection

1. Compile the following information:
   Historical streamflow data; average monthly precipitation from historical data; state and federal requirements and policies affecting water availability; construction data, usage data and average monthly static water levels, where readily available, of wells used at average rates of more than 10,000 gallons per day; generalized quality of water; description of groundwater aquifers, including confining layers, flow characteristics and predicted maximum yield; and ownership of dams or waterbody access rights to any reservoirs or impoundments.

2. Acquire and include U.S. Geological Survey topographic maps of the county.

3. Identify and assemble all readily available printed information related to water resources in the planning unit.

Graphics

1. Develop a tabular display of the degree of hazard posed by potential contaminants and create a map of potential sources of contamination.

2. Prepare a water resource map for the county according to regulations.

II. TIMETABLE AND QUARTERLY GOALS

It is estimated that completion of the plan will take two years. Phase II work would begin in July 1995, or earlier depending on the completion of phase I activities, and would be completed in June 1996. A timetable with quarterly goals is outlined below.

Timetable

July 1996 - September 1996

- Begin data collection (Phase II)
- Begin mapping requirements (Phase II)

October 1996 - December 1996

- Complete data collection (Phase II)
- Complete mapping requirements (Phase II)
- Alternative sources (If determined necessary by Phase I)

January 1997 - March 1997

- Prepare supply protection recommendations
- Prepare contamination response plans
- Public meetings

April 1997 - June 1997

- Prepare Final Plan Document (Phase II)

III. PLANNING BUDGET

The cost for Phase II planning activities is $10,000.00

Phase II

Planning	$	6,000
Data Collection	$	3,000
Graphics	$	1,000
Subtotal	$	10,000
TOTAL	**$**	**10,000**

VI. PROPOSED DEVIATIONS

There are no proposed deviations from the standard requirements of the Water Supply Planning regulation as allowed by 401 KAR 4:220.

Appendix D: Survey

OWEN COUNTY WATER SUPPLY PLAN
WATER SOURCE, TREATMENT, & DISTRIBUTION QUESTIONNAIRE

GENERAL INFORMATION

UTILITY NAME _____

MAILING ADDRESS _____

_____

OPERATIONS MANAGER _____

BUSINESS PHONE _____

PERSON COMPLETING QUESTIONNAIRE _____

WATER SOURCE & TREATMENT INFORMATION

RAW WATER SOURCE (SOURCES)

LOCATION	TYPE*	PERMIT WITHDRAWAL (MGPD)

*/R (River), L (Lake), W (Well), S (Spring), O (Other)

TREATMENT PLANT

LOCATION _____

CAPACITY (MGPD) _____

DATE BUILT _____

CONDITION _____

TYPE OF TREATMENT _____

_____

TREATED WATER SOURCE(S)

IF YOUR UTILITY PURCHASES TREATED WATER FROM ANOTHER UTILITY, PLEASE LIST THE SOURCE UTILITY, THE CONTRACT PRICE, AND THE MAXIMUM AMOUNT OF WATER THAT CAN BE DELIVERED TO YOU.

SOURCE UTILITY	CONTRACT PRICE	MAXIMUM DELIVERY
_____	_____	_____
_____	_____	_____
_____	_____	_____

TREATED WATER STORAGE

LOCATION	TYPE*	CAPACITY (MG)
_____	_____	_____
_____	_____	_____
_____	_____	_____

*S (Standpipe), E (Elevated Tank, G (Tank at Grade)

STORAGE SYSTEM COMMENTS (condition, etc.) _____

_____

_____

DISTRIBUTION SYSTEM

GENERAL CONDITION OF WATER LINES _____

_____

_____

BEST ESTIMATE OF SYSTEM EFFICIENCY (GALLONS TREATED AS COMPARED TO GALLONS SOLD)

	TREATED		SOLD		WATER LOSSES
1980	_____	MGPD	_____	MGPD	_____%
1985	_____	MGPD	_____	MGPD	_____%
1990	_____	MGPD	_____	MGPD	_____%
1993	_____	MGPD	_____	MGPD	_____%
RECENT MONTH	_____	MGPD	_____	MGPD	_____%

LEAK DETECTION METHODS _____

_____

NON-REVENUE SYSTEM USAGE

	ANNUAL AVG. (GAL/DAY)	MAX DAILY (GAL/DAY)
FIRE PROTECTION	_____	_____
PLANT OPERATIONS (Back Flush, etc.)	_____	_____
OTHER	_____	_____

PLEASE ATTACH CURRENT RATE SCHEDULE AND EFFECTIVE DATE (INCLUDING AVERAGE YEARLY PRICE OF WATER IN DOLLARS PER 1,000 GALLONS).

HAS THE PRICE OF WATER FLUCTUATED SEASONALLY IN THE PAST (E.G. IS IT MORE EXPENSIVE IN SUMMER AS OPPOSED TO WINTER)?

YES ____ NO ____ IF YES, EXPLAIN: _____

_____

TOTAL WATER USAGE (GALLONS PER DAY)

	ANNUAL AVERAGE	MAXIMUM DAILY
1980	_____ GPD	_____ GPD
1985	_____ GPD	_____ GPD
1990	_____ GPD	_____ GPD
1993	_____ GPD	_____ GPD

CUSTOMERS (TOTAL BY CATEGORY)

	1980	1985	1990	1993
RESIDENTIAL	_____	_____	_____	_____
COMMERCIAL	_____	_____	_____	_____
INDUSTRIAL	_____	_____	_____	_____
INSTITUTIONAL	_____	_____	_____	_____

AVERAGE USAGE BY CATEGORY

	1980	1985	1990	1993
RESIDENTIAL	_____ GPD	_____ GPD	_____ GPD	_____ GPD
COMMERCIAL	_____ GPD	_____ GPD	_____ GPD	_____ GPD
INDUSTRIA	_____ GPD	_____ GPD	_____ GPD	_____ GPD
INSTITUTIONAL	_____ GPD	_____ GPD	_____ GPD	_____ GPD

MAJOR WATER USERS BY CATEGORY

INDUSTRIAL	AVERAGE (GPD)	PEAK (GPD)

COMMERCIAL (RETAIL, WHOLESALE*, CAR WASHES, LAUNDRIES, ETC.)

*IF UTILITY SELLS TREATED WATER TO ANOTHER UTILITY, (INCLUDE HERE)

INSTITUTIONAL (SCHOOLS, HOSPITALS, NURSING HOMES, ETC.)

RESIDENTIAL (APARTMENTS, TRAILER PARKS, ETC.)

OTHER (PARKS, GOLF COURSES, SWIMMING POOLS, ETC.)

	AVERAGE (GPD)	PEAK (GPD)

DOES YOUR SYSTEM SELL TREATED WATER TO OTHER UTILITIES OR WATER DISTRICTS? ____ YES _____ NO

IF "YES", LIST CUSTOMERS, CONTRACT PRICE, AND CONTRACT AMOUNT, IF ANY.

CUSTOMER	CONTRACT PRICE
_____	_____
_____	_____
_____	_____

WHAT CURRENT CONSERVATION MEASURES, IF ANY, DO YOU FOLLOW? _____

_____

WHAT ABOUT CONSERVATION IN THE FUTURE?

_____

_____

DO YOU HAVE PLANS TO INCREASE CAPACITY WITHIN THE NEXT 10 YEARS? 5 YEARS? _____

_____

WHAT IMPROVEMENTS ARE PLANNED FOR YOUR FACILITIES?

_____

_____

IN THE NEXT 10 YEARS DO YOU ANTICIPATE AN INCREASE IN CUSTOMERS? WHY? WHY NOT?

_____

_____

_____

Appendix E: Soil Map

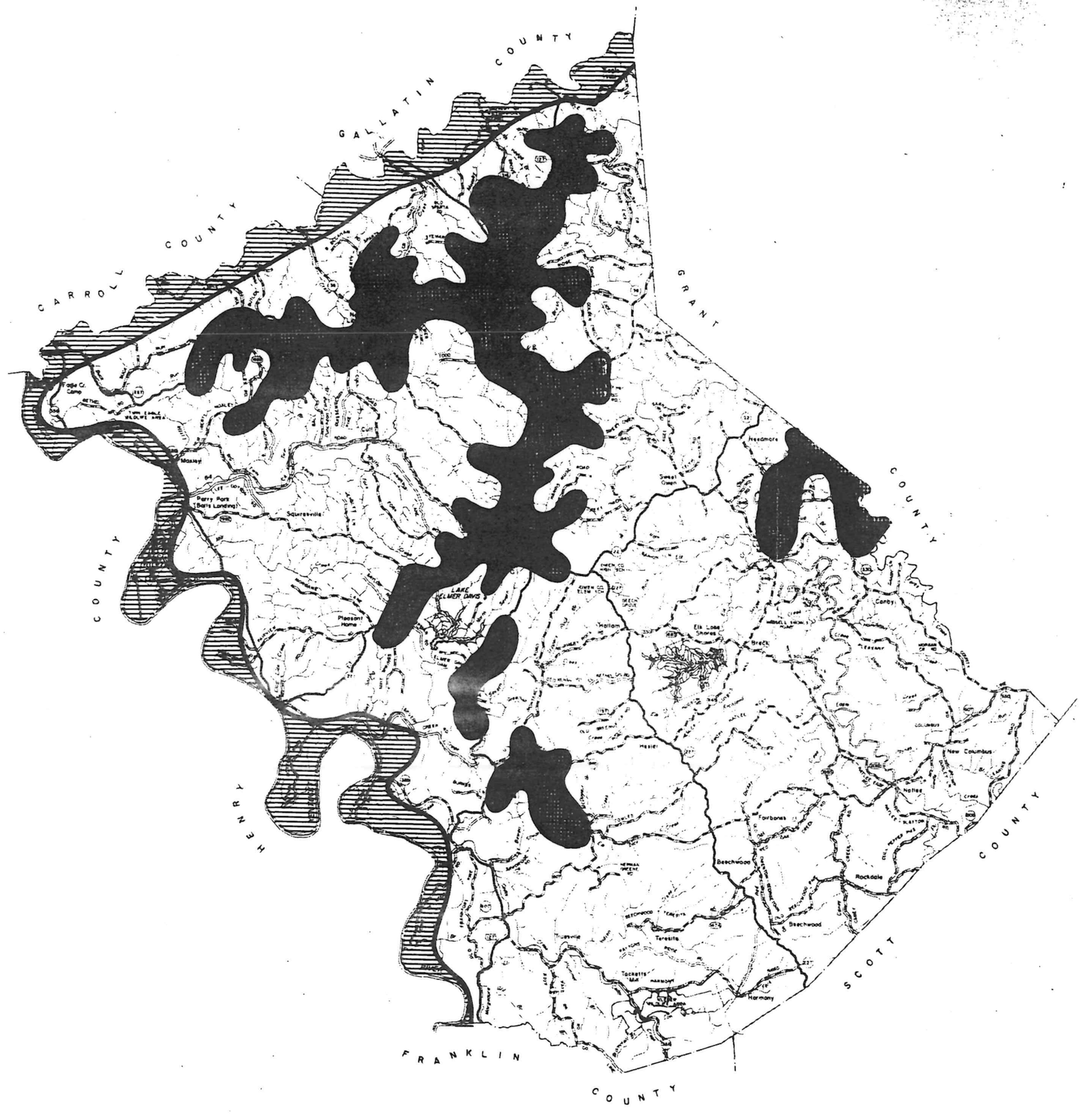


FIGURE 2
Major Soil Associations

LEGEND

- Otwell-Nolin-Markland Assoc.
- Eden Association
- Lowell-Nicholson Association

A COMPREHENSIVE PLAN FOR OWEN COUNTY, KENTUCKY

OWEN COUNTY PLANNING COMMISSION
JUNE 1981

SCALE IN MILES
0 — 2.5 — 5 — 7.5

The preparation of this map was financed with federal, state and local funds under a Joint Funding Administration Program prepared under the auspices of the Southeastern Federal Regional Council.

Appendix F: Obstacles to the Planning Process

APPENDIX F
OBSTACLES TO THE PLANNING PROCESS

There were two obstacles to the planning process: lack of computerized mapping capabilities and data collection constraints with regard to available groundwater.

Mapping Constraints

Owen County does not currently have any computerized mapping capabilities, nor does NKADD. It is very difficult to generate maps by hand that meet the standards dictated by water supply regulations. The Kentucky Geological Survey provided a base map that showed watershed boundaries, streams, and major roads; however, when other data is overlaid, the quality is fair, at best. Also, there were no agencies or businesses that were interested in preparing computer-generated maps through a contractual arrangement (typically at a cost of $1,000 to $2,000), as has been done with other water supply plans completed by NKADD.

NKADD is in the process of acquiring ARC/INFO software and hiring an experienced GIS technician for the Governor's Water Resource Commission project. The project will create computerized maps of water and wastewater infrastructure for all of NKADD's counties. Detailed maps should be available within two years or less. Also, the technician will be able to create other maps as required. Therefore, high-quality maps will certainly be available by the next plan update and probably by 2000. NKADD anticipates hardware and software costs of $25,000 and a technician's salary of $35,000 (benefits and overhead will be additional costs).

Data Collection Constraints

No information regarding specific capacity or safe yield of the Glenwood Hall wells was available. To obtain this data, the utility would need to contract with a consultant to do some testing. However, since Carroll County Water District No. 1 is scheduled to supply this area very soon, no efforts to obtain this data were made. It is estimated that necessary testing would cost a minimum of $1,000 and quite likely more. The Kentucky Rural Water Association is working with the utility on a wellhead protection plan, so some data may be available at no cost in the next year. The plan will be amended as necessary to include any new data.

Appendix G: Paying for the Planning Process

APPENDIX G
PAYING FOR THE PLANNING PROCESS

The Owen County Water Supply Planning Council received the following funding from DOW grants.

Phase I	$3,500.00
Phase II	$5,000.00
Total	**$8,500.00**

The grant funds were used by NKADD, as the planning representative, for staff salaries and burden, overhead, printing, newspaper advertisements, and travel. It is also estimated that NKADD has spent $1,300 in unreimbursed staff time on the project.

In addition, the City of Owenton has contracted with its engineering firm, M.S. & E., for an analysis of water supply alternatives and infrastructure improvements, at a cost of approximately $3,500.00.

Costs and methods of financing water supply alternatives will be discussed in the Implementation Chapter.

Appendix H: Water Resources Data

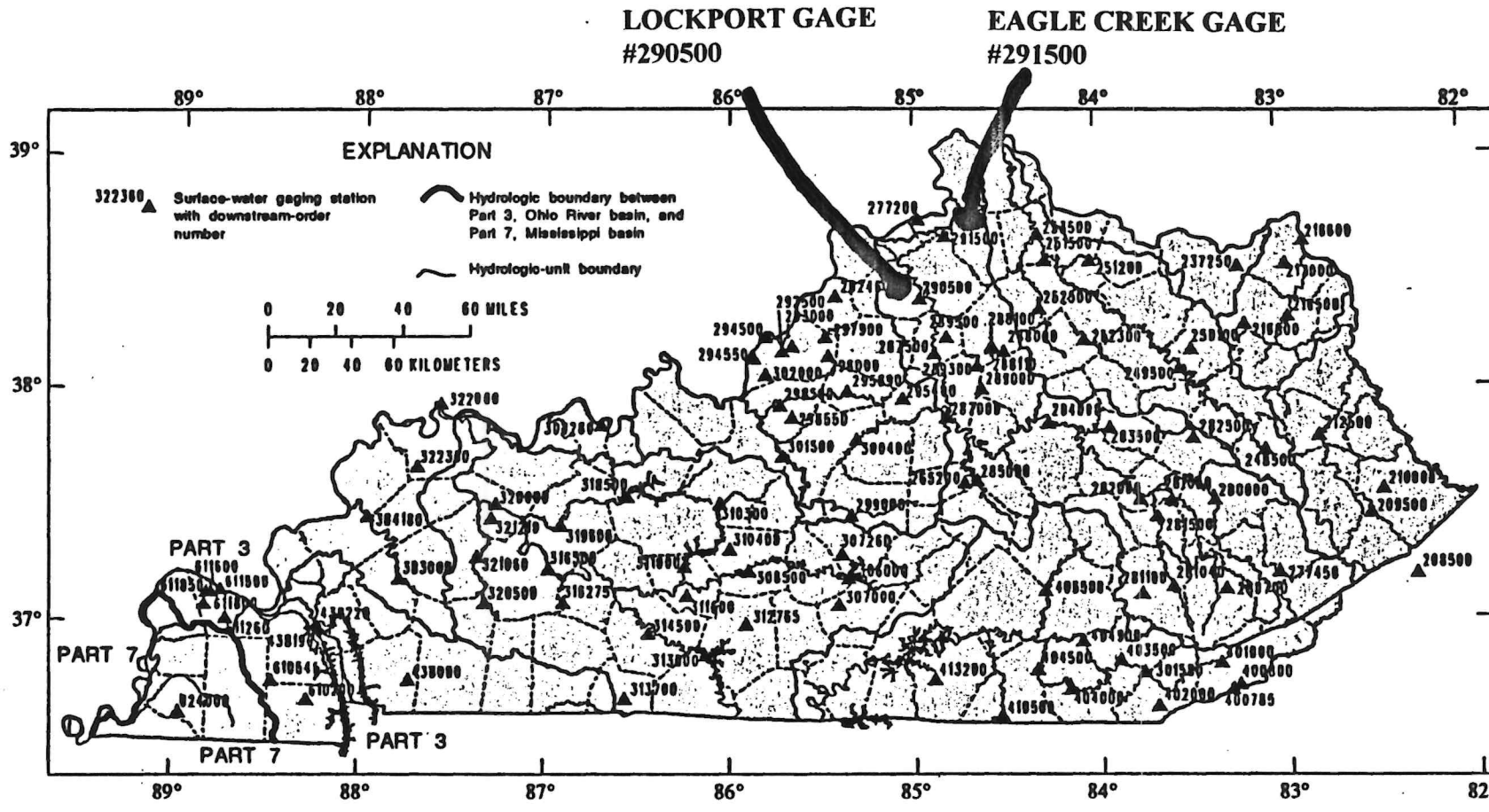


Figure 5. Location of gaging stations in Kentucky.

03290500 KENTUCKY RIVER AT LOCK 2, AT LOCKPORT, KY

LOCATION.--Lat 38°26'20", long 84°57'48", Henry County, Hydrologic Unit 05100205, on left bank at lock 2 at Lockport, 0.1 mi downstream from Sixmile Creek and at mile 31.0.

DRAINAGE AREA.--6,180 mi^2, of which about 196 mi^2 does not contribute directly to surface runoff.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1925 to current year. Monthly discharge only for some periods, published in WSP 1305. Monthly discharge only for June to January 1931, published in WSP 1305; figures of daily discharge published in WSP 698 are unreliable.

REVISED RECORDS.--WSP 1385: 1926-29, 1932, 1934-37, 1945. WSP 1555: Drainage area. See also PERIOD OF RECORD.

GAGE.--Water-stage recorder. Datum of gage is 433.36 ft above sea level. Prior to August 29, 1975, nonrecording gage at same site and datum. Auxiliary nonrecording gage at lock 3, 11.0 mi upstream.

REMARKS.--Estimated daily discharges: Feb. 10-14, Apr. 25-28, and May 16-18. Water-discharge records good except for periods of estimated record, which are fair. Flow regulated by Carr Fork Lake beginning January 1976 (station 03277446), Buckhorn Lake beginning December 1960 (station 03280800), Herrington Lake beginning November 1925 (station 03286000), and by hydroelectric plant at lock 7.

COOPERATION.--Auxiliary gage readings furnished by U.S. Army Corps of Engineers.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994
DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3590	2010	13500	6770	24900	20100	61100	15700	2230	2510	2420	926
2	2600	2180	9400	6680	19200	15600	50400	15500	2130	1880	2390	692
3	1980	2250	7230	7620	16800	18500	32700	11900	1590	1430	1990	651
4	1440	2610	10200	11500	13500	28100	26900	10400	1250	1110	1400	633
5	1020	3070	19700	23200	11100	34200	21900	10100	1150	949	2010	670
6	815	2920	31400	29500	9120	30400	19600	9840	1070	713	3470	699
7	854	2830	45100	36200	7920	21600	20200	12800	1250	799	5840	616
8	751	2720	45000	45700	9680	21600	20800	25700	1370	827	5970	590
9	483	2560	30900	47100	15900	40800	21500	33000	1620	773	4000	500
10	502	2430	18200	50000	30000	75100	22000	34900	2040	688	2700	455
11	670	2080	18700	45000	41000	90100	21800	31600	2110	619	1990	426
12	552	1960	17400	28600	52000	88700	28900	19100	2300	583	1440	391
13	499	2540	14700	25800	62000	80700	38300	13500	1980	545	1120	338
14	575	6340	13000	27900	63000	64300	39700	9410	1790	741	944	355
15	630	14200	12300	25500	60800	35800	33500	7880	1500	692	733	291
16	675	17800	11800	20800	50300	29700	46400	9000	1690	835	645	729
17	829	25100	11100	16500	27900	18500	53600	8200	1560	1620	610	1300
18	1620	27500	10600	13800	20900	16200	50100	7000	1530	3100	473	1330
19	3470	25700	10000	12300	18100	14500	40300	5780	1210	3430	519	1060
20	7180	23100	9080	10500	16000	13200	26000	4840	951	3270	985	1450
21	13200	14700	7570	9270	15200	12300	19200	3780	1080	2610	1380	1810
22	16200	9840	7550	7290	17600	11300	14900	3070	1290	1950	2450	1760
23	12300	7830	7900	5280	42200	10800	13000	2700	1550	1690	2590	1680
24	7950	6750	6600	5180	56000	12000	11700	2960	1690	1460	2240	1730
25	5580	5320	5990	11800	60000	11400	11000	2630	1280	2040	2290	1200
26	4190	4370	5630	31300	60100	10300	9300	2540	1150	2380	2250	571
27	3550	5420	5390	43000	51000	21600	8600	2080	1230	2130	1920	413
28	2890	9670	5170	61700	31500	47300	9100	1920	1800	2080	1450	415
29	2360	15400	4700	61000	---	57700	12100	1750	2630	2380	1130	380
30	2150	18800	4730	50000	---	62500	14200	1800	3200	2670	1090	353
31	2370	---	5330	37300	---	62500	---	2190	---	2670	1130	---
TOTAL	103475	270000	425870	814090	903720	1077400	798800	323570	49221	51174	61569	24414
MEAN	3338	9000	13740	26260	32280	34750	26630	10440	1641	1651	1986	814
MAX	16200	27500	45100	61700	63000	90100	61100	34900	3200	3430	5970	1810
MIN	483	1960	4700	5180	7920	10300	8600	1750	951	545	473	291

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1961 - 1994, BY WATER YEAR (WY)

MEAN	2448	5181	11560	13250	15410	18860	14430	9622	4866	2615	2482	2282
MAX	14120	13960	39510	37850	40170	40410	41540	34340	16050	7268	8589	14740
(WY)	1990	1987	1979	1974	1989	1975	1972	1983	1989	1992	1992	1979
MIN	450	603	668	770	4073	4423	2074	1518	508	654	445	385
(WY)	1970	1988	1966	1981	1968	1983	1986	1976	1988	1970	1986	1984

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR		FOR 1994 WATER YEAR		WATER YEARS 1961 - 1994	
ANNUAL TOTAL	3156887		4903303			
ANNUAL MEAN	8649		13430		8553	
HIGHEST ANNUAL MEAN					14030	1979
LOWEST ANNUAL MEAN					3891	1988
HIGHEST DAILY MEAN	58700	Feb 22	90100	Mar 11	121000	Dec 11 1978
LOWEST DAILY MEAN	448	Jul 12	291	Sep 15	131	Oct 4 1981
ANNUAL SEVEN-DAY MINIMUM	559	Oct 9	394	Sep 9	172	Jul 5 1988
INSTANTANEOUS PEAK FLOW			97800	Mar 12	123000	Jan 26 1937
INSTANTANEOUS PEAK STAGE			41.64	Mar 12	56.85	Jan 24 1937
10 PERCENT EXCEEDS	21800		40500		21700	
50 PERCENT EXCEEDS	4730		5780		3840	
90 PERCENT EXCEEDS	785		707		650	

KENTUCKY RIVER BASIN

03290500 KENTUCKY RIVER AT LOCK 2, AT LOCKPORT, KY--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1973 to September 1991.
WATER TEMPERATURES: January 1973 to September 1991.

REMARKS.--Flow regulated by Buckhorn Lake, Herrington Lake, and hydroelectric plant at lock 7.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 660 microsiemens, Oct. 31, 1986; minimum daily, 100 microsiemens, Sept. 23, 1973.
WATER TEMPERATURES: Maximum daily, 33.0°C, Aug. 10, 11, 1980, July 29, 1988; minimum daily, 0.0°C, on several days during winters.

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (FT^3/S)	SPE-CIFIC CON-DUCT-ANCE (US/CM)	PH WATER WHOLE FIELD (STAND-ARD UNITS)	TEMPER-ATURE WATER (DEG C)	TUR-BID-ITY (NTU)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	HARD-NESS TOTAL (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)
OCT 1993												
14...	1130	611	310	7.8	19.0	5.4	8.1	88	K4	K8	150	39
DEC												
23...	1040	8470	325	8.0	5.5	17	12.1	97	43	52	140	41
FEB 1994												
08...	1200	7610	270	6.8	3.0	8.9	8.6	65	55	97	120	34
APR												
13...	1050	46300	270	7.7	13.0	27	9.9	96	2100	4000	130	36
JUN												
08...	1100	1330	293	8.4	22.5	3.4	9.1	108	K10	K12	130	37

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE WATER DIS IT FIELD MG/L AS HCO3	ALKA-LINITY WAT DIS TOT IT FIELD MG/L AS CACO3	ALKA-LINITY WAT DIS TOT FET FIELD MG/L AS CACO3	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SULFATE DIS-SOLVED (MG/L AS SO4)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)
OCT 1993											
14...	12	10	3.5	--	--	--	8.6	69	0.20	5.6	201
DEC											
23...	8.9	5.4	2.1	113	92	90	5.3	45	0.10	5.6	186
FEB 1994											
08...	7.9	4.9	1.8	75	62	61	6.0	44	0.10	5.3	163
APR											
13...	8.7	4.4	1.3	88	72	72	4.2	50	0.10	5.4	168
JUN											
08...	9.0	6.1	2.0	103	85	86	5.7	47	0.10	2.6	169

03290500 KENTUCKY RIVER AT LOCK 2, AT LOCKPORT, KY--Continued
(National stream-quality accounting network station)

WATER-QUALITY DATA, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994

DATE	NITROGEN, NITRITE DISSOLVED (MG/L AS N)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS DISSOLVED (MG/L AS P)	PHOSPHORUS ORTHO, DISSOLVED (MG/L AS P)	ALUMINUM, DISSOLVED (UG/L AS AL)	BARIUM, DISSOLVED (UG/L AS BA)	COBALT, DISSOLVED (UG/L AS CO)	IRON, DISSOLVED (UG/L AS FE)
OCT 1993											
14...	0.010	0.850	0.050	<0.20	0.040	0.040	0.050	<10	32	<3	4
DEC											
23...	<0.010	1.10	0.050	<0.20	0.070	0.030	0.060	30	24	<3	29
FEB 1994											
08...	0.020	1.20	0.040	0.20	0.090	0.050	0.040	20	20	<3	30
APR											
13...	0.020	0.810	0.050	0.30	0.180	0.040	0.050	60	21	<3	59
JUN											
08...	0.020	0.390	0.020	0.60	0.060	<0.010	<0.010	30	25	<3	4

DATE	LITHIUM DISSOLVED (UG/L AS LI)	MANGANESE, DISSOLVED (UG/L AS MN)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	STRONTIUM, DISSOLVED (UG/L AS SR)	VANADIUM, DISSOLVED (UG/L AS V)	SEDIMENT, SUSPENDED (MG/L)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM
OCT 1993											
14...	<4	6	<10	1	<1	<1.0	200	<6	--	--	--
DEC											
23...	<4	14	<10	<1	<1	<1.0	130	<6	29	663	69
FEB 1994											
08...	<4	22	10	2	<1	<1.0	110	<6	32	658	87
APR											
13...	<4	3	<10	1	<1	<1.0	140	<6	111	13900	80
JUN											
08...	<4	1	<10	<1	<1	<1.0	140	<6	43	156	66

KENTUCKY RIVER BASIN

03291500 EAGLE CREEK AT GLENCOE, KY

LOCATION.--Lat 38°42'18", long 84°49'26", Owen County, Hydrologic Unit 05100205, on left bank 600 ft upstream from bridge on U.S. Highway 127, 0.6 mi south of Glencoe, 5.8 mi downstream from Tenmile Creek, and at mile 21.6.

DRAINAGE AREA.--437 mi^2.

PERIOD OF RECORD.--April 1915 - September 1918, October 1918 - December 1920 (gage heights only), May 1928 - September 1931, June 1938 - September 1977, December 1988 to current year. Monthly discharge only for May 1915, June 1938, published in WSP 1305.

REVISED RECORDS.--WSP 1275: 1916-17, 1920(M). WSP 1555: Drainage area. WSP 1908: 1939-40(M), 1943(M), 1945(M), 1948(P), 1950(M), 1956-57(P), 1960(M).

GAGE.--Water-stage recorder. Datum of gage is 508.52 ft above sea level. Prior Oct. 1, 1950, nonrecording gages at same site and datum. Oct. 1, 1950 to Oct. 19, 1960, nonrecording gage 600 ft downstream at same datum.

REMARKS.--Estimated daily discharges: Dec. 12 to Jan. 1, and 16-22. Records good, except for periods of estimated record, which are fair. Specific conductance and temperature measurements made in conjunction with discharge measurements are published in the miscellaneous water-quality data section.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1993 TO SEPTEMBER 1994--DAILY MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.5	34	179	68	440	293	537	5480	53	21	55	25
2	4.5	35	141	105	324	278	475	1360	47	18	35	11
3	4.2	36	242	420	300	270	495	656	43	18	37	5.6
4	3.5	37	4470	755	233	305	711	484	40	19	96	3.9
5	3.5	54	6270	592	223	344	542	402	37	28	84	3.2
6	2.6	54	1610	408	186	290	469	344	34	22	134	2.8
7	2.0	53	559	5290	177	241	2230	5460	35	26	133	2.4
8	1.8	50	326	3470	708	265	961	4150	67	27	124	2.0
9	1.9	48	229	737	7960	292	541	1070	71	25	73	1.8
10	1.9	46	191	407	2360	4250	7300	554	54	26	48	1.6
11	2.0	44	165	306	671	4050	4830	388	42	30	37	1.8
12	2.1	46	144	275	439	2980	3300	303	37	23	30	1.9
13	2.1	219	157	368	463	2240	2710	241	33	25	26	1.6
14	2.1	5650	357	676	880	1830	1590	611	29	75	73	1.5
15	2.0	8310	1950	394	515	1060	917	4310	26	398	83	1.7
16	2.7	1830	1060	210	394	598	3750	3130	23	248	32	1.7
17	3.8	5160	456	160	347	428	1250	890	22	113	25	2.0
18	4.6	5860	290	135	301	378	589	408	30	56	20	2.0
19	8.4	919	227	115	301	345	423	278	25	36	16	1.7
20	25	402	180	105	379	304	325	220	23	28	13	1.5
21	1580	250	155	98	1090	289	255	181	21	78	12	1.3
22	491	182	140	96	869	288	224	153	21	383	10	1.1
23	183	143	125	92	8170	292	188	130	20	267	9.7	1.0
24	105	121	115	279	2870	281	163	112	21	117	8.8	1.2
25	74	105	105	4700	767	245	145	97	18	62	8.0	1.2
26	58	98	96	8130	484	274	130	254	19	58	7.0	1.1
27	49	1220	88	5650	363	4010	348	197	61	35	6.5	1.1
28	42	2030	82	16200	317	6480	643	104	59	28	6.5	.99
29	38	556	76	7240	---	2370	8200	78	35	462	6.7	.84
30	35	271	72	1270	---	885	10100	66	26	510	5.5	.83
31	35	---	68	657	---	589	---	59	---	127	14	---
TOTAL	2774.3	33863	20325	59408	32531	37044	54341	32170	1073	3389	1268.7	87.36
MEAN	89.5	1129	656	1916	1162	1195	1811	1038	35.8	109	40.8	2.91
MAX	1580	8310	6270	16200	8170	6480	10100	5480	71	510	134	25
MIN	1.9	34	68	68	177	241	130	59	19	18	5.5	.83
CFSM	.20	2.58	1.50	4.39	2.66	2.73	4.15	2.37	.08	.25	.09	.01
IN.	.24	2.88	1.73	5.06	2.77	3.15	4.63	2.74	.09	.29	.11	.01

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1916 - 1994, BY WATER YEAR (WY)

MEAN	110	358	646	955	1116	1308	939	597	409	247	128	111
MAX	1005	1641	1874	3170	3295	5197	2909	2411	1428	1016	755	1355
(WY)	1976	1973	1952	1950	1956	1964	1948	1961	1928	1957	1977	1965
MIN	.000	.000	.000	2.85	44.6	120	131	25.5	1.56	.14	.000	.000
(WY)	1931	1931	1931	1931	1954	1941	1976	1930	1930	1930	1930	1930

SUMMARY STATISTICS	FOR 1993 CALENDAR YEAR		FOR 1994 WATER YEAR		WATER YEARS 1916 - 1994	
ANNUAL TOTAL	265668.0		278274.36			
ANNUAL MEAN	728		762		572	
HIGHEST ANNUAL MEAN					1059	1973
LOWEST ANNUAL MEAN					117	1954
HIGHEST DAILY MEAN	11900	Feb 22	16200	Jan 28	39300	Mar 10 1964
LOWEST DAILY MEAN	1.9	Oct 8	.83	Sep 30	.00	Jul 15 1930
ANNUAL SEVEN-DAY MINIMUM	2.0	Oct 7	1.0	Sep 24	.00	Jul 15 1930
INSTANTANEOUS PEAK FLOW			20500	Jan 28	58200	Mar 10 1964
INSTANTANEOUS PEAK STAGE			17.12	Jan 28	26.05	Mar 10 1964
INSTANTANEOUS LOW FLOW			.75	Sep 29		
ANNUAL RUNOFF (CFSM)	1.67		1.74		1.31	
ANNUAL RUNOFF (INCHES)	22.62		23.69		17.80	
10 PERCENT EXCEEDS	1970		2230		1280	
50 PERCENT EXCEEDS	204		134		96	
90 PERCENT EXCEEDS	7.7		3.0		1.1	

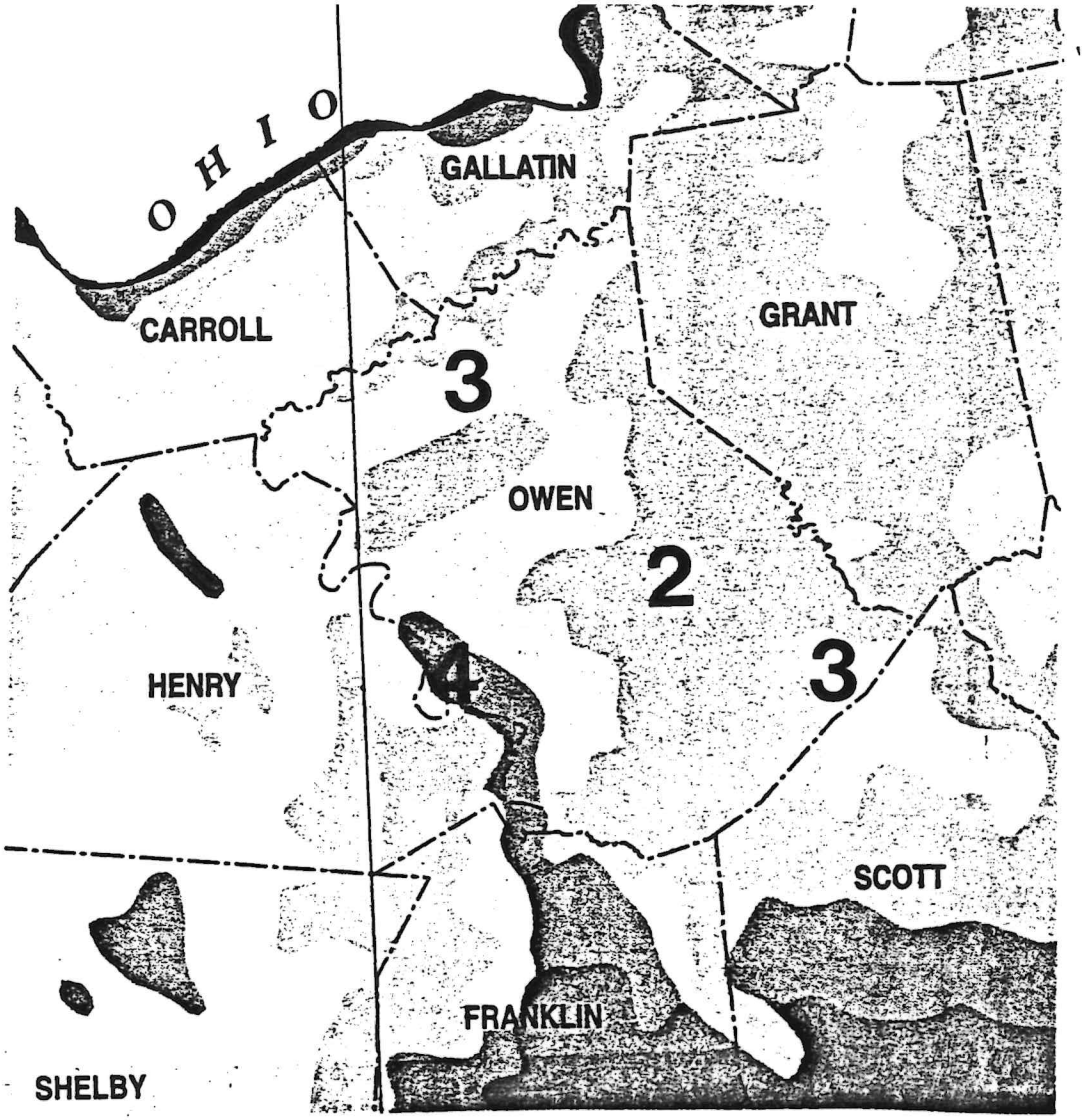
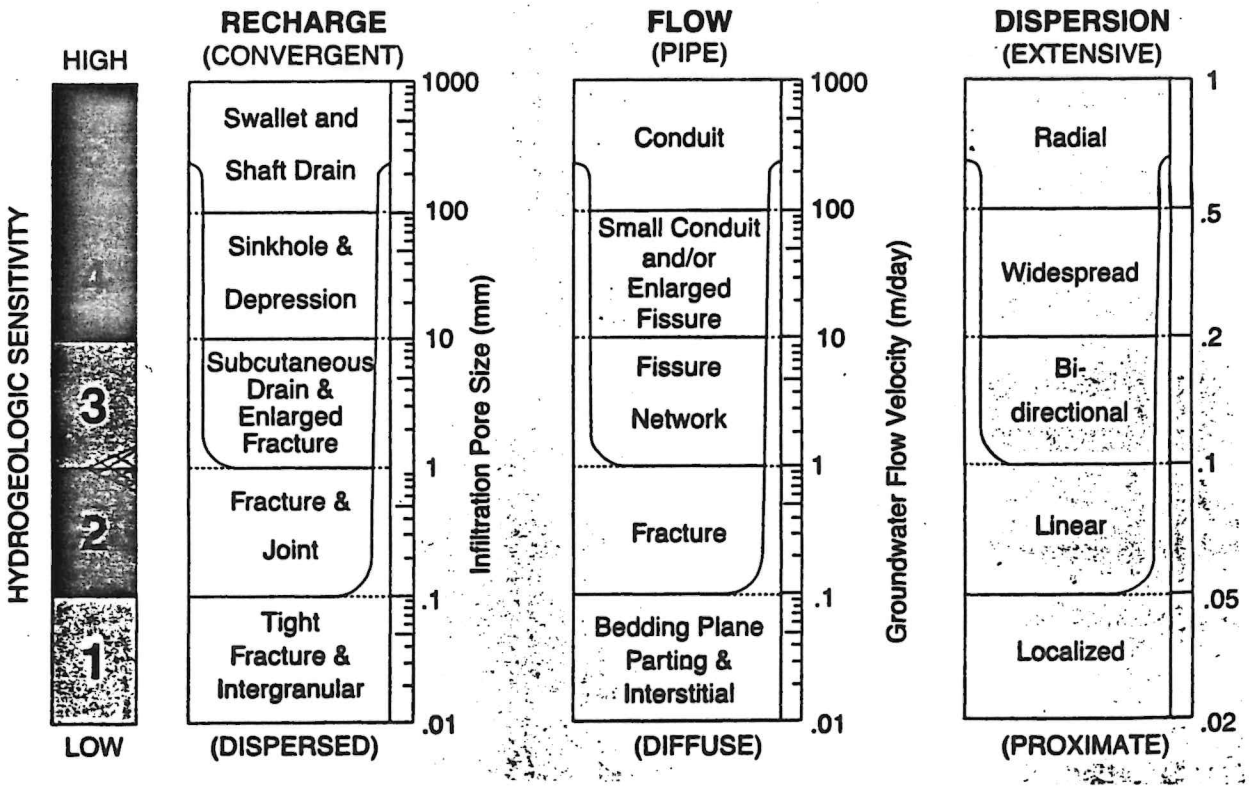
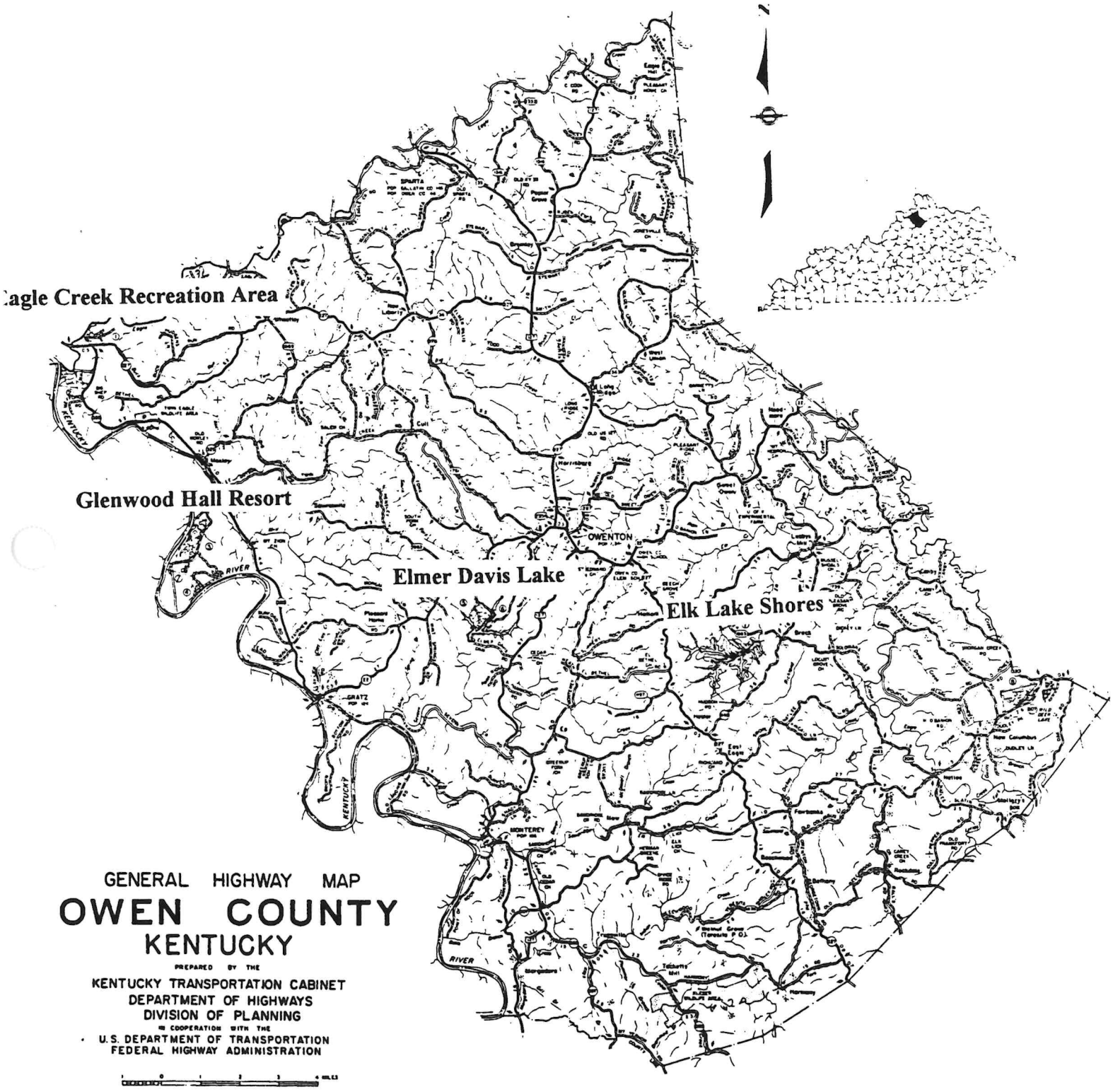


Figure 1: Hydrogeologic Sensitivity Rating Graph



WATER-ORIENTED RECREATIONAL RESOURCES



Chapter 151

GEOLOGY AND WATER RESOURCES

Executive Order Note: Executive Order 96-697, issued 5-31-96, established the Central Investigation Section within the Office of Legal Services of the Natural Resources and Environmental Protection Cabinet, which will be responsible for investigations conducted pursuant to the provisions of KRS Chapters 149, 151, 224, and 350 for compliance with provisions of the laws and the regulations promulgated under them, and the CIS will also provide support for and coordinate NREPC's participation in investigations involving intra- and inter-agency organizations, sister states, and federal authorities, and shall also be responsible for administrative investigations necessary for the effective and efficient management of the NREPC.

CROSS REFERENCES

Water supply plan requirements, 401 KAR 4:220
Definitions for Kentucky river authority, 420 KAR 1:010
Administrative procedures of the authority, 420 KAR 1:020
Tier I and tier II water use fees, 420 KAR 1:040, 420 KAR 1:050

151.040 Reports and publications

The Kentucky Geological Survey shall report periodically on its findings to the Governor and General Assembly and such reports shall be available to the public. It shall at all times furnish cooperative services to the Cabinet for Economic Development and such other state agencies as may request its services, and make available to those agencies such information and data as are at the disposal of the survey. The survey may issue reports, maps, and other publications for sale at a price prescribed by the governing authorities of the University of Kentucky.

HISTORY: 1992 c 105, § 66, eff. 7-14-92
1982 c 396, § 22; 1958 c 122, § 2; 1948 c 224, § 4

151.110 Water resources policy; duties of cabinet

(1) (a) The conservation, development, and proper use of the water resources of the Commonwealth of Kentucky have become of vital importance as a result of population expansion and concentration, industrial growth, technological advances, and an ever increasing demand for water for varied domestic, industrial, municipal, and recreational uses. It is recognized by the General Assembly that excessive rainfall during certain seasons of the year causes damage from overflowing streams. However, prolonged droughts at other seasons curtail industrial, municipal, agricultural, and recreational uses of water and seriously threaten the continued growth and economic well-being of the Commonwealth. The advancement of the safety, happiness, and welfare of the people and the protection of property require that the power inherent in the people be utilized to promote and to regulate the conservation, development, and most beneficial use of the water resources. It is hereby declared that the general welfare requires that the water resources of the Commonwealth be put to the beneficial use to the fullest extent of which they are capable, that the waste or nonbeneficial use of water be prevented, and that the conservation and beneficial use of water be exercised in the interest of the people. Therefore, it is declared the policy of the Commonwealth to actively encourage and to provide financial, technical, or other support for projects that will control and store our water resources in order that the continued growth and development of the Commonwealth might be assured. To that end, it is declared to be the purpose of KRS Chapters 146, 149, 151, 224, 262, and KRS 350.029 and 433.750 to 433.757 for the Commonwealth to permit, regulate, and participate in the construction or financing of facilities to store surplus surface water for future use; to conserve and develop the ground water resources of the Commonwealth; to require local communities to develop long range water supply plans; to protect the rights of all persons equitably and reasonably interested in the use and availability of water; to prohibit the pollution of water resources and to maintain the normal flow of all streams so that the proper quantity and quality of water will be available at all times to the people of the Commonwealth; to provide for the adequate disposition of water among the people of the Commonwealth entitled to its use during severe droughts or times of emergency; to prevent harmful overflows and flooding; to regulate the construction, maintenance, and operation of all dams and other barriers of streams; to prevent the obstruction of streams and floodways by the dumping of substances therein; to keep accurate

records on the amount of water withdrawal from streams and watercourses and reasonably regulate the amount of withdrawal of public water; and to engage in other activities as may be necessary to conserve and develop the water resources of the Commonwealth of Kentucky, and to ensure adequate supply of water for domestic, agricultural, recreational, and economic development uses.

(b) The cabinet shall:

1. Provide leadership in water use efficiency for all water uses;
2. Promote conservation;
3. Offer technical assistance and conduct research;
4. Be the lead agency with other state and local agencies to incorporate conservation measures and incentives into their programs;
5. Sponsor "technology transfer sessions" on water conservation to commercial and industrial operations; and
6. Provide leadership to communities looking for information and methods for coping with the issues of growth and water supply.

(c) Subsection (1)(b) shall not be construed as changing the relationship between the cabinet and the Kentucky River Authority and their respective responsibilities for oversight of the Kentucky River as set out in KRS 151.700 and 151.720.

(2) It is a finding of the General Assembly that groundwater is an important but vulnerable natural resource of this state, that the majority of rural Kentuckians rely exclusively on groundwater for drinking, and that groundwater is inextricably linked to surface waters which may also serve as a drinking water resource. It is also a finding that groundwater is a resource equally vital for agricultural, commercial, and industrial purposes and that useable groundwater is critical to the future development of these industries. Therefore, it shall be the policy of this state to manage groundwater for the health, welfare, and economic prosperity of all citizens.

HISTORY: 1992 c 239, § 1, eff. 7-14-92
1990 c 410, § 1, c 307, § 1; 1986 c 367, § 1; 1978 c 384, § 39; 1966 c 23, § 2

CROSS REFERENCES

Groundwater protection plans, 401 KAR 5:037

NOTES OF DECISIONS AND OPINIONS

113 SCt 1893, 508 US 1, 123 LEd(2d) 563 (1993), US v Idaho ex rel. Director, Idaho Dept. of Water Resources. The McCarran Amendment, 43 USC 666(a), waives federal immunity to suit in comprehensive water rights adjudications but does not waive immunity from "judgment for costs;" consequently, the United States need not pay items formerly taxed as costs that a state now terms "fees" such as a "filing fee" for notices of claims. (Ed. note: Idaho law construed in light of federal statute.)

151.120 Public water of Commonwealth, what constitutes

NOTES OF DECISIONS AND OPINIONS

848 FSupp 102 (ED Ky 1994), Green v City of Williamstown. (was entitled to withdraw water from artificial lake created by d even if flowage easements obtained before dam was built and lake created had not expressly granted city permission to take water; obtained permit from Kentucky to withdraw water and sought w for beneficial purpose of public consumption.

151.140 Withdrawal of water from public waters, per required; exceptions

Penalty: 151.990(1)(2)

NOTES OF DECISIONS AND OPINIONS

848 FSupp 102 (ED Ky 1994), Green v City of Williamstown. (was entitled to withdraw water from artificial lake created by d even if flowage easements obtained before dam was built and lake created had not expressly granted city permission to take water; obtained permit from Kentucky to withdraw water and sought w for beneficial purpose of public consumption.

151.182 Notice of violation and hearing thereon; demand hearing on denial, modification or revocation of permit

(1) Whenever the cabinet has reason to believe that a vio tion of any of the provisions of this chapter or regulation promulgated pursuant thereto has occurr it may issue and serve upon the person complai against a written notice of the provision of this cha or the regulation alleged to have been violated and facts alleged to constitute the violation thereof. Furth this notice shall require the person so complai against to answer the charges set out in the notice hearing before the cabinet at a time not less than th (30) days after the date of notice unless the per complained against waives in writing the thirty (30) period.

(2) Except as provided in KRS 151.297 regarding em gency situations, any person not previously heard connection with the issuance of any order or the mak of any final determination by which he considers h self aggrieved may file with the cabinet a petition all ing that the order or final determination is contrary law or fact and is injurious to him, alleging the grou and reasons therefor, and demand a hearing. An or or final determination includes, but is not limited the issuance, denial, modification, or revocation o permit, but does not include the issuance of a notic violation, the issuance of a letter identifying deficien in an application for a permit, a registration or a cer cation, or other nonfinal determinations. Unless cabinet considers that the petition is frivolous, it s serve written notice of the petition on each per named therein and shall schedule a hearing before cabinet not less than thirty (30) days after the dat such notice, or unless the person complained aga waives in writing the thirty (30) day period. The righ demand a hearing pursuant to this section shall be l ited to a period of thirty (30) days after the petitio has had actual notice of the order or final determi

tion complained of, or could reasonably have had such notice.

HISTORY: 1992 c 215, § 3, eff. 7-14-92
1980 c 253, § 1

CROSS REFERENCES

Definitions of administrative terms for 400 KAR Chapter 1, 400 KAR 1:001

Administrative service of process, computation of time and filing of documents, 400 KAR 1:030

Administrative discovery procedures, 400 KAR 1:040

Administrative hearings practice provisions, 400 KAR 1:090, 401 KAR 100:010

NOTES OF DECISIONS AND OPINIONS

113 SCt 1893, 508 US 1, 123 LEd(2d) 563 (1993), US v Idaho ex rel. Director, Idaho Dept. of Water Resources. The McCarran Amendment, 43 USC 666(a), waives federal immunity to suit in comprehensive water rights adjudications but does not waive immunity from "judgment for costs;" consequently, the United States need not pay items formerly taxed as costs that a state now terms "fees" such as a "filing fee" for notices of claims. (Ed. note: Idaho law construed in light of federal statute.)

848 FSupp 102 (ED Ky 1994), Green v City of Williamstown. Property owners' inverse condemnation action in federal court was not ripe for review before owners pursued inverse condemnation action in state court and pursued their administrative remedies under Kentucky law to challenge city's permit to withdraw water from artificial lake created by dam.

151.184 Hearing conducted by hearing officer; final determination by secretary; use of counsel; subpoena power; hearings to be public

(1) All hearings under this chapter shall be held before a qualified hearing officer, who may be a full-time employee of the cabinet, serve by contract, or be paid on a per diem basis at the discretion of the cabinet. After the conclusion of the hearing, the hearing officer shall within thirty (30) days make a report to the secretary and a recommended order which shall contain a finding of fact and a conclusion of law. If the secretary finds upon written request of the hearing officer that additional time is needed, then the secretary may grant an extension. The hearing officer shall serve a copy of his report and recommended order upon all parties of record to the proceeding and they shall be granted the right to file within fourteen (14) days of receipt exceptions thereto. The secretary shall consider the report, exceptions, and recommended order and decide the case. The decision shall be served by mail upon all parties and shall be a final order of the cabinet.

(2) Any party to a hearing conducted pursuant to this chapter may be represented by counsel, make oral or written argument, offer testimony, cross-examine witnesses, or take any combination of such actions. The record of the hearing shall be open to public inspection, and copies thereof shall be made available to any person upon payment of the actual cost of reproducing the original.

(3) In connection with a hearing the cabinet shall issue subpoenas in response to any reasonable request by any party to the hearing requiring the attendance and testimony of witnesses and the production of evidence relevant to any matter involved in the hearing. In case of refusal to obey a subpoena issued to any person, the Franklin Circuit Court, upon application by the cabinet, may issue to that person an order requiring him to appear before the cabinet, there to produce documentary evidence if so ordered or to give evidence touching the matter under investigation or in question; and any failure to obey the order of the court may be punished by the court as a contempt of court.

(4) All hearings conducted pursuant to this chapter shall be open to the public.

HISTORY: 1992 c 215, § 4, eff. 7-14-92
1980 c 253, § 2

CROSS REFERENCES

Definitions of administrative terms for 400 KAR Chapter 1, 400 KAR 1:001

Administrative service of process, computation of time and filing of documents, 400 KAR 1:030

Administrative discovery procedures, 400 KAR 1:040

Administrative hearings practice provisions, 400 KAR 1:090, 401 KAR 100:010

NOTES OF DECISIONS AND OPINIONS

848 FSupp 102 (ED Ky 1994), Green v City of Williamstown. Property owners' inverse condemnation action in federal court was not ripe for review before owners pursued inverse condemnation action in state court and pursued their administrative remedies under Kentucky law to challenge city's permit to withdraw water from artificial lake created by dam.

151.186 Appeals from final orders

(1) Appeals may be taken from all final orders of the cabinet. Within thirty (30) days from entry of the final order the appeal shall be taken to the Circuit Court of the county where the structure or activity which is the subject of the order is located. The party or parties affected by the final order shall file in the Circuit Court a petition which states fully the grounds upon which a review is sought and assign all errors relied on. The cabinet shall be named respondent, and service shall be had on the secretary. Summons shall be issued upon the petition directing the cabinet to send its entire record, properly bound, to the clerk of the Circuit Court after certifying that such record is its entire original record or a true copy thereof, which shall be filed by the clerk of the Circuit Court and considered by the Circuit Court on the review. After the case has been properly docketed in the Circuit Court, any party directly affected by the issues on appeal may, upon notice to the parties and upon proper showing and in the discretion of the court, be permitted to intervene. Upon hearing of the appeal, the findings of the cabinet shall be prima facie evidence of the facts found therein. The court shall review the entire record and the findings and final order of the cabinet.

(2) Appeals to the Court of Appeals from orders of the Circuit Court shall be taken in the manner provided in the Kentucky Rules of Civil Procedure.

HISTORY: 1992 c 215, § 5, eff. 7-14-92
1980 c 253, § 3

151.560 Flood Control Advisory Commission

(1) There is hereby created the Flood Control Advisory Commission, which shall be composed of sixteen (16) members appointed by the Governor as follows:

(a) Two (2) state legislators, one (1) from the Senate and one (1) from the House of Representatives; two (2) mayors; and two (2) county judges/executive; and

(b) One (1) member from each of the following river basins: Big Sandy; Licking; Kentucky; Salt; Green; Ohio River Main Stem; Tennessee; Mississippi; and Upper Cumberland; and

(c) The commissioner of the Department of Local Government or commissioner's designee.

(2) Except for the commissioner of the Department of Local Government, each member shall serve a four (4) year term, except the first commission members were appointed by the Legislative Research Commission to serve terms as follows:

(a) Three (3) members to serve for terms of two (2) years from the date of appointment;

(b) Three (3) members to serve for terms of three (3) years from the date of appointment; and

(c) Three (3) members to serve for terms of four (4) years from the date of appointment.

(3) Commission members may be reappointed. A vacancy in an unexpired term shall be filled for the unexpired portion of the term in the same manner as the original appointment to that term.

(4) Any member who misses three (3) consecutive meetings of the commission shall be deemed to have vacated the office. The commission shall declare the office vacant, and the office shall be filled as provided by subsection (3) of this section.

(5) Two (2) of the commission members shall be elected by the commission to serve on the Water Resources Authority of Kentucky, which service shall cease with the expiration of the term of appointment on the commission, if not sooner.

(6) The commission shall annually elect one (1) of its members as chairperson. The commission shall meet quarterly or more often if necessary. A quorum for the transaction of business shall be nine (9) members, and a majority of the members present at a meeting may take action on any matter legally before it.

(7) Members shall be paid their necessary expenses incurred in attending meetings and in the performance of their official duties.

(8) The commission shall be attached for administrative purposes to the Department of Local Government which shall provide the staff services and resources necessary to support the commission in the performance of its statutory duties through the Division of Flood Control established by KRS 147A.009.

(9) The commission shall promulgate administrative regulations as necessary to control internal procedures. The commission shall promulgate by administrative regulation the boundary for each river basin referre subsection (1)(b) of this section.

HISTORY: 1994 c 357, § 1, eff. 7-15-94
1990 c 507, § 21, eff. 7-13-90; 1988 c 110, § 1; 1984 c 88; 1982 c 450, § 70; 1980 c 154, § 1

Note: 1994 c 357, § 3, eff. 7-15-94, reads: Members of th Control Advisory Commission serving on the effective date of shall be eligible to complete the terms that they are serving time, but upon completion of those terms, their successors appointed in accordance with Section 1 of this Act. The term commissioner of the Department of Local Government shal upon the effective date of this Act.

151.580 Negotiation with federal agencies for operat maintenance of a navigable waterway within Ken approval of agreement; appropriation

NOTES OF DECISIONS AND OPINIONS

113 SCt 1893, 508 US 1, 123 LEd(2d) 563 (1993), US v Id rel. Director, Idaho Dept. of Water Resources. The Mc Amendment, 43 USC 666(a), waives federal immunity to suit i prehensive water rights adjudications but does not waive im from "judgment for costs;" consequently, the United States ne pay items formerly taxed as costs that a state now terms "fees" a "filing fee" for notices of claims. (Ed. note: Idaho law constr light of federal statute.)

822 FSupp 386 (WD Ky 1993), Becker v Crounse Corp. River is indisputable navigable waterway for purpose of conf admiralty jurisdiction.

KENTUCKY RIVER AUTHORITY

151.710 Kentucky River Authority

(1) The Governor shall appoint members to the Kent River Authority, created to carry out the essential lic purpose of protecting the health and welfare o people of the Commonwealth as declared in 151.700.

(2) The Governor shall appoint the secretary of the Na Resources and Environmental Protection Cabinet ten (10) other persons as the members of the autho The secretary may designate an alternate. Of the (10) persons, one (1) shall be a registered engineer, (1) an expert in water quality, one (1) a mayor, and (1) a county judge/executive. The mayor and the co judge/executive shall be officers from counties w obtain the major portion of their water supply from Kentucky River. Five (5) members shall reside i county adjacent to the main stem of the Kentu River, one (1) of the five (5) members residing in co ties adjacent to locks and dams one (1) through f (4); and one (1) member shall reside in a county a cent to either the North Fork, Middle Fork, or So Fork of the Kentucky River.

(3) Of the ten (10) members first appointed, two (2) s continue in office for terms of one (1) year, two (2) terms of two (2) years, three (3) for terms of three years, and three (3) for terms of four (4) years, as Governor designates. At the expiration of the origi terms and for all succeeding terms, the Governor s appoint a successor to the authority for a term of f

(4) years in each case. Members may be reappointed. A vacancy in an unexpired term shall be filled for the unexpired portion of the term in the same manner as the original appointment to that term.

(4) Each member shall receive as compensation one hundred dollars ($100) per day for attending a meeting of the authority.

(5) Any member who misses three (3) consecutive meetings of the authority shall be deemed to have vacated the office. The authority shall declare the office vacant and the office shall be filled as provided by subsections (2) and (3) of this section.

(6) The authority annually shall elect one (1) of its members as chairman. A quorum for the transaction of business shall be six (6) members, and a majority of the members present at a meeting may take action on any matter legally before the authority.

(7) Members shall be paid their necessary travel expenses incurred in attending meetings and in the performance of their official duties, in addition to the per diem compensation of one hundred dollars ($100).

(8) The authority shall meet at least quarterly, and may meet upon the call of the chairman.

(9) The chairman shall be paid necessary travel expenses and a one hundred dollar ($100) per diem compensation for conducting official business of the authority.

(10) The authority shall be attached for administrative purposes to the Natural Resources and Environmental Protection Cabinet, and the cabinet shall provide the necessary personnel to provide administrative services for the authority.

(11) The necessary travel expenses and per diem compensation of the members of the authority in attending meetings and in the performance of their official duties shall be paid by the authority.

(12) The authority shall promulgate administrative regulations necessary to carry out its duties, and shall report annually to the Governor and the Legislative Research Commission.

HISTORY: 1996 c 229, § 1, eff. 7-15-96
1990 c 500, § 1, eff. 7-13-90; 1986 c 383, § 2

Note: See KRS Chapter 47, Appendix A, Executive Budget (1996 c 380), Part IX, Item 41(a); see also Final Budget Memorandum p 447.

151.720 Powers of authority

The Kentucky River Authority is authorized and empowered to:

(1) Construct, reconstruct, provide for the major maintenance, or repair the locks and dams on the Kentucky River and all real and personal property pertaining thereto, as well as maintain the channel;

(2) Acquire by purchase, exercise of the rights of eminent domain, grant, gift, devise, or otherwise, the fee simple title to or any acceptable lesser interest in any real or personal property and by lease or other conveyance, contract for the right to use and occupy any real or personal property selected in the discretion of the authority as constituting necessary, desirable, or acceptable sites to fulfill its statutory authority and power;

(3) Lease its real or personal property to other state agencies, political subdivisions of the Commonwealth, corporations, partnerships, associations, foundations, or persons as the authority deems necessary to carry out the purposes of this section;

(4) Sell or otherwise dispose of its real or personal property in accordance with KRS 56.463 and 45A.045;

(5) Collect water use fees from all facilities using water from the Kentucky River basin, except those facilities using water primarily for agricultural purposes. Facilities charged such a fee may pass on all or any part of the fee;

(6) Issue revenue bonds in accordance with KRS 151.730;

(7) Employ persons to carry out the authority's responsibilities with revenue from the water use fees, including an executive director who shall serve at the pleasure of the authority;

(8) Contract for services with other state agencies, political subdivisions of the Commonwealth, corporations, partnerships, associations, foundations, or persons to perform its duties;

(9) Promulgate administrative regulations providing for clean water, which shall not be less stringent than the state and federal regulations for clean water;

(10) Exercise all other powers necessary to perform its public purpose to implement and enforce the plans developed by the authority pursuant to this section, and to enforce administrative regulations promulgated by the authority. The long-range water resource plan and drought response plan shall be implemented for the basin upon the direction of the authority;

(11) Develop comprehensive plans for the management of the Kentucky River within the basin, including a long-range water resource plan and a drought response plan. Each county within the basin shall develop a long-range water resource plan and submit it to the authority. The authority shall develop a unified long-range water resource plan for the basin. The authority shall conduct a public hearing on the plan, and submit its final unified plan for the basin to the Natural Resources and Environmental Protection Cabinet. The cabinet shall act upon the plan within six (6) months and shall approve the plan, unless it objects for good reason shown. A drought response plan for the basin shall be developed by the authority, and this plan shall be implemented for the basin upon the direction of the authority;

(12) Develop and promote a plan for the protection and use of groundwater within the basin. Administrative regulations may be promulgated implementing the plan, and these regulations shall not be less stringent than state and federal regulations protecting groundwater;

(13) Develop recreational areas within the basin. These recreational areas may be operated and funded by the state Department of Parks, Kentucky State Nature Preserves Commission, or other governmental entity as specifically authorized or permitted within the biennial executive budget. There is hereby created the Kentucky River Park to be located as determined by the authority;

(14) Utilize funds provided for recreational purposes within the biennial executive budget for major or minor maintenance if the authority certifies to the secretary of the Finance and Administration Cabinet that a significant

need exists for the repairs and no other funds are available for the maintenance;

(15) Coordinate the Kentucky River basin water resources activities among state agencies;

(16) Report quarterly on all of its activities to the legislative Committee on Appropriations and Revenue;

(17) Receive reports from state agencies on litigation concerning the Kentucky River, which agencies are hereby directed to report to the authority;

(18) Credit to the authority any income derived from the interest earned on the investment of the water use fees collected, which shall be available for the authority's expenditure; and

(19) Accomplish the watershed management mission of the authority, which is to fulfill the provisions of this section for the Kentucky River basin, the boundary of which shall be defined by a hydrologic map promulgated in an administrative regulation.

HISTORY: 1996 c 229, § 2, eff. 7-15-96
1992 c 453, § 1, eff. 7-14-92; 1990 c 500, § 2, c 496, § 44; 1986 c 383, § 3

Legislative Research Commission Note (7-15-96): In 1990, KRS 45.360 was repealed, and its provisions on the disposal of state-owned real or personal property were incorporated into KRS 45A.045 by amendment of that statute. See 1990 Ky. Acts ch. 496, secs. 67 and 1. Accordingly, pursuant to KRS 7.136(1)(e), the prior reference to the repealed statute in subsection (4) of this section has been replaced with the citation for the current statute.

Penalty: 151.990(2)

NOTES OF DECISIONS AND OPINIONS

113 SCt 1893, 508 US 1, 123 LEd(2d) 563 (1993), US v Idaho ex rel. Director, Idaho Dept. of Water Resources. The McCarran Amendment, 43 USC 666(a), waives federal immunity to suit in comprehensive water rights adjudications but does not waive immunity from "judgment for costs;" consequently, the United States need not pay items formerly taxed as costs that a state now terms "fees" such as a "filing fee" for notices of claims. (Ed. note: Idaho law construed in light of federal statute.)

151.723 Water use fees

(1) The rate of the water use fees collected by the authority shall be set for each year of the biennium based upon a total amount of funds necessary to carry out only those functions, projects, and expenses authorized by the General Assembly in the authority's biennial budget.

(2) At the time the authority submits its budget to the Governor's Office of Policy and Management, it shall certify to the General Assembly and the secretary of the Revenue Cabinet the total amount of water use reported for the preceding biennium by users subject to the water use fees. At least thirty (30) days prior to the effective date of the authority's budget, the secretary of the Revenue Cabinet shall establish a rate for each water use fee based upon an amount of water use projected for each year of the biennium from the amount reported, calculated to generate the amount of funds necessary to carry out the functions, projects, and expenses which have been authorized by the General Assembly. The rate shall be an amount for each one thousand (1,000) gallons of water use and shall be e tive for at least one (1) year.

(3) The authority shall define by administrative regul those uses of the Kentucky River or the waters o Kentucky River basin subject to a water use fee. W use fees shall not apply to facilities using wate agricultural purposes. The authority shall collect fees on a quarterly basis and pay the collected fees the State Treasury to the credit of a restricted fun use by the authority.

HISTORY: 1996 c 229, § 4, eff. 7-15-96

151.725 Authority's duty to bring action for penaltie injunctive relief; venue

(1) The authority shall bring an action for the recover penalties provided for in KRS 151.990, the paymen fees provided for in KRS 151.720, or for a restrai order, or a temporary or permanent injunction for prevention or correction of a condition constitutin threatening to constitute a violation of the adminis tive regulations promulgated by the authority, the lo range water resource plan, or a drought response p developed by the authority.

(2) All actions for penalties and injunctive relief for vi tions of the administrative regulations promulgated the authority, the long-range water resource plan, o drought response plan developed by the authority s be brought by the authority in the:

(a) Circuit Court having jurisdiction of the defen

(b) Circuit Court of the county in which the con constituting or threatening to constitute a tion of the administrative regulations authority, the long-range water resource pl drought response plan developed by the a is occurring; or

(c) In the Franklin Circuit Court.

HISTORY: 1996 c 229, § 6, eff. 7-15-96
1992 c 453, § 2, eff. 7-14-92

151.730 Revenue bonds

(1) The authority is hereby authorized to provide, at o (1) time or from time to time, for the issuance of revenue bonds for the purpose of paying all or any p of the cost of any one (1) or more projects undertak pursuant to KRS 151.720. The principal of and i interest on such bonds shall in each instance be payab solely from a special fund provided for the payme with revenues derived from water use fees collect from all facilities using water from the Kentucky Riv basin, except those facilities using water primarily f agricultural purposes, pledged to be set aside a deposited in such special fund. The bonds of any issu may be in one (1) or more series and any one (1) more such series may enjoy equal or subordinate stat with respect to the pledge of funds from which they a payable, shall be dated, shall bear interest, shall matu at such time or times not exceeding the thirtieth ann versary of their respective dates, all as may be provide by the authority, and may be made redeemable befo

maturity, at the option of the authority, at such price or prices and under such terms and conditions as may be fixed by the authority prior to the issuance of the bonds. The authority shall determine the form of bonds including any interest coupons to be attached thereto, and shall fix the denomination or denominations of the bonds and the place or places for payment of principal and interest, which may be at any bank or trust company within or without the Commonwealth. The bonds shall be signed by the facsimile signature of the chairman of the authority, and the seal of the authority or a facsimile thereof shall be affixed thereto and attested by the manual signature of the treasurer of the authority, and any coupons attached thereto shall bear the facsimile signature of the chairman of the authority. In case any officer whose signature or a facsimile of whose signature shall appear on any bonds or coupons shall cease to be such officer before the delivery of such bonds, such signature or such facsimile shall nevertheless be valid and sufficient for all purposes the same as if he had remained in office until such delivery. All bonds issued under the provisions of this section shall have and are hereby declared to have all qualities and incidents of negotiable instruments under the uniform commercial code of the Commonwealth. The bonds may be issued in coupon or in registered form, or both, as the authority may determine, and provision may be made for the registration of any coupon bonds as to principal alone and also as to both principal and interest, and for the reconversion into coupon bonds of any bonds registered as to both principal and interest. The authority may sell such bonds at public sale, and for such price as it may determine will best effect the purposes of KRS 151.720.

(2) The proceeds of the bonds of each issue shall be used solely for the payment of the cost of the project or projects for which such bonds shall have been issued, and shall be disbursed in such a manner and under such restrictions, if any, as the authority may provide in the proceedings authorizing the issuance of such bonds or in the trust indenture securing the same. If the proceeds of the bonds of any issue, by error of estimates or otherwise, shall be less than such cost, additional bonds may in like manner be issued to provide the amount of such deficit, and, unless otherwise provided in the proceedings authorizing the issuance of such bonds or in the trust indenture securing the same, shall be deemed to be of the same issue and shall be entitled to payment from the same fund without preference or priority of the bonds first issued. If the proceeds of the bonds of any issue shall exceed such cost, the surplus shall be deposited to the credit of the sinking fund or funds for such bonds or any account or accounts therein as the authority shall have provided in the proceedings or trust indenture authorizing and securing such bonds.

(3) Prior to the preparation of definitive bonds, the authority may, under like restrictions, issue interim receipts or temporary bonds, with or without coupons, exchangeable for definitive bonds when such bonds shall have been executed and are available for delivery. The authority may also provide for the replacement of any bonds which shall become mutilated or shall be destroyed or lost.

(4) The authority may issue revenue bond anticipation notes.

(5) Any holder of bonds issued under the provisions of this section or any of the coupons appertaining thereto, and the trustee under any trust indenture, except to the extent of the rights given in this section, may be restricted by such trust indenture or proceedings, may, either at law or in equity, by suit, action, mandamus, or other proceedings, protect and enforce any and all rights under the laws of the Commonwealth or granted under this section or under such trust indenture or the proceedings authorizing the issuance of such bonds, and may enforce and compel the performance of all duties required by this section or by such trust indenture or proceedings to be performed by the authority or by any officer or employee thereof.

(6) Revenue bonds issued under the provisions of this section shall not be a debt, liability, or obligation of the Commonwealth or any political subdivision thereof and shall not be a pledge of the faith and credit of the Commonwealth or any political subdivision thereof.

(7) Revenue bonds issued by the authority shall be subject to the jurisdiction and approval of the State Property and Buildings Commission and the Capital Projects and Bond Oversight Committee and shall be subject to review by the Office of Financial Management and Economic Analysis.

(8) The authority shall not be required to pay any taxes and assessments to the Commonwealth or any county, municipality, or other governmental subdivision of the Commonwealth upon any of its property or upon its obligations or other evidences of indebtedness pursuant to the provisions of this section, or upon any moneys, funds, revenues, or other income held or received by the authority and the bonds or notes of the authority and the income therefrom shall at all times be exempt from taxation, except for death and gift taxes and taxes of transfers.

(9) Contractual expenses to construct, reconstruct, provide for the major maintenance, or repair the Kentucky River locks and dams, or to maintain the channel, or to acquire real or personal property pertaining thereto, or to construct, reconstruct, maintain, or repair such property, shall be paid from the proceeds of the revenue bonds. Expenses for administrative services and necessary travel expenses and per diem compensation of authority members, shall not be paid from the proceeds of the revenue bonds. Nor shall the cabinet's cost of operating the locks be paid from the proceeds of the revenue bonds.

HISTORY: 1996 c 229, § 3, eff. 7-15-96
1986 c 383, § 4, eff. 7-15-86

151.990 Penalties

(1) Any person, city, county, or other governmental subdivision who violates KRS 151.100 to 151.460 shall be liable to a civil penalty of not more than $1,000 for said violation and in addition may be enjoined from continuing said violation. Each day upon which such violation occurs or continues shall constitute a separate offense.

(2) Any person who violates any determination, permit, administrative regulation, order, long-range water resource plan, or drought response plan of the Kentucky River Authority shall be liable for a civil penalty

not to exceed the sum of one hundred dollars ($100) for each day during which the violation continues, and, in addition, may be concurrently enjoined from any violations as provided in KRS 151.725.

HISTORY: 1992 c 453, § 4, eff. 7-14-92
1966 c 23, § 38

CROSS REFERENCES

Administrative service of process, computation of time and filing documents, 400 KAR 1:030

Administrative discovery procedures, 400 KAR 1:040

Administrative hearing practice, general provisions, 401 KA 100:010

Chapter 151B

CABINET FOR WORKFORCE DEVELOPMENT

Note: 1996 c 120, § 1 and 2, eff. 7-15-96, read:

Section 1. The Workforce Development Cabinet, the University Kentucky Community College System, and the public universities sh require that current and new vocational-technical-occupational educ tion and training programs of two years or less be based upon planning process that uses local employers and available occupation labor market, and educational training opportunities information assure that program offerings match employment needs within the respective labor market areas.

Section 2. The Clerk of the Senate shall send a copy of this Resol tion to the secretary of the Workforce Development Cabinet, the cha cellor of the University of Kentucky Community College System, a the presidents of Kentucky's public universities and direct them disseminate it to each Kentucky Tech postsecondary school, each co munity college, and to each public university.

Executive Order Note: 1996 c 261, § 3, eff. 7-15-96, confirme Executive Order 94-577, issued 6-29-94, which directed the establis ment of the Office of Training and Reemployment within the Cabin for Workforce Development, and its attachment to the Office of t Secretary of the Cabinet for Workforce Development, as it is essenti

TITLE 401
NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER

CHAPTER 4
WATER RESOURCES

401 KAR 4:010. Water withdrawal permits; criteria; reports.

RELATES TO: KRS 151.140, 151.160
STATUTORY AUTHORITY: KRS 151.220, 224.01.110(6)(b), 224.10-100(17)
NECESSITY AND FUNCTION: This administrative regulation is necessary to establish the requirements for permits to withdraw water and the reporting procedure to be used in conjunction with water withdrawal permits issued by the Division of Water.

Section 1. The necessity for water withdrawal permits shall be determined according to the following criteria:

(1) Where the average withdrawal rate is more than 10,000 gallons per day, a permit shall be required except as exempted by KRS 151.140.

(2) Where the withdrawal of water is made at a relatively constant rate each day and the average withdrawal rate is 10,000 gallons per day, or less, no permit shall be required.

(3) Where withdrawals are made on an irregular basis and at an irregular rate, permits may be required where the division determines that the water withdrawn represents a significant portion of the available water supply or that collection of withdrawal data is necessary for water resource planning purposes.

Section 2. (1) Reports of water withdrawn pursuant to permit shall be made as follows:

(a) Withdrawals made at a relatively constant daily rate shall be recorded monthly and reported to the division semiannually on forms supplied by the division.

(b) Where withdrawals are made on an irregular basis and at an irregular rate, the division may specify recording frequency as the circumstances require. Reporting of withdrawal information to the division shall be made semiannually. Recording and reporting shall be done on forms supplied by the division.

(c) Where necessary in the discretion of the division increased reporting or recording frequency may be required.

(2) The permittee shall complete and return the water withdrawal report forms to the division within 30 days after receiving such forms. (1 Ky.R. 11; Am. 448; eff. 2-5-75.)

401 KAR 4:020. General permit procedure exemptions.

RELATES TO: KRS Chapter 151

STATUTORY AUTHORITY: KRS 151.250(1), 224.10-100(17)

NECESSITY AND FUNCTION: This administrative regulation is necessary to exempt from the permitting requirements of KRS 151.250 those dams, embankments and other obstructions in and along streams of the Commonwealth which are not of such size or type as to require approval by the Natural Resources and Environmental Protection Cabinet in the interest of safety or retention of water supply. This administrative regulation exempts only those activities which have been approved by the United States Department of the Army pursuant to the specific criteria set forth in its General Permit procedures.

Section 1. No permit shall be required pursuant to KRS 151.250 for those activities in and along the streams of the Commonwealth of Kentucky which are approved by the United States Department of the Army in accordance with its General Permit procedures as set out in Title 33 CFR 209.120(i)(2)(ix), and as published in the Federal Register of 25 July, 1975, Volume 40, Number 144. (3 Ky.R. 767; eff. 7-6-77.)

401 KAR 4:030. Design criteria for dams and associated structures.

RELATES TO: KRS 151.250

STATUTORY AUTHORITY: KRS 151.125, 224.01-110(6)(b), 224.10-100(17)

NECESSITY AND FUNCTION: This administrative regulation is necessary to establish minimum design criteria for dams and associated structures constructed in Kentucky.

Section 1. This administrative regulation applies to all dams as defined by KRS 151.100 and to all other impounding obstructions which might create a hazard to life or property.

Section 2. Except as modified in this administrative regulation, the procedures outlined by the latest edition of "Design of Small Dams" (Second Edition, 1973), available from the U.S. Government Printing Office and the Department of Reclamation, herein filed by reference, shall be the minimum criteria.

Section 3. The Division of Water Engineering Memorandum No. 5 (2-1-75) outlined as follows: Section A. Definitions; Section B. Structure Classification; Section C. Hydrologic Criteria; Section D. Sediment Storage; Section E. Principal Spillways; Section F. Emergency Spillways; Section G. Earth Embankments; and Section H. Utilities Under Embankments; is hereby incorporated by reference and made a part of this administrative regulation as if fully set out herein. Copies are available from the Division of Water upon request.

Section 4. Structure types not generally used in Kentucky, i.e. gravity, buttress, steel, timber, etc., will be considered on an individual basis and reviewed in accord with prevailing practices that are currently accepted by the engineering profession.

Section 5. In all cases the safety of the structure, the water and/or other material impounded therein, property and human life will be the principal governing factors. Under no circumstances will the proposed use of the structure and its contents, or the cost of providing an unquestionably safe structure be allowed to assume precedence over the possible hazard involved.

Section 6. Structures which are to be repaired or reconstructed must be made to conform to the criteria established by this administrative regulation.

Section 7. Each of the following stated criteria indicates whether the limit is a maximum or minimum limit and is not to be construed as being satisfactory design criteria at all sites. Professional judgment, state laws and administrative regulations, investigations, or analysis may dictate more conservative criteria.

Section 8. (1) Approval of all plans and specifications shall be divided into two (2) distinct parts:

(a) Issuance of a construction permit pursuant to KRS 151.250 shall constitute approval of the final engineering documents to allow construction to be started; and

(b) Final written approval by the cabinet upon receipt of the "as-built" plans and specifications will constitute approval to impound.

(2) No approval to impound water and/or other material is implied or is in any way granted until the "as-built" plans and specifications have been approved, an on-site inspection has been made, and a written statement of approval issued. It is recommended that the owner and/or his engineer contact this division before initiation of final design for a predesign conference.

Section 9. All plans and specifications submitted for consideration must bear the seal and signature of the responsible engineer as defined in KRS 322.010(2), except officers and employees of the United States Government while engaged in engineering for the government. Each sheet of the drawings shall bear the seal and signature of the engineer or engineers responsible for its preparation.

Section 10. All structures, other than Class A as defined in Engineering Memorandum No. 5 (2-1-75) shall have a complete subsurface investigation and soil analysis submitted as an integral part of the drawings.

Section 11. (1) Elevation area capacity data and elevation discharge data must be submitted as a part of the plans for each structure. This elevation area capacity data shall give the area and capacities from the elevation of the lowest point in the impoundment area to at least the elevation at the top of the dam. When the configuration of the structure will not allow the elevation discharge relationship to be developed by methods accepted as standard by the engineering profession, the structure must provide the storage necessary to contain the entire storm run-off without probable damage to the structure or creating an unacceptable hazard to life or property.

(2) When this required basic information is furnished by the responsible design engineer, the Division of Water will upon request assist the engineer in preparing the flood routings required by Engineering Memorandum No. 5 (2-1-75).

(3) In the event that the elevation area capacity data is not furnished, or the flood routings show that insufficient floodwater storage has been provided, the plans will be returned to the design engineer without being approved.

Section 12. All information concerning elevations shall refer to mean sea level and the use of assumed elevations for any purpose is prohibited. Should an error in either the horizontal control or vertical control become known during construction, the necessary information to correct the distances and the elevations shall be referred to on the first sheet of the "as-built" drawing or referred to in the index. Clearly marked reference points and bench marks shall be maintained at the job site by the responsible engineer until final written approval is received.

Section 13. Unless waived in writing by the cabinet, no structure shall be approved unless a positive means is provided to pass water through the structure in sufficient quantity to satisfy the needs of downstream users and to empty the reservoir within a reasonable length of time. Conditions considered in determining downstream water requirements and required minimum time to empty the

impoundment shall be determined by the responsible engineer and referred to on the drawings.

Section 14. Construction supervision and inspection must be performed by or under the direction of the design engineer. Unless otherwise directed by the cabinet the engineer shall submit monthly progress reports on forms to be supplied by the cabinet. Copies of all testing reports shall be submitted with the progress reports.

Section 15. All "as-built" documents shall be submitted by the responsible engineer in the form of permanent type drawings of a standard and uniform size. Variations in size will be permitted for federal agencies in order that they may use their standard drawings. Drawings that do not conform to standard practices or drawings that are not easily legible will not be accepted.

Section 16. Because of the cabinet's statutory duty to review federal projects for the Commonwealth under KRS 151.220, the United States Army Corps of Engineers is exempt from the provisions of this administrative regulation and KRS 151.250. (DOW-Rg-2; 1 Ky.R. 759; eff. 6-11-75.)

401 KAR 4:040. Nonhazardous sediment structures exempted.

RELATES TO: KRS 151.250
STATUTORY AUTHORITY: KRS 151.125, 224.01-110(6)(b), 224.10-100(17)
NECESSITY AND FUNCTION: This administrative regulation is necessary to exempt certain dams, embankments, levees, dikes, bridges, fills, and other stream obstructions proposed in conjunction with surface and deep mining from the provisions of KRS Chapter 151 to avoid duplication of effort within the Natural Resources and Environmental Protection Cabinet.

Section 1. As a part of the routine processing of applications for permits for surface mining and the surface effects of deep mining, the engineering staff of the Division of Reclamation reviews all designs for dams, embankments, levees, dikes, bridges, fills, and other stream obstructions proposed in conjunction with surface or deep mining and, whereas a substantial number of such dams, embankments, levees, dikes, bridges, fills, and other stream obstructions are of such a size, type, and location as to present no potential hazard to life and/or property; this administrative regulation exempts from the provisions of KRS 151.250 all such dams, etc., as described above, except those dams which come within the hazard classification contained in Division of Water Engineering Memorandum No. 5 (2-1-75), and those obstructions as described, which, in the professional judgment of the Division of Reclamation engineering staff, present a potential hazard to life and/or property. Copies of Engineering Memorandum No. 5 (2-1-75) are available upon request from the Division of Water.

Section 2. Certified, "as-built" engineering plans for all dams which impound or divert water and/or other material and which (i) are twenty-five (25) feet or more in height or (ii) have an impounding capacity of fifty (50) acre-feet or more at the lowest point in the top of the dam must be forwarded by the Division of Reclamation to the Division of Water for inclusion in the Dam Safety Program required by KRS 151.295(c). Height is measured from the natural bed of the stream or watercourse at the downstream toe of the barrier to the low point in the top of the dam. (DOW-Rg-3; 1 Ky.R. 759; eff. 6-11-75.)

401 KAR 4:050. Construction exemptions.

RELATES TO: KRS 151.110, 151.250, 151.310
STATUTORY AUTHORITY: KRS 151.230, 151.250
NECESSITY AND FUNCTION: In the course of regulating construction in or along streams pursuant to KRS 151.250, the Natural Resources and Environmental Protection Cabinet frequently encounters actions or proposed actions which are of such nature or location as to have little potential for damage or such that any damage which would occur is limited in extent to the immediate vicinity of the action. This administrative regulation exempts construction of this type from the provisions of KRS 151.250.

Section 1. A construction permit pursuant to KRS 151.250 shall not be required for construction in or along a stream whose watershed is less than one (1) square mile, except for the construction of dams as defined by KRS 151.100 or other water impounding structures or for any construction that does or may endanger life or cause severe damage to residential or commercial property.

Section 2. A construction permit pursuant to KRS 151.250 shall not be required for a subfluvial utility or pipeline crossing provided that the construction of the crossing meets the following criteria:

(1) During the construction of the crossing, no material may be placed in the stream or in the flood plain of the stream to form construction pads, coffer dams, access roads, etc., unless prior approval has been obtained from the cabinet.

(2) The trench shall be backfilled as closely as possible to the original contour. All excess material from construction of the trench shall be disposed of outside of the flood plain unless the applicant has received prior approval from the cabinet to fill within the flood plain.

(3) For subfluvial crossings of erodible channels, there shall be at least thirty (30) inches clear to the top of the pipe or conduit at all points.

(4) For subfluvial crossings of nonerodible channels, there shall be at least six (6) inches of clear cover above the top of the pipe or conduit at all points, and the pipe or conduit shall be encased on all sides by at least six (6) inches of concrete.

(5) The weight of a pipe and its contents during normal operating conditions at all points must exceed that of an equal volume of water, or the applicant must provide the division with sufficient information to show that the pipe and joints have sufficient strength. (7 Ky.R. 365; eff. 11-6-80.)

401 KAR 4:060. Stream construction criteria.

RELATES TO: KRS 151.100, 151.110, 151.180, 151.210, 151.250, 151.260, 151.280, 151.310
STATUTORY AUTHORITY: KRS 151.125, 151.230
NECESSITY AND FUNCTION: This administrative regulation provides minimum standards necessary to ensure the wise use of the Commonwealth's flood prone areas while protecting the safety and welfare of the public and preventing both flood damages and increased flood levels. These aims are addressed through provisions which require that all development in the base floodplain is in a manner which precludes flood damages. In addition, there are provisions which ensure that flood levels are not unduly increased. The provisions of this administrative regulation will be implemented through the permitting authority in KRS 151.250.

Section 1. Definitions. Terms used in this administrative regulation shall have the meanings given them in KRS 151.100 or this section.

(1) "Backwater effect" means the rise in water surface elevation caused by obstruction of a stream's flow, such as by a narrow bridge opening, buildings or fill material that limits the area through which the stream's flow must pass.

(2) "Base flood" means the flood having a one (1) percent chance of being equaled or exceeded in any given year, also called the 100-year frequency flood.

(3) "Base floodplain" means the area along, adjacent to, and including a stream, which is inundated by the base flood on that stream.

(4) "Basement" means any area of the building having its floor below ground level on all sides.

(5) "Conveyance" means a measure of the flow-carrying capability of a stream cross section and is equal to the flow rate at a given

depth in cubic feet per second divided by the square root of the slope of the energy grade line in feet per foot.

(6) "Cross section" means a graph or plot of ground elevation across a stream valley or portion of it along a line perpendicular to the direction of stream flow.

(7) "Designated floodway" means the stream and that portion of the adjacent base floodplain specified by a local ordinance or indicated on National Flood Insurance Program maps to be kept free of obstructions to the passage of flood flows.

(8) "Energy grade line" means a representation of the total energy possessed by flowing water. The value at any point on the line can be expressed as an elevation in feet above mean sea level equal to the elevation of the water surface plus the hydraulic head. Hydraulic head is approximately equal to the quotient of the square of the average velocity over the cross section divided by twice the acceleration of gravity ($V^2/2g$).

(9) "Flood crest" means the maximum stage or elevation reached or expected to be reached by waters of a specific flood at a given location.

(10) "Flood frequency" means a statistical expression of the average time period between floods equaling or exceeding a given magnitude.

(11) "Flood proofing" means structural changes or adjustments to new or existing structures and facilities, their contents, or their sites for the purpose of reducing or eliminating flood damages by protecting against structural failure, keeping water out, or reducing the effect of water entry.

(12) "Flood warning" means the issuance and dissemination of information about an imminent or current flood.

(13) "Historic structure" means any structure that is:

(a) Listed individually in the National Register of Historic Places or preliminarily determined by the Secretary of the Interior as meeting the requirements for listing;

(b) Certified or preliminarily determined as contributing to the historical significance of a registered historic district;

(c) Listed on the state inventory of historic places; or

(d) Listed on a local inventory of historic places in communities with historic preservation programs approved by the state or the Secretary of the Interior.

(14) "Lowest floor" means the lowest floor of the lowest enclosed area, including any basement. An unfinished or flood resistant enclosure usable solely for parking of vehicles, building access, or storage of mobile equipment or of property that is not flood damageable in an area other than a basement is not considered a building's lowest floor.
considered a building's lowest floor.

(15) "Manufactured home" means a structure, transportable in one (1) or more sections, that is built on a permanent chassis and designed for use with or without a permanent foundation when connected to utilities. The term includes park trailers and similar vehicles placed on a site for greater than 180 consecutive days.

(16) "National Flood Insurance Program", or "NFIP", means a federal program which makes available flood insurance protection to property owners in flood prone areas. To qualify for the sale of this federally-subsidized flood insurance, this program requires a community to adopt and submit to the Federal Emergency Management Agency (FEMA) base floodplain management regulations which satisfy FEMA's minimum requirements designed to reduce or avoid future flood or flood related damages.

(17) "100-year flood" means a flood of a magnitude having a one (1) percent chance of occurring in any given year and which, over a very long period of time, can be expected to be equaled or exceeded on the average of once every 100 years.

(18) "Permit" means a permit for construction across, along, or adjacent to a stream subject to the provisions of KRS 151.250 but does not mean permits for the construction of dams.

(19) "Profile" means a graph or plot elevation of the water surface or channel bottom against distance along the stream.

(20) "Regulatory floodway" means the stream channel and that portion of adjacent land area that is required to pass flood flows without raising the base flood crest elevation by more than one (1) foot. In areas where three (3) or more houses or commercial or industrial buildings may be affected, backwater effect used to determine the regulatory floodway may be limited to less than one (1) foot.

(21) "Stream" means any river, creek or channel, having well-defined banks, in which water flows for substantial periods of the year to drain a given area, or any lake or other body of water in the Commonwealth.

(22) "Substantial improvement" means any combination of repairs, reconstruction, alteration, or improvements to a structure, taking place during a five (5) year period, in which the cumulative cost equals or exceeds fifty (50) percent of the market value of the structure. The market value of the structure shall be:

(a) The appraised value of the structure prior to the start of the initial repair or improvement; or

(b) If damage has occurred, the value of the structure prior to the damage. Substantial improvement is considered to occur when the first alteration of any wall, ceiling, floor, or other structural part of the building commences, whether or not that alteration affects the external dimensions of the structure. The term does not, however, include any project for improvement of a structure required to comply with existing health, sanitary, or safety code specifications which are solely necessary to assure safe living conditions.

Section 2. Applicability. This administrative regulation shall apply to all construction across, along, or adjacent to a stream (i.e., the base floodplain) or in the floodway of a stream for which a construction permit is required pursuant to KRS 151.250, except for the construction of dams as defined in KRS 151.100.

Section 3. General Provisions. (1) This administrative regulation shall constitute minimum criteria for the issuance of permits for stream construction pursuant to KRS 151.250. If the cabinet determines that additional information is pertinent or best engineering practice is required, it may apply more stringent considerations.

(2) The permittee shall provide the cabinet with written notification that construction was completed in accordance with approved plans and specifications not later than ninety (90) days after completion of construction.

(3) Any construction limits specified in the permit shall be plainly staked or otherwise marked on the site.

(4) Public notification.

(a) As part of the stream construction permit issuance procedure, each applicant shall provide notice to all parties who might incur additional flood-related damages as a result of the construction that a permit has been requested, except as provided in subparagraph 3 of this paragraph.

1. For those projects that the cabinet determines may have flooding impacts beyond the local area of the construction, the applicant shall publish a notice in the newspaper having greatest circulation in the area of the proposed construction. This notice shall provide:

a. The name of the applicant;

b. The location, nature, and extent of the proposed construction; and

c. The address and telephone number of the Division of Water and stating the comments and objections shall be directed to the division. The notice shall be run for period of three (3) consecutive days or printings of the newspaper; however, for weekly newspapers the cabinet may reduce this requirement to two (2) consecutive printings upon written request of the applicant.

2. Where the cabinet determines that flood impacts will be localized, the applicant may obtain and submit affidavits from all parties who reside, own property, or have other legitimate property interests in the affected areas. This affidavit will contain a complete description of the proposed construction, a place for concerned parties to sign indicating that they have read the statement and that they understand that a permit application is being submitted to the cabinet, and the name and address of the cabinet representative to whom statements of concern or request for hearing may be addressed.

3. For construction projects that the cabinet determines will have negligible flood impacts (e.g. placement of electrical utility power poles or transmission towers where no fill is included or minor streambank restoration), the cabinet may waive the public notification requirement after receipt of a written request from the applicant to do so.

4. The cabinet will notify all persons filing comments or objections to the issuance of any permit of their right to be heard pursuant to the provisions of KRS 151.182(2).

(b) Proof that the notice was published or the original of the completed affidavit, as applicable, shall be provided to the cabinet before the application will be considered complete; however, technical review of the application by the cabinet may proceed before proof is provided. Issuance of the permit shall not proceed until sufficient proof of notice is submitted.

(c) The public notice required in paragraph (a)1 of this subsection shall be at least three (3) column inches in size, and shall be large enough that all of the information required in paragraph (a)1 of this subsection is easily readable.

(d) If the cabinet determines any of the conditions of paragraph (a) of this subsection are not met by the initial notice or affidavit, it may require that the applicant place another notice or provide another affidavit which does so. The application will not be considered complete until the applicable public notification provisions of this subsection are satisfied.

Section 4. Uses of Regulatory Floodway. (1) Except as provided below, no fill, deposit, obstruction, excavation, storage of materials, or structure, either alone or in combination with existing or future similar works, which may adversely affect the efficiency or the capacity of the regulatory floodway, existing streams, or drainage facilities shall be placed in the regulatory floodway. The determination of adverse effects shall be based on the assumption that all allowable encroachment will occur above and below the project site and on both sides of the stream and shall be made in the manner described in Section 5 of this administrative regulation. Structures that are:

(a) Designed for human habitation;

(b) Associated with high flood damage potential;

(c) Not connected with permitted open space uses; or

(d) Structures consistent with open space uses, but that could themselves obstruct flood flows, shall not be located in the regulatory floodways. No person shall store materials that are buoyant, flammable, explosive, or injurious to human, animal or plant life within regulatory floodway limits.

(2) The following activities or structures are allowed for land within the regulatory floodway limits of a stream if they are not of such nature as to result in increases in flood elevations:

(a) Open space uses having no appreciable flood damage potential such as those associated with agriculture, silviculture, recreation, parking, storage yards, and certain sand and gravel operation;

(b) Certain structures that are related to allowable open space uses if the structures are designed, constructed and placed on the lot so as to offer the minimum obstruction to flood flows;

(c) Structures necessary for navigation and waterborne freight handling, for transportation or utility crossings, if the cabinet determines that every effort has been made to reduce the impact of all such facilities on flooding and if the facilities considered alone or in conjunction with permissible development above and below it and on the opposite side of the stream do not create an increase in flood elevations in excess of that which is appropriate for determination of the floodway boundaries at that site as discussed in Section 5 of this administrative regulation;

(d) Dredging or other removal of material from between the stream banks, if disposal of the dredged material is outside of the regulatory floodway; and

(e) Other activities exempted by 401 KAR 4:020 and 4:050.

Section 5. Determining Regulatory Floodway Boundaries. (1) The regulatory floodway boundaries shall include the stream channel and that portion of the adjacent land areas required to pass the base flood discharge without increasing the water surface elevation at any point more than one (1) foot. Where the stream flow is supercritical, or where velocity is so high that backwater considerations are not possible or appropriate, the determination of regulatory floodway boundaries shall be based on a one (1) foot maximum allowable rise in the energy grade line. When making these calculations, the cabinet will use methods which consider equal conveyance losses on opposite sides of the stream.

(2) For stream segments for which a local government has used methods comparable to those specified in this section to define floodway boundaries and has adopted these boundaries by ordinance or for which the Federal Emergency Management Agency (FEMA) has determined and mapped floodway boundaries, the cabinet will consider these designated floodway boundaries to define the regulatory floodway. If both locally-determined floodway boundaries and FEMA maps are available, the more stringent shall apply for purposes of this administrative regulation.

(3) Notwithstanding any other provisions of this administrative regulation, in areas where three (3) or more houses or commercial or industrial buildings may be affected by flooding or at other locations where, on a case-by-case basis, the cabinet determines that the one (1) foot increase in base flood elevation allowable in determining regulatory floodway boundaries would create an undue increase in flood damages, the cabinet may impose a more stringent limitation on the floodway determination.

(4) Base flood flow information shall be determined by one (1) of the following methods, which are listed in descending order of preference:

(a) The base flood flow frequency curve for gauged sites on unregulated streams shall be obtained from the district office of the U.S. Geological Survey, Water Resources Division or the appropriate U.S. Army Corps of Engineers district office. These data shall be applied so as to provide the best discharge estimates for the site under consideration. Peak discharges for ungauged sites on a gauged stream may consider both the gauged site information and information from an appropriate regional estimate, where available. The transfer technique for establishing discharges at the ungauged location shall be by interpolation or extrapolation methods in keeping with best engineering practices. For gauged streams with regulated flows, peak discharges shall be obtained from the agency responsible for the regulation.

(b) For ungauged streams one (1) of the following shall be used:

1. Where the watershed area is greater than ten (10) square miles, the source of information shall be "Techniques for Estimating Magnitude, Frequency, and Duration of Flows in Kentucky," U.S. Army Corps of Engineers, Incorporated by reference in 401 KAR 4:200;

2. Where the watershed area is greater than three (3) square miles but less than 100 square miles, base flood flow shall be based on the U.S. Soil Conservation Service's "National Engineering Handbook, Section 4: Hydrology," incorporated by reference in 401 KAR 4:200; or

3. Where drainage areas are less than ten (10) square miles, the cabinet may approve the use of other generally accepted methods in keeping with best engineering practices.

(5) In performing the calculations for regulatory floodway boundaries, the cabinet will use standard engineering practices.

(a) The applicant shall provide cross sections for determining floodway boundaries at any proposed construction site where FEMA maps are not available. All cross sections shall be referenced to mean sea level and shall have vertical error tolerances of no more than ± five-tenths (0.5) foot. Cross sections elevations shall be taken at those points which represent significant breaks in slope and at points where hydraulic characteristics of the base floodplain change. Each cross section shall extend across the entire base floodplain and shall be in the number and at the locations specified by the cabinet. If necessary to ensure that significant flood damage will not occur, the cabinet may require additional cross sections or specific site elevations which extend beyond those needed for making routine regulatory floodway boundary calculations.

(b) Roughness values for use in regulatory floodway computations

shall be calibrated from existing flood information, where possible. If the information is not available, the cabinet shall base these values on the professional judgment of the cabinet's staff in keeping with best engineering practices. The cabinet may require the applicant to provide photographs or other information which may be helpful in making this determination.

(c) Slope values used for regulatory floodway boundary calculations shall be based on flood profiles where available.

(d) Conveyance loss shall be calculated through an equal loss method.

Section 6. Placement of Flood-damageable Property in Floodplain. (1) To minimize or prevent the harmful effects of stream flooding, the cabinet shall not issue permits for the placement or construction of flood-damageable property in the base floodplains of streams, unless the placement or construction conforms to the requirements of the following subsection.

(2) In issuing construction permits pursuant to KRS 151.250 for the placement of flood-damageable property within the base flood inundation area the cabinet shall require the following:

(a) All new construction and substantial improvements of residential structures within the base floodplain shall have the lowest floor (including basement) elevated to at least the base flood level or to higher level if the local government has a more stringent requirement, unless granted an exception by the cabinet for the allowance of basements or storm cellars which shall be properly flood proofed;

(b) All new construction and substantial improvements of nonresidential structures within the base floodplain shall meet the following conditions:

1. The lowest floor (including basement) shall be elevated to the base flood level or above; or

2. Together with attendant utility and sanitary facilities, shall be designed so that below the base flood level the structure is properly flood proofed with walls substantially impermeable to the passage of water and with structural components having the capability of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;

(c) The floor elevation or the flood proofing certification shall be provided by the permittee after the lowest floor is completed. Upon placement of the lowest floor, or flood proofing by whatever construction means, the permit holder or owners shall submit to the Division of Water a certification of the elevation of the lowest floor or flood proofed elevation, whichever is applicable, as built, in relation to mean sea level. The certification shall be prepared by or under the direct supervision of a registered land surveyor or professional engineer and certified by same. If flood proofing is used for a particular building, the certification shall be prepared by or under the direct supervision of a professional engineer and certified by same. Any work undertaken prior to submission of the certification shall be at the permit holder's or owner's risk. The Division of Water shall review the floor elevation survey data submitted. Deficiencies detected by the cabinet's review shall be corrected by the permit holder or owner immediately and prior to further progressive work being performed. Failure to submit the survey or failure to make said corrections required hereby, shall be cause to issue a stop-work order for the project; and

(d) All manufactured homes, except in an existing manufactured home park or subdivision, shall be elevated to the base flood elevation and properly anchored to resist flotation, collapse, or lateral movement. If placed in an existing manufactured home park or subdivision the home shall be elevated no less than three (3) feet above grade, and properly anchored. Any manufactured home in an existing manufactured home park that has incurred damage equal to or exceeding fifty (50) percent of its predamaged market value as a result of a flood shall be elevated to the base flood elevation and properly anchored. The expansion of an existing manufactured home park or subdivision constitutes new construction and placement in that newly developed area shall conform to both base flood elevation and anchoring requirements.

Section 7. Construction Materials. To avoid secondary adverse impacts from stream construction projects, all materials used in projects shall be stable and inert, shall be free from pollutants and floatable objects, and shall meet all appropriate engineering standards applicable to the construction project.

Section 8. Variances and Exceptions. (1) Encroachments which cause a backwater effect of more than one (1) foot may be allowed by the cabinet if the applicant owns the entire affected property on both sides of the stream, the amount of backwater at the nearest upstream property line is no more than considerations in Section 5 of this administrative regulation would allow, and the cabinet has reasonable assurances that none of the applicant's property within the area of the excessive backwater will be subdivided and sold. Reasonable assurances shall include zoning considerations that would preclude subdivision of the property or deed restrictions or easements that create such a binding condition. All structures built in these areas shall have their lowest floor elevation at or above the altered elevation or be flood proofed to that elevation.

(2) The cabinet may allow regulatory floodway boundaries to be shifted by changing allocation of conveyance losses. In doing this, the cabinet may redesignate the regulatory floodway boundary on one (1) side of a stream to be closer to the stream channel if a permanent flooding easement is provided for a compensating area on the opposite side. This easement shall include that area extending from the top of the opposite stream bank to whatever distance away from the stream that is required to compensate for the proposed streamward shift of the floodway boundary. The easement shall specify the Commonwealth as owner of the easement rights and shall prohibit the placement of any obstruction on the property. The easement shall be filed of record in the county where the county is located and the grantor shall provide proof to the cabinet that the easement has been recorded. In addition, the cabinet may impose any other conditions it determines to be necessary to offset potential adverse flooding impacts. If regulatory floodway boundary changes are approved by the cabinet, the applicant shall be responsible for having changes made to the appropriate FEMA boundary maps.

(3) Areas along streams may be incorrectly indicated as being within the designated floodway on FEMA maps. If an error is suspected, an applicant may request the cabinet to perform an independent analysis of the situation. The applicant shall be responsible for obtaining all site-specific information for the analysis including, if necessary, the information used for the initial FEMA study. The cabinet will perform the analysis and, if the mapped information is indeed incorrect, it will assist the local community, as resources allow, in getting the maps revised. The cabinet's permit will reflect the boundaries determined by the corrected analysis.

(4) Exceptions to Section 6 of this administrative regulation may be allowed for the reconstruction, rehabilitation, or restoration of historic structures upon the cabinet's determination that the proposed repair, rehabilitation, or restoration will not preclude the structure's continued designation as a historic structure and that the exception is the minimum necessary to preserve historic character and design of the structure.

(5) Exceptions may be allowed for the requirement of a hydraulic or hydrologic study for the replacement or reconstruction of county or city bridges, if it is demonstrated to the satisfaction of the cabinet that:

(a) The existing bridge causes no significant obstruction or flood damage;

(b) The new bridge, as designed, will be capable of passing as much or more flow at the base flood level; and

(c) There are no significant changes in the elevation and grades of the existing approaches and roadway which may be within the base floodplain. (14 Ky.R. 316; Am. 556; eff. 10-2-87; 20 Ky.R. 3005; eff. 7-7-94.)

401 KAR 4:100. Wild rivers boundaries.

RELATES TO: KRS 146.241, 146.250

STATUTORY AUTHORITY: KRS 146.270, 224.01-110, 224.10-100

NECESSITY AND FUNCTION: KRS 146.250 directs the Secre-

tary to determine generally the boundaries of the Wild Rivers designated in KRS 146.240. The boundaries must include at least the visual horizon of the stream but not extend more than 2,000 feet from the center of the stream. The statute further requires that the Secretary designate access points at the upper and lower boundaries of each stream. This administrative regulation incorporates by reference maps adopted and filed with the regulation delineating the general boundaries of each stream area and specifies the access points to each area. The maps are incorporated by reference as they are too large and cumbersome for reproduction. Copies of the maps are available by request from the Division of Water, Natural Resources and Environmental Protection Cabinet, Fort Boone Plaza, 18 Reilly Road, Frankfort, Kentucky 40601.

Section 1. The boundaries of the stream area of the Cumberland River are as delineated on the map captioned "Designated Wild River Area, Cumberland River," which map is hereby adopted and incorporated herein by reference. The upper access point is the area where Ky. 204 approaches the Cumberland River below Summer Shoals and the lower access point is at Cumberland Falls State Park.

Section 2. The boundaries of the stream area of the Red River are as delineated on the map captioned "Designated Wild River Area, Red River," which map is hereby adopted and incorporated herein by reference. The upper access point is the area where Ky. 746 crosses the Red River and the lower access point is the area where Ky. 715 crosses the river.

Section 3. The boundaries of the stream area of the Rockcastle River are as delineated on the map captioned "Designated Wild River Area, Rockcastle River," which map is hereby adopted and incorporated herein by reference. The upper access point is the area where Ky. 80 crosses the Rockcastle River and the lower access point is the area where Ky. 192 crosses the river.

Section 4. The boundaries of the stream area of the Green River are as delineated on the map captioned "Designated Wild River Area, Green River," which map is hereby adopted and incorporated herein by reference. The upper access point is the area where Dennison Ferry Road meets the Green River and the lower access point is the area of Lock No. 6 on the Green River.

Section 5. The boundaries of the stream area of the Big South Fork of the Cumberland River are as delineated on the map captioned, "Designated Wild River Area, Big South Fork, Cumberland River," which map is hereby adopted and incorporated herein by reference. The upper access point is the area where Difficulty Creek joins the Big South Fork and the lower access point is the area where the Blue Heron Road ends.

Section 6. The boundaries of the stream area of Martins Fork of the Cumberland River are as delineated on the map captioned "Designated Wild River Area, Martins Fork, Cumberland River," which map is hereby adopted and incorporated herein by reference. The upper access point is the area where Martins Fork flows from the Cumberland Gap National Historical Park and the lower access point is the area where Ky. 987 crosses the mouth of Laurel Branch Creek.

Section 7. The boundaries of the stream area of Rock Creek are as delineated on the map captioned "Designated Wild River Area, Rock Creek," which map is hereby adopted and incorporated herein by reference. The upper access point is the area where the Rock Creek Bell Farm Road crosses Big Branch. The lower access point is at the White Oak Junction Bridge.

Section 8. The boundaries of the Little South Fork of the Cumberland River are as delineated on the map captioned "Designated Wild River Area, Little South Fork, Cumberland River," which map is hereby adopted and incorporated herein by reference. The upper access point is the area where the East Coopersville Road fords the Little South Fork and the lower access point is the area where the Lower Morrow Hollow Road crosses the Little South Fork.

Section 9. The boundaries of the stream area of Bad Branch are as delineated on the map captioned "Designated Wild River, Bad Branch," which map is hereby adopted and incorporated herein by reference. The upper access point is the headwaters on Pine Mountain and the lower access point is the area where Ky. 932 crosses Bad Branch. (Recodified from 400 KAR 1:010, 6-25-85; Am. 15 Ky.R. 281; 991; eff. 10-26-88.)

401 KAR 4:110. Definitions for 401 KAR 4:120 to 4:140.

RELATES TO: KRS 146.220, 146.241, 146.250, 146.260, 146.270, 146.290, 146.310, 146.350, 146.360

STATUTORY AUTHORITY: KRS 146.270, 224.01-110, 224.10-100

NECESSITY AND FUNCTION: KRS 146.270 authorizes the secretary to adopt rules and administrative regulations necessary for the preservation and enhancement of wild rivers as set forth in KRS 146.250, and for control of recreational, educational, scientific and other uses of these areas in a manner that shall not impair them. Emphasis shall be given to protecting aesthetic, scenic, ecological, historic, archaeological and scientific features of the areas. This administrative regulation defines certain essential terms used in the wild rivers administrative regulations, 401 KAR 4:120 to 4:140, which are not clearly defined by their context. Terms not defined below have the meaning given to them in relevant statutes or, if not defined in statutes, the meaning attributed by common use.

Section 1. (1) "Access road" means that access constructed or improved to connect a permitted use within a wild river corridor to a public road system.

(2) "Acid-forming substance" means an earth substance that contains sulfide minerals or other materials which, if exposed to air, water, or weathering processes, forms acids that may create acid water.

(3) "Acid water" means drainage with a pH of less than six (6.0) in which total acidity exceeds total alkalinity.

(4) "Adverse impact" means having a damaging, degrading or destructive effect on a resource.

(5) "Agricultural use" means the use of land for agricultural purposes including, but not limited to farming, dairying, pasturage, apiaries, horticulture, floriculture, viticulture, and animal and poultry husbandry.

(6) "Applicant" means the landowner who applies for a change of use permit to allow a change of land use within a wild river corridor.

(7) "Best management practices" means methods, measures or practices to prevent or reduce water pollution, including, but not limited to, structural and nonstructural controls, and operation and maintenance procedures which may be applied before, during or after pollution-producing activities to reduce or eliminate the introduction of pollutants into waterbodies.

(8) "Buffer zone" means an area of natural vegetation having a minimum width of not less than 100 feet, which is retained along each bank of a wild river to maintain aesthetics, bank stability, appropriate water temperatures, fish and wildlife habitat, and stream hydraulics, and to filter debris and waterborne pollutants from surface run-off.

(9) "Cabinet" means the Natural Resources and Environmental Protection Cabinet.

(10) "Change of use permit" means a permit issued to a landowner by the secretary to authorize a change of land use within a wild river corridor.

(11) "Commercial service" means the use of a wild river corridor for monetary profit, including, but not limited to, concessions, boat rentals, shuttle services, guided trips or tours, commercial boat docks, wharves and other recreational facilities.

(12) "Conforming land use" means a land or resource use which conforms to the provisions and intent of the Kentucky Wild River Act and the management plan developed pursuant to KRS 146.270 for a given wild river corridor.

(13) "Cultural character" means the condition, composition, and/or appearance of an archaeological or historical feature which contributes to its outstanding, unique or otherwise significant value.

(14) "Disturbed area" means an area having a manmade surface disturbance.

(15) "Division" means the Division of Water.

(16) "Existing use" means a land use which is in existence at the time a wild river is designated by the Kentucky General Assembly.

(17) "Flood plain" means the area in a watershed that is subject to flooding at least one (1) time in every 100 years.

(18) "Kentucky Wild Rivers Act" means KRS 146.200 to 146.360, as amended.

(19) "Landowner" means the owner of a property or an interest in a property conveyed by lease or other legal conveyance.

(20) "Land use plan" means a plan of action submitted to the cabinet as part of a change of use permit application.

(21) "Log landing" means a collecting point for holding cut timber.

(22) "Management plan" means the individual plan adopted by the cabinet pursuant to KRS 146.270 as the official document guiding the management and protection of a given wild river corridor.

(23) "Natural character" means the condition or appearance of an area or resources which may be expected to exist in nature undisturbed by human actions.

(24) "Natural vegetation" means the species, or combinations of species, of plants which exist, or may be expected to exist, in nature undisturbed by human actions.

(25) "New land use" means a land use within a wild river corridor which is not in existence at the time a given wild river corridor is designated by the Kentucky General Assembly.

(26) "Operator" means the person, partnership, contractor, subcontractor, company or corporation responsible for the construction, maintenance, operation and reclamation of a permitted use.

(27) "Permitted use" means a nonconforming land use within a wild river corridor which has been authorized by the secretary through the issuance of a change of use permit.

(28) "Permittee" means a landowner who has obtained a change of use permit from the cabinet.

(29) "Produced water" means water and pollutants and combination thereof resulting, obtained or produced from the exploration, drilling or production of oil or gas.

(30) "Professional forester" means a person holding a degree in forestry from a school with an accredited forestry program.

(31) "Research plan" means a plan of action submitted to the cabinet for approval prior to initiating a scientific study within a given wild river corridor.

(32) "Resource removal" means exploration for, extraction or removal of a natural resource including, but not limited to, coal, oil and gas, minerals, rock, gravel, sand and soil.

(33) "Secretary" means the Secretary of the Natural Resources and Environmental Protection Cabinet.

(34) "Selective cutting (of timber)" means the selective removal during one (1) entry of single trees from an area such that a specified minimum residual stocking level is retained and evenly distributed over the harvest area. The purpose of the cut is to create or maintain an uneven-aged stand of timber.

(35) "Significant feature" means an outstanding, unique, rare or otherwise significant aesthetic, scenic, botanical, zoological, geological, historical, archaeological, scientific or recreational feature which is identified in the management plan or by the management agency as occurring within a given wild river corridor.

(36) "Skid" means to transport logs by sliding or dragging along the ground.

(37) "Skid trail" means a trail developed for the purpose of skidding logs from the stump to a log landing area.

(38) "Slash" means the residue left after the economically usable portion of cut trees is removed from a harvest area.

(39) "Structure" means an aboveground object constructed, built or installed for a change of use, and shall exclude sediment ponds, roads and signs.

(40) "Surface disturbance" means any disturbance of the ground surface which involves the clearing of vegetation or excavation of soil, rock or other materials occurring on or near the ground surface.

(41) "Surface mining" means the breaking of the surface soil in order to facilitate or accomplish the extraction or removal of minerals, ores, or other solid matter; any activity or process constituting all or part of a process for the extraction or removal of minerals, ores, or other solid matter so as to make them suitable for commercial, industrial, construction, or other use; but shall not include those aspects of deep mining not having significant effect on the surface, and shall not include excavation or grading when conducted solely in aid of on-site farming or construction.

(42) "Toxin-forming substance" means earth materials or wastes which, if exposed to air, water, weathering, or microbiological processes, are likely to produce conditions that are detrimental to biota or uses of water.

(43) "Underground mining" means those aspects of deep mining, including surface effects, involving any open pit or any underground workings from which minerals, ores or other solid matter is removed for sale, exchange, commercial, or other use, and all shafts, drifts, or inclines leading thereto, including all buildings and equipment, above or below the surface of the ground, used in connection with such workings.

(44) "Visual intrusion" means resulting in the disruption, degradation or impairment of the natural or primitive appearance of an area in a wild river corridor, as viewed from the river or other designated public use area, and includes any land use that does not remain visually subordinate to the characteristic landscape.

(45) "Watershed" means that area enclosed by a topographic divide from which direct surface run-off from precipitation normally drains by gravity into the stream above a specified point.

(46) "Wild river" or "wild river corridor" means a stream segment and adjacent shoreland within boundaries set forth in 401 KAR 4:100 which are designated in accordance with KRS 146.241.

(47) "Wild rivers system" means the collective wild rivers as designated in KRS 146.241 and amendments. (15 Ky.R. 693; Am. 991; eff. 10-26-88.)

401 KAR 4:125. Wild rivers administration.

RELATES TO: KRS 146.220, 146.270, 146.290, 146.310, 146.350, 224.01-110, 224.10-440, 224.10-470, 224.10-240

STATUTORY AUTHORITY: KRS 146.270, 224.01-110, 224.10-100

NECESSITY AND FUNCTION: KRS 146.270 authorizes the secretary to adopt rules and administrative regulations necessary for the preservation and enhancement of wild rivers as set forth in KRS 146.250, and for control of recreational, educational, scientific and other uses of these areas in a manner that shall not impair them. KRS 146.220 places emphasis on protecting the aesthetic, scenic, historical, archaeological, ecological and scientific features of these areas. This administrative regulation sets forth guidelines for the administration, management and public use of wild river corridors, including criteria for delineating existing, conforming, permitted and prohibited land uses and conditions of authorization for utility right-of-way construction. This administrative regulation shall apply to all lands and waters under state jurisdiction which are located within designated wild river boundaries as set forth in 401 KAR 4:100. Nothing herein shall be construed as superseding any requirements of other cabinet programs or of other state or federal agencies. This administrative regulation contains the substance of and repeals 401 KAR 4:120.

Section 1. Definitions. As used in this chapter, unless context otherwise requires:

(1) "Agricultural use" means the use of land for agricultural purposes including, but not limited to farming, dairying, pasturage, apiaries, horticulture, floriculture, viticulture, and animal and poultry husbandry; provided that fruit, vegetable and flower production for personal consumption shall not be deemed an agricultural use.

(2) "Buffer zone" means an area of woodland having a minimum width of not less than 100 feet which is retained along each bank of

a wild river to maintain aesthetics, bank stability, appropriate water temperatures, fish and wildlife habitat, and stream hydraulics, and to filter debris and waterborne pollutants from surface run-off.

(3) "Cabinet" means the Natural Resources and Environmental Protection Cabinet.

(4) "Change of use permit" means a permit issued to a landowner by the secretary to authorize a change of land use within a wild river corridor.

(5) "Commercial service" means the use of a wild river corridor for monetary profit, including, but not limited to, concessions, boat rentals, shuttle services, guided trips or tours, commercial boat docks, wharves and other recreational facilities.

(6) "Conforming use" means a land or resource use which conforms to the provisions and intent of the Kentucky Wild Rivers Act and the management plan developed pursuant to KRS 146.270 for a given wild river corridor.

(7) "Existing use" means a land use which is in existence at the time a wild river is designated by the Kentucky General Assembly.

(8) "Floodplain" means the area in a watershed that is subject to flooding at least one (1) time in every 100 years.

(9) "Management plan" means the individual plan adopted by the cabinet pursuant to KRS 146.270 as the official document guiding the management and protection of a given wild river corridor.

(10) "Permitted use" means a nonconforming land use within a wild river corridor which has been authorized by the secretary through the issuance of a change of use permit.

(11) "Research plan" means a plan of action submitted to the cabinet for approval prior to initiating a scientific study within a given wild river corridor.

(12) "Resource removal" means exploration for, extraction or removal of a natural resource including, but not limited to, coal, oil and gas, minerals, rock, gravel, sand and soil.

(13) "Secretary" means the Secretary of the Natural Resources and Environmental Protection Cabinet.

(14) "Selective cutting (of timber)" means the selective removal during one entry of trees from an area such that a specified minimum residual stocking level is retained and evenly distributed over the harvest area. A selective cut creates or maintains an uneven-aged stand of timber.

(15) "Structure" means an aboveground object constructed, built or installed for a change of use, and shall exclude sediment ponds, roads and signs.

(16) "Visual intrusion" means resulting in the disruption, degradation or impairment of the natural or primitive appearance of an area in a wild river corridor, as viewed from the river or other designated public use area, and includes any land use that does not remain visually subordinate to the characteristic landscape.

(17) "Wild river" or "wild river corridor" means a stream segment and adjacent shoreland within boundaries set forth in 401 KAR 4:100 which are designated in accordance with KRS 146.241.

Section 2. General Policy. (1) Wild rivers shall be managed to preserve their free-flowing condition and to protect the outstanding and unique aesthetic, scenic, recreational, fish and wildlife, botanical, historical, archaeological and other natural and cultural features which qualified the streams for designation as wild rivers.

(2) Additional management objectives shall be to afford opportunities to enjoy natural streams and to preserve for future generations the beauty of certain areas untrammeled by man. The cabinet will not encourage public use of areas where it has been determined that the carrying capacity for one (1) or more uses has been reached or exceeded.

Section 3. Management Plans. (1) The management of a given wild river corridor shall be according to a management plan developed by the cabinet.

(2) The cabinet shall consult with landowners in the affected wild river corridor, citizen groups, industries and appropriate local, state and federal agencies in the preparation of each management plan.

(3) Public participation in the development of a management plan shall be provisioned by at last one (1) public hearing on the draft management plan followed by a thirty (30) day comment period prior to finalizing the plan.

(4)(a) The hearing, or hearings, shall be conducted in one (1) of the counties through which the designated portion of the river flows;

(b) Notice of hearing shall be given in accordance with the provisions of KRS Chapter 424. The notice shall:

1. State the time, place and purpose of the hearing;

2. State the name and address of the person from whom a copy of the proposed management plan may be attained;

3. Be published not less than seven (7) nor more than twenty-one (21) days prior to the hearing;

4. Be published in the county, or counties, through which the designated portion of the river flows, and in at least one (1) major newspaper; and

5. Sot forth the address to which written comments on the draft management plan may be submitted,and the date by which those written comments shall be submitted.

(c) The hearing shall be conducted by a designated representative of the cabinet who shall control the order of presentation;

(d) Any interested person may appear at the hearing and make an oral or written presentation concerning the draft management plan. All oral presentations shall be recorded; and

(e) All written and oral comments shall be considered in the development of the management plan.

(5) Responsibility for the administration and management of a wild river shall be clearly delineated in the management plan for that river, and any management agreements between the cabinet and local, state or federal agencies having overlapping jurisdiction over lands or waters within the wild river corridor shall be incorporated into the plan.

Section 4. Existing or Conforming Land Uses. (1) Under the provisions of KRS 146.290, land uses which are lawfully existing at the time the boundaries of a wild river are designated may continue even though the use does not conform to the purpose and intent of the Kentucky Wild Rivers Act or the management plan for a given wild river.

(2) Other than existing uses, land uses within wild river corridors which conform to the purposes and intent of the Kentucky Wild Rivers Act and the duly adopted management plan for each wild river shall not require a change of use permit.

(3) Conforming uses shall include wilderness type recreation such as nonmechanized boating, hiking, hunting, fishing, camping, sightseeing and horseback riding, as well as scientific research, environmental education and related activities which preserve the primitive character and natural and cultural resources of the area.

(4) Other land uses shall qualify as conforming uses if they do not involve the clearing of more than one-half (1/2) acre of timber, nor constitute a significant visual intrusion within 100 feet of the river. Conforming uses may include the following:

(a) The routine maintenance, repair, renovation or replacement of existing roads, buildings or other structures or improvements to an existing use;

(b) The selective cutting of firewood or individual trees by a landowner for personal or family use;

(c) Landscaping and gardening, including flower, fruit and vegetable production;

(d) Fencing;

(e) The removal of noxious weeds from an area using direct application but not aerial spraying, and herbicides that are short-term, nontoxic to fish and wildlife and will not leach into surface waters or groundwater; and

(f) The clearing of diseased or insect- infested trees from an area greater than one-half (1/2) acre upon written authorization from the cabinet based on the recommendation of a professional forester.

Section 5. Permitted Land Uses. (1) Land use changes authorized by the cabinet through a change of use permit as required under KRS 146.290, shall comply with all applicable standards set forth in 401 KAR 4:140;

(2) Land use changes which require a change of use permit shall

include:

(a) A resource removal, by methods other than surface mining;

(b) The selective cutting of timber as defined in Section 1 of this administrative regulation; and

(c) A new agricultural use that requires clearing of timber from an area greater than one-half (1/2) acre or more in extent.

Section 6. Prohibited Land Uses. (1) Pursuant to KRS 146.290, surface mining, timber harvest by methods other than selective cutting and in-stream disturbances are prohibited within a wild river corridor;

(2) Prohibited in-stream disturbances shall include but not be limited to, dam construction, dredging, spoil or fill deposition, channel diversion, channelization and mining of streambed materials; and

(3) The construction of roads, buildings or other structures to effect any use other than an existing or permitted land use, as set forth in Section 4 or Section 5 of this administrative regulation, is prohibited.

Section 7. Public Use. (1) Public use of wild river corridors shall be limited to the public waters and public lands or interests in lands acquired through lease, easement or other agreement entered into by the landowner. Public use of private property shall require permission from the landowner. Trespassing is subject to penalty as set forth in KRS 146.990. This section applies to the public use of state-owned lands and public waters within wild river corridors.

(2) The cabinet will make every effort to inform the public that the wild river designation does not authorize public use of privately-owned lands, and will prepare maps delineating the boundaries of public lands within wild river corridors to reduce unintentional trespassing.

(3) In accordance with KRS 146.290, transportation shall be by foot, canoe, kayak, boat, with or without electric motor, horseback or other nonmechanized means except on existing public roads, as required for administrative and resource protection purposes, or as necessary to effect an existing or permitted land use.

(4) The cabinet may condition or deny public access to a wild river if such use is causing substantial adverse impact on the scenic, aesthetic, natural, cultural, scientific or recreational resources, if private property is being damaged, or if user safety is being jeopardized.

(5) Cultural artifacts, relics, fossils and souvenirs shall not be removed from their site of discovery in a wild river corridor. Deliberate damage to plants, animals, artifacts or other special features is prohibited. A written request shall be submitted to and approved by the division prior to the collection of any natural or cultural materials.

(6) Burying, dumping or depositing litter, soil, garbage, waste, scrap or other unsightly or offensive materials other than in receptacles provided for this purpose is prohibited.

(7) Horseback riding shall be allowed only on trails specifically designated for this use.

(8) Overnight camping and campfires shall be prohibited within thirty (30) feet of a wild river. No open fire shall be left unattended, and all fires shall be completely extinguished after use. Live vegetation shall not be cut for firewood.

(9) Camping within a state park shall be in accordance with 304 KAR 1:040.

(10) Hunting, fishing and trapping shall be subject to state and federal fish and wildlife laws and regulations, and shall comply with the following conditions:

(a) The construction of permanent shelters, lean-tos or other buildings is prohibited. Temporary blinds, stands or other structures shall be erected in a manner that will prevent injury to trees; and

(b) Trapping is prohibited within fifty (50) feet of designated boat access sites, boat portage trails and other designated public hiking trails, picnic areas and campgrounds.

(11) Carrying or discharging a firearm, bow and arrow or explosive substances shall be prohibited for any purpose other than hunting in accordance with state wildlife laws and the other provisions of this administrative regulation.

(12) Swimming and other in-stream recreational uses of a wild river shall be in accordance with Division of Water Patrol safety standards (402 KAR 4:080 and 4:130). Entering a wild river from the shores of a state park for swimming, bathing or other in-stream recreational use shall be allowed only in areas designated as swimming areas by the Department of Parks.

(13) Conduct which disturbs the peace or causes property damage within a corridor is prohibited.

(14) Public users of wild rivers are encouraged to leave in passing no mark upon the land that might diminish its value to another, and to make every effort to protect and enhance the unspoiled beauty of these areas as components of Kentucky's unique heritage.

Section 8. Enhancement of Recreational Opportunities. (1) The development of public access to a wild river will be compatible with the purposes and intent of KRS 146.200 to 146.360 and the duly adopted management plan for a given river, and shall conform to the natural character of the area.

(2) Development of public access may be used to enhance dispersed, nonmechanized recreational opportunities and provide information on safety, orientation, rules and administrative regulations and interpretation of special features in the area.

(3) Trails constructed within a wild river corridor will be designed and maintained to provide for nonmechanized recreational uses and to prevent soil erosion and compaction, trampling of vegetation, and other damage to the natural beauty and resources of the area.

(4) There shall be no cutting or removal of natural vegetation, living or dead, to create scenic vistas, except as expressly provided by law.

Section 9. Commercial Uses. (1) The operator of a new commercial service within a wild river corridor shall submit written notification to the cabinet not less than thirty (30) days prior to commencing such use.

(2) The construction of access roads, ramps, wharves or boat docks, buildings or other facilities required to effect a commercial use shall be located outside of a wild river corridor unless authorized by a change of use permit.

(3) The operator of a commercial service on a wild river shall comply with all applicable provisions of this administrative regulation, and shall be responsible for ensuring that the commercial use does not impair or contribute to an adverse impact on the aesthetic, scenic, ecological, scientific, recreational or other significant features in the corridor as identified in the management plan or by the cabinet, or cause substantial damage to soils, vegetation, fish and wildlife or water quality.

(4) The cabinet may condition or deny commercial use of a wild river, as provided in Section 7(4) of this administrative regulation.

(5) In accordance with 304 KAR 1:030, operation of a commercial activity within a state park requires prior written consent from the Department of Parks.

(6) Commercial harvest of mussels by any method is prohibited in areas where mussel species considered endangered or threatened by the Kentucky Academy of Science are known to occur.

Section 10. Scientific Study. (1) A research plan shall be submitted to the cabinet for approval prior to the commencement of any scientific study that may affect a wild river corridor.

(2) A research plan submitted to the cabinet on a form supplied by the cabinet shall contain the following information:

(a) The name, address, telephone number, professional affiliations and qualifications of the principal investigator;

(b) A U.S. geological survey 7.5 minute topographic map delineating the location and extent of the study area;

(c) The estimated dates of initiation and completion of the study;

(d) The objectives, methods and significance of the study and a statement as to the necessity or advantages of conducting the study within the wild river corridor;

(e) Plant or animal species or any special features which may be affected by the study, and the type and extent of any such effects; and

(f) A list of any plants, animals or other resources or materials to be collected, the estimated quantity to be collected, and the permit

numbers of collection permits obtained from state and federal agencies.

Section 11. Utility Right-of-way Construction. (1) As set forth in KRS 146.290, the construction of a transmission line or pipeline right-of-way within any portion of a wild river corridor shall require written approval from the secretary prior to the initiation of any construction activities within the wild river boundaries.

(2) Authorization to construct a right-of-way shall require application by the owner of the utility or pipeline company or their engineering representatives, on an application form supplied by the cabinet. The application shall include a land use plan containing the following information:

(a) A U.S. geological survey topographic map to scale not greater than one (1) inch equal to 500 feet, showing the precise route and dimensions of the right-of-way;

(b) The estimated dates for initiation and completion of construction and the name, address and telephone number of the person or persons in charge of the construction;

(c) A detailed description of the methods of construction and specifications, including profile sheets bearing the seal and signature of a registered professional engineer;

(d) A statement of possible alternate routes for the right-of-way and why the proposed route was selected;

(e) A detailed reclamation plan designed to return the disturbed area as nearly as possible to its former appearance and condition, including the use of native species to revegetate disturbed areas; and

(f) A detailed description of proposed methods for maintaining the right-of-way, including the brand names and methods of application of any herbicides to be used.

(3) Upon receipt of an application, an inspection of the proposed construction site will be made by cabinet personnel with the property owner and applicant or their representatives, and personnel from appropriate state and federal agencies.

(4) The secretary shall notify the applicant as to whether the application is approved or denied within sixty (60) days following receipt of the application, and will state the reasons for the decision.

(5) If an application is denied, the applicant may submit a revised application to adequately address the reasons for denial stated in the secretary's written decision.

(6) An application will be approved only if there is no possible alternative route for the right-of-way that would bypass or cause less impact to the wild river corridor, and the applicant agrees to restore all disturbed area within the wild river corridor as nearly as possible to its former appearance and condition, as required under KRS 146.290.

(7) Authorization to construct a right-of-way shall contain, but not be limited to, the following conditions:

(a) Wherever feasible, the right-of-way shall be routed to avoid steep slopes, erodible soils, surface waters and areas with high water tables, public recreation areas, and other significant natural and cultural areas identified by the cabinet, and shall be the minimum width necessary for construction and maintenance;

(b) Adequate measures shall be taken to control sediment and any hazardous substances, and to minimize the visual impact of the right-of-way when viewed from the wild river or other designated public use areas;

(c) Any timber cutting required shall be according to the provisions of 401 KAR 4:140, Sections 4 through 7, and 9 through 14 and Section 17(10) through (21);

(d) Every effort shall be made to minimize disturbance to the streambed, stream banks and fish and wildlife habitat during construction activities, and to keep timber slash and other debris out of surface waters and the immediate floodplain;

(e) Stream crossings by equipment or vehicles in a wild river corridor shall require the use of a temporary bridge or other methods approved by the cabinet and be designed so as not to impede stream flow. Construction across surface waters shall occur when local fish and wildlife are not spawning or nesting;

(f) Vehicles and equipment shall be stored outside of the wild river corridor when not in use;

(g) Aerial spraying of herbicides shall not be permitted within the boundaries of a wild river. Direct application of herbicides at ground level shall be limited to brands that are nontoxic to fish and wildlife;

(h) Pipeline relief valves shall be located outside of the wild river corridors;

(i) Primary consideration shall be given to underground placement of transmission lines and pipelines. Overhead transmission lines and towers shall be in accordance with environmental guidelines required by the Rural Electrification Authority, and shall be designed so as to prevent electrocution or other injury to wildlife;

(j) Reclamation shall consist of establishing a permanent vegetative cover on all disturbed surfaces, planting native trees or shrubs where necessary to establish a buffer zone along the banks of the wild river, implementing measures to prevent access by off-road vehicles, and removing all evidence of construction activities;

(k) A performance bond, in an amount to be determined by the cabinet, shall be required for reclamation if the cabinet determines that the proposed construction may potentially damage, degrade or otherwise have an adverse impact on any significant feature known to occur within the wild river corridor.

(l) The applicant shall provide written notice to the cabinet upon completion of reclamation, and cabinet personnel will inspect the construction site to verify compliance with all permit conditions before the bond is released.

Section 12. Road Construction. (1) In accordance with KRS 146.290, new permanent roads shall not be constructed within a wild river corridor except as authorized by the secretary to enhance recreational opportunities or to protect soil, water or other natural resources.

(2) Temporary roads shall be constructed within a wild river corridor only as necessary to effect a use authorized by a change of use permit, and shall be closed and reclaimed immediately after the permitted land use is concluded.

(3) Any construction required to improve, repair or replace existing state or county-maintained roads or bridges shall require full environmental review by the division and other appropriate state natural resource agencies prior to any construction activity.

(4) During authorized construction activities, no heavy equipment shall be driven through or into a wild river unless every feasible precaution has been taken by the operator to prevent damage to stream-bank vegetation, protect fish and wildlife habitat, control soil erosion and prevent stream sedimentation.

(5) When recommended by the secretary, design plans for improving or replacing a bridge across a wild river shall consider provisions for enhancing public access to the river for recreational uses consistent with the provisions of KRS 146.200 to 146.360.

Section 13. Agency Notification. (1) State or local government agencies which engage in or regulate any activity within the watershed of a wild river shall notify the cabinet prior to the initiation of any activity which may adversely affect the river, and shall provide the cabinet an opportunity to review proposals and plans for the new activity.

(2) A change of land use on state-owned lands within a wild river corridor that does not conform with the purpose and intent of KRS 146.200 to 146.360 shall require that the state agency that owns the affected land obtain a change of use permit from the cabinet.

Section 14. Fire Control. (1) State fire control provisions of KRS Chapter 149, and any which may be established by cooperative agreement, shall be strictly enforced.

(2) Fire shall be controlled by methods that require the least disturbance to soils and vegetation, and use of heavy equipment shall be limited to situations where an eminent threat to life or personal property exists. Any fire hazard reduction or replanting after fire shall be coordinated with the division.

Section 15. Signs. (1) The posting of commercial signs, advertisements, announcements, campaign slogans or other written messages other than those related to permitted uses shall be prohibited.

(2) As otherwise allowed by law, signs may be installed by the management agency, local government, landowner or public utility for the purpose of public safety, posting of property boundaries or property protection, identification of river corridor boundaries and public access points or as otherwise deemed necessary for resource protection, interpretation or regulatory purposes.

(3) Signs shall be of a design and construction conforming to the natural setting in which they are located, and shall not exceed sixteen (16) square feet in size.

(4) Any person with the permission of the landowner may post informational and directional signs within a corridor as are necessary to the continuance of an existing use.

Section 16. Enforcement and Hearings. (1) Whenever the cabinet has reason to believe a violation of 401 KAR Chapter 4 has occurred, a notice of violation shall be issued.

(2) The provisions of KRS 224.10-420 shall apply to any cabinet order or determination made pursuant to the provisions of 401 KAR Chapter 4.

(3) Hearings required to be conducted due to the issuance of a notice of violation issued pursuant to subsection (1) or the filing of a petition pursuant to subsection (2) of this section shall be conducted pursuant to KRS 224.10-440.

(4) Appeals may be taken from any final order of the cabinet pursuant to KRS 224.10-470.

(5) Violations of the provisions of 401 KAR Chapter 4 shall be liable to the civil penalty set forth in KRS 146.990(1).

(6) Orders for remedial action and recovery of penalties will be sought pursuant to KRS 146.350.

Section 17. Severability. In the event that any provision of KRS 146.200 to 146.360 or any administrative regulation promulgated pursuant hereto is found to be invalid by a court of competent jurisdiction, the remaining wild rivers regulations shall not be affected or diminished thereby. (16 Ky.R. 503; Am. 1336; eff. 11-22-89.)

401 KAR 4:130. Wild rivers change of use permit procedures.

RELATES TO: KRS 146.220, 146.270, 146.290, 146.990

STATUTORY AUTHORITY: KRS 146.270, 224.01-110, 224.10-100

NECESSITY AND FUNCTION: KRS 146.270 authorizes the secretary to adopt rules and administrative regulations necessary for the preservation and enhancement of wild rivers as set forth in KRS 146.250, and for control of recreational, educational, scientific and other uses of these areas in a manner that shall not impair them. In such administration, primary emphasis shall be given to protecting aesthetic, ecological, scenic, historic, archaeological and scientific features of the area. Under the provisions of KRS 146.290, the select cutting of timber, a resource removal or an agricultural use may be allowed pursuant to administrative regulations promulgated by the secretary upon the granting of a permit under the other provisions of KRS 146.200 to 146.360; uses which exist at the time the boundaries of a wild river are designated are exempt from this provision. KRS 146.290 requires that any permit granted to conduct a change of use shall contain such restrictions, terms and conditions as are appropriate to protect to the fullest extent possible the stream area and the public trust therein, within the intent of KRS 146.220. This administrative regulation establishes the procedure by which a landowner, as defined in 401 KAR 4:110, may apply to the secretary for a change of use permit to conduct a new land use within a wild river corridor.

Section 1. Applicability. In accordance with KRS 146.290, a new land use activity on state-owned or private lands shall not be undertaken within a wild river corridor until the landowner has obtained a change of use permit from the cabinet. This administrative regulation applies to any landowner applying for a permit to change a land use within a wild river corridor. Nothing herein shall be construed as superseding any requirements of other cabinet programs or of other state or federal agencies.

Section 2. Permit Application. (1) A landowner desiring to commence the select cutting of timber, a resource removal or a new agricultural use on his or her property located within a wild river corridor shall apply to the secretary for a change of use permit on an application form supplied by the cabinet.

(2) The application shall include the name, address and telephone number of the landowner and the operator of the new land use.

(3) The application for removal of a subterranean resource shall include the names and addresses of all applicable surface owners. The applicant shall notify all applicable surface owners at the time application is made for a change of use.

(4) The application shall include a land use plan to consist of:

(a) A U.S. Geological Survey 7.5 minute topographic map which delineates the exact location and extent of the new use and any access roads being constructed or improved to effect the new use, in relation to all surface waters within the wild river corridor.

(b) The estimated dates of initiation and completion of the new use, where applicable.

(c) An estimate of the total acreage of the new use.

(d) A description of the methods for conducting the new land use including, but not limited to, any construction, excavation, blasting or tree cutting activities.

(e) A description of best management practices for controlling soil erosion and stream sedimentation, maintaining existing water quality, handling of wastes, hazardous substances and excess rock and earth, and preventing and controlling spills and accidents.

(f) A list of herbicides, pesticides, and other chemical products to be used and the planned methods of application and control.

(g) A description of reasonable alternate locations or routes for the land use and why the proposed site was chosen.

(h) A reclamation plan and time schedule which describes procedures for revegetating the affected land, types and locations of plant species to be used, and other measures required under 401 KAR 4:140, Section 14.

(5) The land use plan for underground mining shall include the following additional information:

(a) A second topographic map to scale not greater than one (1) inch equal to 500 feet, prepared, certified and registered by a professional engineer in accordance with the provisions of KRS Chapter 322, which shall delineate control of all surface and groundwater drainage on the site.

(b) Specific provisions for preventing water from entering the mine and for preventing discharges from the mine during and after the mining activity.

(c) A preblasting report, signed by a professional engineer, of the potential for damage from blasting to stream hydrology, including groundwater and subsurface drainage effects, historic structures, significant geologic formations or other significant features located within a wild river corridor.

(d) A dust control plan for the mining area.

(e) Evidence that the operation will not produce or discharge acid water or acid-forming materials.

(f) A copy of the subsidence control plan.

(6) The land use plan for oil and gas production shall include a spill prevention and control countermeasure plan to prevent and control accidental discharges of hazardous substances into surface and groundwaters.

(7) The land use plan for select cutting of timber shall contain the following additional information:

(a) A logging plan or other description of the planned cutting method and procedures for transporting logs and disposing of slash.

(b) The precise location and size of the log landing area(s) and the routing of haul roads.

(c) A timber marking report conducted and signed by a professional forester, indicating species composition, number of trees of each species, total volume and average volume per tree for each species, number of cull trees, and a description of the method used to mark the trees.

(d) A forest management plan developed by a professional forester may be submitted as part of the land use plan to waive the requirement of 401 KAR 4:140, Section 17(5) if it employs the

selective method of cutting trees and is otherwise compatible with the purpose and intent of KRS 146.200 to 146.360.

(8) The land use plan for an agricultural use involving livestock or poultry production shall describe a system for storing and disposing of animal wastes and for excluding livestock from buffer zones.

(9) The land use plan for the construction and operation of a public access facility, boat dock, ramp or other recreational facility shall include the following additional information:

(a) Design plans, signed by a registered engineer, showing the layout of all planned facilities, including roads, parking areas, trails and buildings.

(b) Evidence that any structures which would extend into the water will not substantially impede natural stream flow.

(c) A list of all permits applied for to conduct the new land use, a required under KRS Chapter 151 and other applicable state and federal laws.

(d) A waste control and disposal plan, if applicable.

Section 3. Inspection. Within thirty (30) days following receipt of a completed permit application, cabinet personnel will conduct an inspection of the site of the proposed land use change to identify and map the occurrences of significant features and other sensitive areas which may require special protective measures.

Section 4. Public Hearing. (1) Within sixty (60) days following receipt of a completed permit application, the secretary, in accordance with KRS 146.290, will hold a public hearing on the application and will notify the applicant of same by certified mail, return receipt requested.

(2) Public notice of the hearing will be given according to the provisions of KRS Chapter 424 and will state the nature and location of the proposed change of use.

(3) At the hearing, any interested party may attend and be represented by counsel and shall be allowed to present evidence as to whether the proposed change of use is consistent with the wild river management plan, the purpose and intent of the Kentucky Wild Rivers Act and other applicable law. The hearing need not conform to the strict rules of evidence as practiced in the courts of the Commonwealth and shall be conducted so as to permit the full development of all relevant issues and to insure that all persons have a fair and reasonable opportunity to be heard.

(4) The hearing shall be recorded, and the application, comments received from the public, and recommendations from government agencies shall be entered into the record. The cost of transcription of the record shall be borne by any party requesting a transcript.

Section 5. Permit Application Review. (1) The secretary shall evaluate all matters on record in light of the provisions of KRS 146.290, and shall further consider:

(a) The possible effects of the proposed new use on water quality, adjacent lands, aesthetics, fish and wildlife, vegetation, geologic features, historical and archaeological sites, recreational values, and endangered and threatened species.

(b) Alternate uses to which the land could be put which would be more consistent with the purposes and intent of KRS 146.200 to KRS 146.360.

(c) Alternate locations, including any outside of the wild river corridor that may be more appropriate for the proposed land use.

(d) The extent to which the proposed change of use or an alternate use conforms to the river management plan developed pursuant to KRS 146.270.

(e) Whether the denial or the issuance of a permit is consistent with the cabinet's mandate to protect the waters of the Commonwealth for the use, welfare and enjoyment of all of its citizens, and with the rights of landowners to the beneficial use of their property.

(f) Any existing laws or administrative regulations which apply generally to the proposed change of use.

(g) Whether the proposed change of use constitutes a threat, directly or indirectly, to public health or safety.

(h) Secondary effects likely to be caused or encouraged by the proposed change of use, such as off-road vehicle use, excessive noise, soil erosion, air or water pollution and economic factors relating to costs of additional facilities or resource protection measures which may be required in the general area in the future as a result, directly or indirectly, of the proposed change of use.

(2) In accordance with KRS 146.290, a written order shall be issued by the secretary within sixty (60) days following the public hearing. The order shall consist of a permit with appropriate standards attached in accordance with 401 KAR 4:140 if the application is approved, specify objections to the application and procedures for appeal if the permit is denied, or recommend an alternate use consistent with the Kentucky Wild Rivers Act. The order shall set forth the finding of fact and conclusion supporting the ruling. The order shall be forwarded to the applicant by certified mail, return receipt requested.

Section 6. Permit Conditions. (1) A permit to conduct a change of use will contain site-specific restrictions, terms and conditions as are appropriate to protect to the fullest extent possible the wild river area and the public trust therein, within the intent of KRS 146.220.

(2) A permit will become effective on the date of issuance and will remain in effect for one (1) year, at which time the permittee shall notify the cabinet in writing as to the status of the new land use. The permit may be renewed annually upon request by the permittee if the new use has remained consistent with the land use plan submitted and has complied with all permit conditions, the provisions of 401 KAR 4:110 to 4:140 and other applicable laws and administrative regulations.

(3) The landowner to whom a change of use permit is issued shall be held fully accountable for compliance with 401 KAR 4:110 to 4:140 and any additional terms and conditions imposed by the permit.

(4) The permit application and land use plan submitted shall be an instrument for adjudging compliance with the permit. Any changes in the application or land use plan shall require amendment of the permit before such changes are implemented. A permit may be revoked or restricted in the event that the application submitted is found to contain falsified or erroneous information or if conditions of the permit or any of the provisions of 401 KAR 4:110 to 4:140 are violated. Violations shall be subject to penalty as set forth in KRS 146.990.

(5) A change of use permit shall apply to the property for which it was granted and is transferable to any future owner of the property or interest in the property. While the permit is in effect, the permittee shall notify the cabinet of any sale, lease or other transfer of interest in the property to which the change of use applies, and shall make acknowledgment of the permit a condition of the sale, lease or other transfer of interest in the property.

Section 7. Appeal of Secretary's Order. (1) The landowner may file a written objection to the ruling on or before thirty (30) days of the date of its issuance. The written objection shall set forth the basis of the objection and be filed with the Docket Coordinator of the Division of Hearings.

(2) After filing of the written objection, an authorized agent of the secretary shall meet with the landowner and attempt to reach an agreement with respect to a modification of the ruling.

(3) If no agreement is reached within sixty (60) days of filing of the written objection, the secretary shall proceed pursuant to KRS 146.290. (15 Ky.R. 703; Am. 998; eff. 10-26-88.)

401 KAR 4:140. Wild rivers change of use permit standards.

RELATES TO: KRS 146.220, 146.270, 146.280, 146.290, 146.350, 146.990, 151.140

STATUTORY AUTHORITY: KRS 146.270, 151.125, 224.01-110, 224.10-100

NECESSITY AND FUNCTION: KRS 146.270 authorizes the secretary to adopt rules and administrative regulations as necessary for the preservation and enhancement of wild rivers as set forth in KRS 146.250, and for control of recreational, educational, scientific and other uses of these areas in a manner that shall not impair them.

In such administration primary emphasis shall be given to protecting aesthetic, scenic, historic, archaeologic, and scientific features of the area. Under the provisions of KRS 146.290, the select cutting of timber, other resource removal or an agricultural use may be allowed pursuant to administrative regulations promulgated by the secretary upon the granting of a permit under the other provisions of KRS 146.200 to 146.360. KRS 146.290 requires that any permit granted to conduct a change of use shall contain such restrictions, terms and conditions as are appropriate to protect to the fullest extent possible the stream area and the public trust therein within the intent of KRS 146.220. This administrative regulation sets forth minimum performance standards for conducting a land use change in a wild river corridor as necessary to protect the scenic beauty and environmental quality.

Section 1. Applicability. This administrative regulation applies to new land uses, as defined in 401 KAR 4:110, within designated boundaries of a wild river corridor which require a change of use permit from the cabinet. Nothing herein shall be construed as superseding any requirements of other cabinet programs or of other state or federal agencies.

Section 2. Buffer Zones. (1) Other than as necessary to provide river access sites authorized by the cabinet, a change of land use shall be located outside of buffer zones.

(2) Where the adjacent slope is less than forty (40) percent the minimum width of a buffer zone bordering streams and other surface waters shall be 100 feet as measured laterally from the bank of the stream or other surface water. Where the adjacent slope is forty (40) degrees or greater, the buffer zone width shall vary as follows:

Slope of Land (percent)	Minimum Width of Buffer Zone (feet)
40 to 49	115
50 to 59	125
60 to 69	145
70 to 79	165

(3) The boundaries of a buffer zone shall be flagged by the permittee with durable, brightly-colored material prior to the commencement of a permitted change of use.

Section 3. Extent of Disturbance. A new land use shall occupy the minimum area necessary to accomplish the intended use as specified in an approved land use plan.

Section 4. Water Quality. (1) In accordance with the nondegradation provision for outstanding resource waters contained in 401 KAR 5:029(2)(4), background water quality of surface waters within a wild river corridor shall be maintained or enhanced.

(2) Any new discharge of a substance or combination of substances into a surface water within a wild river corridor shall maintain or enhance background water quality in the receiving stream.

(3) Water quality data shall be collected as necessary to document maintenance of background water quality.

(4) The natural flow of water in wild rivers shall be maintained. Water withdrawals shall require a permit as provided in 401 KAR 4:010 and KRS 151.140, and shall not be allowed to impair existing recreational or fish and wildlife uses of the river, nor adversely impact endangered or threatened species.

Section 5. Erosion Control. (1) Best management practices shall be implemented as necessary to control soil erosion and sediment wherever there is ground surface disturbance; sediment shall not be allowed to accumulate in surface waters.

(2) Temporary erosion control measures shall be immediately implemented on all disturbed areas not needed for ongoing operation until permanent control measures can be established, and shall minimally include use of one (1) or more of the following:

(a) All disturbed surfaces shall be graded, seeded, fertilized and mulched to establish complete vegetative ground cover. Native species of grasses and legumes shall be used wherever conditions allow.

(b) Sediment ponds and filters, such as baled vegetation, shall be used as necessary to trap sediment within disturbed areas. Filter fences may be used in situations where other methods may not provide adequate control.

(c) On slopes of ten (10) percent or more, diversion structures shall be installed uphill of disturbed areas as needed to divert surface run-off into vegetated areas.

(3) Vehicular traffic shall be restricted to the access roads and skid trails approved in the land use plan.

(4) Activities involving the use of heavy equipment shall be suspended during wet soil conditions, and heavy equipment shall be stored outside the corridor when not in use.

(5) During construction activities, storage and disposal of unconsolidated materials shall occur only at locations approved in the land use plan, and topsoil removed from the operation site shall be stockpiled and stabilized for use during reclamation.

(6) Intermittent streams which are tributaries of a wild river may be temporarily impounded or otherwise altered to effect a permitted use. Streambed materials shall not be moved or removed from the streambed of a permanent or intermittent stream for any purpose.

Section 6. Stream Crossings. (1) Vehicular stream crossings shall be prohibited where stream bank slopes exceed ten (10) percent, or where the crossing might otherwise have an adverse impact on the stream environment.

(2) Natural drainages which are not composed substantially of rock shall be accommodated with an appropriately sized drainage relief structure, such as a culvert or temporary bridge, at the point of intersection with a road.

(a) Stream crossings shall occur only at right angles where the stream channel is most narrow and has firm, rocky banks.

(b) Relief structures for crossing a permanent stream shall minimally consist of a closed culvert designed to handle a ten (10) year, twenty-four (24) hour precipitation event, and shall be embedded in clean rock fill and covered by compacted fill to a minimum depth of one (1) foot. The bottom of culverts shall be flush with stream substrates.

(3) As required under KRS 151.250, a permit to authorize construction in a flood plain must be obtained from the cabinet prior to bridge construction if the area of the watershed is one (1) square mile or greater.

Section 7. Access Roads. (1) Existing roads shall be used whenever possible to minimize surface disturbance.

(2) Best management practices for road construction, adopted by reference in 401 KAR 5:200, shall be employed to the greatest extent possible during road construction and maintenance.

(3) Roads shall be routed to follow the existing land contour as closely as possible and to avoid surface waters, flood plains and any areas vital to the preservation of significant features. Except for necessary stream crossings or provision of public access to the river, no portion of any road shall be located in a buffer zone or streambed.

(4) Roads shall not exceed a maximum grade of ten (10) percent for distances of more than 150 feet. Portions of roads on grades steeper than ten (10) percent shall be graded and surfaced with stable materials such as limestone rock, crushed gravel or other material approved in the land use plan, and shall be sufficiently durable for the anticipated volume of traffic and the weight, and speed of vehicles to be used. Acid or toxin-forming substances shall not be used for road surfacing.

(5) The width of a road shall be appropriate for the anticipated volume of traffic and the size, weight, and speed of vehicles to be used and shall not exceed sixteen (16) feet for single-lane traffic unless special exemption is made on the application.

(6) Vegetation shall not be cleared from an area greater than the width necessary for road and associated ditch construction. Road shoulders shall be seeded in grass cover immediately after construction is completed, and ditches shall be lined with gravel.

(7) Roads constructed to effect a permitted use shall be closed by means of a locked gate located at or near the corridor boundary

whenever adverse weather or other conditions cause operation and maintenance of the permitted use to be suspended for an extended period of time.

Section 8. Structures. (1) Structures permitted by the management agency shall be located either:

(a) Beyond the limit of the 100-year flood plain as determined by the division; or

(b) No closer than 250 feet from the nearer bank of the wild river.

(2) Structures shall be screened by vegetation or topographic features so as not to be visible from the nearer bank of the wild river.

(3) Any new dock, boat ramp or other river access facility shall be constructed so as to minimize its intrusion into the river, if any, and shall not substantially impede natural stream flow.

(4) Best management practices for construction shall be used as necessary to control erosion and prevent sedimentation of surface waters.

Section 9. Control of Hazardous Substances. (1) To the extent not inconsistent with any other applicable law, any hazardous substance used for or resulting from a new land use shall be confined to the smallest practicable area, shall be stored so as to prevent escape as a result of rain, percolation, high water or other cause, and shall be properly and legally disposed of outside of the wild river corridor.

(2) The operator shall immediately notify the cabinet of any accident involving fire, personal injury, discharge or accidental bypass of any hazardous substance within a wild river corridor, and shall submit a written report to the cabinet within forty-eight (48) hours of an accident event.

Section 10. Solid Waste Disposal. Scrap and waste materials used to effect a new land use shall be removed and properly disposed of outside of the corridor immediately after their use is concluded.

Section 11. Visibility. Buildings, facilities and other structures shall be made as inconspicuous as possible by painting or staining in muted tones and, or, by screening with native vegetation. Electric lines shall not be strung across a wild river unless no other option is available, and shall be hidden to the extent possible.

Section 12. Cutting of Vegetation. (1) Any tree cutting required for a new land use, other than the permitted select cutting of timber or a new agricultural use, shall be limited to trees which interfere with the construction or operation of the permitted use, as approved in the land use plan.

(2) Burning of forest vegetation shall be prohibited unless authorized by the Division of Forestry, or the U.S. Forest Service on federal lands, for purposes of disease control or as part of a prescribed burn and shall conform with other applicable provisions of law.

(3) Every effort shall be made to avoid unnecessary removal or trampling of vegetation within a corridor.

Section 13. Operation and Maintenance. All operation and erosion control structures and facilities shall be routinely inspected and maintained by the operator to ensure proper functioning and to prevent the accumulation or accidental discharge of hazardous substances or waste materials.

Section 14. Reclamation. (1) The permittee shall provide written notification to the cabinet immediately upon the conclusion of a new land use and shall begin implementing reclamation measures within thirty (30) days following such notifications.

(2) Reclamation shall involve restoration of all disturbed area to its predisturbance appearance and condition or an improved condition that will enhance natural and aesthetic values.

(3) Reclamation shall be completed within ninety (90) days following conclusion of the new use unless an exception is approved by the cabinet before the ninety (90) day period ends.

(4) All facilities and structures installed for the new use, including temporary erosion control and drainage structures, shall be removed from the corridor, and the natural contours and drainage patterns shall be restored. Culverts and other relief structures may remain if approved by the cabinet to protect the natural and aesthetic values of an area.

(5) Unless otherwise approved in the land use plan, roads constructed for the permitted use shall be reclaimed by effectively blocking the road entrance to vehicular use, removing water control devices, restoring the ground surface to its natural contours, and seeding, fertilizing and mulching the roadbed. Native species of plants approved in the land use plan shall be used wherever conditions allow, and those having wildlife value will be preferred.

(6) Tree species which existed on the site prior to the land use change shall be planted on all areas cleared of trees during the land use change.

(7) Reclamation shall be considered complete when an inspection by division personnel determines that the affected site resembles, as closely as possible, the condition and appearance of the land and vegetation that existed prior to the land use change.

(8) Failure of the operator to comply with these standards shall be cause for the denial of any future permit to conduct a change of use on land within a wild river corridor involving the operator.

Section 15. Additional Standards Specific to Exploration For and Extraction Of Oil and Gas. (1) A spill prevention and control countermeasure (SPCC) plan shall be prepared in accordance with 40 CFR Part 112 and implemented before drilling begins. The SPCC plan shall contain a contingency plan for reporting and controlling accidental discharges according to 401 KAR 5:015.

(2) The area of disturbance at each well shall not exceed sixty (60) feet by 100 feet unless otherwise approved in the land use plan.

(3) Prior to drilling, an area forty (40) feet in diameter centered around each well shall be isolated by an earthen dike twelve (12) inches or more in height, and the enclosed ground surface shall be lined with three (3) inches or more of sorbent material.

(4) Acids and other well drilling and cleaning fluids shall be handled in accordance with Section 9 of this administrative regulation.

(5) Blowout prevention equipment shall be installed on wells during drilling.

(6) The permittee shall provide written notification to the division of the planned dates for drilling to provide an opportunity for division personnel to be present on-site during drilling activities.

(7) For air rotary or other dry methods of drilling, dust and other particulate matter blown from the well shall be directed away from surface waters and stockpiled in a manner that will prevent its entry into surface waters as a result of rain, percolation, wind or other cause. Dust may be controlled by injecting water into the air stream at a rate of approximately three (3) gallons per minute. Water and other fluids used in the drilling process shall not be discharged into surface waters.

(8) Whenever drilling or production is suspended for twenty-four (24) hours or longer, all valves and blowout prevention equipment shall be closed.

(9) Storage or loadout tanks shall be equipped with an oil brine separator and a safety valve to prevent accidental overflow of oil, and all valves and other fluid controls shall be kept locked or be removed when the operator is off-site to prevent accidents due to vandalism.

(10) No produced water shall be discharged into surface or groundwaters within a wild river corridor.

(11) Storage of produced water within a wild river corridor shall be in a closed tank having a minimum thirty (30) day storage capacity to prevent accidental discharge. Fluids shall be safely removed from the tank when the tank becomes filled to no more than two-thirds (2/3) capacity and be properly disposed of.

(12) Pits constructed to temporarily hold brine or other fluids produced during drilling shall be located beyond flood plains and other areas prone to flooding, and be constructed according to 401 KAR 5:090, Section 9(5)(a).

(13) Disposal of produced water shall be by reinjection into a disposal well in accordance with 401 KAR 5:090, Section 11, and

require an underground injection control permit as provided for in 40 CFR 146, or shall be transported outside of the corridor and reinjected into an approved disposal well.

(14) Any pipelines leading from pumps to storage or loadout tanks shall be fitted within a second pipe or within an open culvert lined with nonpermeable material that shall act as a catch basin for any accidental discharge of oil or brine.

(15) Pipelines shall be placed as far away as possible from streams and other surface waters, shall follow an access road wherever possible, and shall not be routed across a wild river.

(16) Facilities, roads, collecting lines and other structures shall be inspected daily by the operator when wells are producing to ensure erosion control and prevent accumulations or leaks of oil, produced water or other hazardous substances.

(17) Spills or leaks of oil, produced water, or drilling or cleaning fluids shall be contained by the operator immediately upon discovery, be disposed of outside of the corridor in an approved manner within twenty-four (24) hours of discovery, and be reported to the cabinet in accordance with 401 KAR 5:015 and 40 CFR Part 110.

(18) The operator shall keep sorbent material, fire extinguishers and other firefighting tools readily accessible on the site to control fire or an accidental discharge of oil or produced water.

(19) Trailers, mobile homes or other temporary or permanent structures used to house operation personnel shall not be installed within a wild river corridor.

(20) Reclamation shall include the plugging of all wells in accordance with oil and gas regulations, and the plugging affidavit shall be submitted to the division.

Section 16. Additional Standards Specific to Underground Mining. (1) No surface disturbance resulting from underground mining shall occur within the buffer zones of streams and other surface waters within a wild river corridor.

(2) Drainage from any surface disturbance resulting from underground mining shall be controlled following the guidelines contained in "Best Management Practices for Surface Coal Mining," published in 1984 and adopted by reference herein. Copies of this document can be obtained from the Division of Water, 18 Reilly Road, Frankfort, Kentucky.

(3) Mine surface entrances shall be located outside a wild river corridor wherever possible.

(4) Underground mining shall not be permitted where subsidence or landslide cannot be adequately controlled. If subsidence or surface displacement of soil, rock or other ground material due to mining activities causes an adverse impact to the river or other surface waters within a wild river corridor, the mining operation shall be suspended until such time as the operator has corrected the damage and provided evidence that further subsidence or landslide shall not occur.

(5) A subsidence event shall be reported to the cabinet within twenty-four (24) hours of discovery, the surface impacts of subsidence shall be corrected and the area restored to its previous condition before mining commences. The disturbed area shall be revegetated, using native grasses and legumes wherever conditions allow, and be thoroughly mulched with straw or other suitable material until a vegetative cover becomes established.

(6) In addition to the standards set forth in this administrative regulation, any roads constructed or improved to effect a mining use shall be in accordance with 405 KAR 18:230, and shall be constructed and maintained using best management practices for mining haul roads. Other transportation systems such as tramways, railroad loops or spurs shall not be allowed within a wild river corridor unless such access would cause less impact on the river environment than any alternative system.

(7) Underground development waste, spoil, coal or other hazardous substances shall be transported to proper storage and disposal areas outside of the wild river corridor, and shall otherwise be handled according to 405 KAR 18:130 and 405 KAR 18:190. No tipples, processing or refuse areas shall be located within a wild river corridor.

(8) Mine shafts shall not be routed beneath streams and other surface waters in order to avoid subsidence and physical damage to natural surface drainage patterns.

Section 17. Additional Standards Specific to the Selective Cutting of Timber. (1) Timber cutting shall follow to the fullest extent possible the guidelines contained in "Forest Practices Guidelines for Water Quality Management," published July 1980 and adopted by reference herein. Copies of this document can be obtained from the Division of Water, 18 Reilly Road, Frankfort, Kentucky.

(2) A professional forester shall survey and mark all trees to be cut. A minimum residual basal area of not less than sixty (60) square feet per acre shall be left standing and evenly distributed over the harvested area.

(3) The boundaries of the area to be cut shall be clearly marked using paint.

(4) Prior to cutting, all active den trees and at least three (3) mast-producing trees per acre consisting of trees in the largest size class in the stand, shall be marked and left standing.

(5) Tree cutting shall not be repeated in the permitted area at intervals of less than twenty (20) years from the date that reclamation is completed as specified in Section 14(7) of this administrative regulation, unless the landowner has submitted a timber management plan as part of the land use plan, approved by a professional forester, which recommends a shorter interval.

(6) The selective cutting of trees shall be prohibited within buffer zones except to remove diseased or insect-infested trees or those becoming uprooted due to natural causes.

(7) Construction of roads and skid trails shall occur outside of buffer zones, unless less impact would result from using an existing road in a buffer zone and be routed to follow the contours of the land.

(8) Trees used for fastening or attaching cables, guys or other equipment shall be adequately protected from possibly injury.

(9) In hilly terrain, logs shall be skidded uphill where possible, on trails designed and maintained for this purpose using best management practices, and shall not be skidded through surface waters.

(10) The amount of surface disturbance required for construction of roads, skid trails and log landings shall be kept to the minimum required for such purposes, and the area of a landing shall not exceed 6,000 feet unless and exception is approved in the land use plan.

(11) Log landings shall be located so as to minimize erosion and wherever possible be located on well-drained sites on slopes of less than ten (10) percent. Where necessary, a landing shall be protected from overland flow of water by construction of a diversion ditch on the uphill side to divert water into well-vegetated areas.

(12) Timber shall be cut as close to the ground as is reasonably practicable, with the height of the stumps not to exceed twelve (12) inches above ground on the uphill side of the tree.

(13) Trees shall be cut so as to fall away from streams and other surface waters, rock houses, historic structures and other sensitive areas identified by the division.

(14) Tree tops and other nonmarketable timber slash shall be lopped to within two (2) feet of the ground surface, or chipped and spread on disturbed areas to control erosion. Slash shall be randomly placed within a corridor.

(15) Pesticides and herbicides shall be used in accordance with the land use plan submitted as part of the permit application.

(16) Facilities for processing logs shall be located outside wild river corridor boundaries.

(17) Logging operations shall cease during wet soil conditions.

(18) At the conclusion of the land use change, log landings, skid trails and haul roads shall be reclaimed according to Section 14 of this administrative regulation.

(19) A permit to conduct select cutting of timber shall not be extended more than 180 days beyond the original permit expiration date.

Section 18. Additional Standards Specific to Agriculture. (1) A new agricultural use within a wild river corridor shall follow to the fullest extent possible the guidelines contained in "Best Management Practices for Agriculture," published July 1985 and adopted by

reference herein. Copies of this document can be obtained from the Division of Water, 18 Reilly Road, Frankfort, Kentucky.

(2) The removal of trees to effect a new agricultural use shall be subject to all applicable provisions of Section 17 of this administrative regulation.

(3) Where little or no vegetative ground cover exists between the proposed agricultural use and a stream or wetland, native trees and ground cover shall be planted along the banks of the surface water to create buffer zones prior to the commencement of the agricultural use. Plant species will be recommended by the division.

(4) Severely eroded, sediment-producing areas shall be properly stabilized using best management practices for critical areas prior to the commencement of a new agricultural use in an area.

(5) Conservation tillage methods shall be employed to the extent practicable on lands having slopes of ten (10) degrees or greater.

(6) A cover crop shall be planted in cultivated fields during winter and other periods when the cultivated crop does not provide adequate ground cover.

(7) Livestock shall be excluded from buffer zones by fencing or other methods.

(8) Watering areas for livestock shall be located outside of buffer zones.

(9) The number of livestock per area of pasture shall be estimated in the land use plan and shall be maintained at or below the level necessary to sustain complete ground cover.

(10) Animal wastes shall be properly stored and disposed of in a manner that will prevent their introduction into streams. Spreading of waste over fields as a disposal method shall be avoided during periods of heavy rainfall or frozen soil conditions.

(11) Any pond constructed to hold animal waste shall be located as far away as possible from streams and other surface waters, and be designed to hold the run-off from a twenty-five (25) year, twenty-four (24) hour storm event plus six (6) months of precipitation.

(12) A perennial cover crop shall be planted between trees in orchards and nurseries immediately after the nursery stock is planted.

(13) The use of pesticides and herbicides shall be restricted to those approved in the land use plan, and the use of a persistent, toxic substance shall not be approved if an equally effective, less toxic and less persistent product is available.

(14) Aerial spraying of chemicals shall not be allowed within a wild river corridor.

(15) The cabinet may attach additional standards to a permit authorizing an agricultural use on highly erodible lands.

Section 19. Additional Standards for Recreation Facilities Development. (1) Development of commercial or private recreational facilities within a wild river corridor shall be consistent with wild river management plans, and buildings and other structures shall be located outside of buffer zones wherever possible.

(2) Recreation facilities shall be primitive in design and appearance and constructed of natural or natural-appearing materials that blend with the surroundings.

(3) Recreation facilities shall be designed so as to require minimal ground disturbance and removal of vegetation. (15 Ky.R. 706; am. 1000; eff. 10-26-88.)

401 KAR 4:200. Documents and procedures incorporated by reference for the administration of the regulatory provisions of Kentucky's water resources law.

RELATES TO: KRS 151.125, 151.140, 151.150, 151.160, 151.182, 151.184, 151.200, 151.230, 151.240, 151.250, 151.260, 151.280, 151.293, 151.295, 151.297, 151.310

STATUTORY AUTHORITY: KRS 151.125

NECESSITY AND FUNCTION: KRS 13A.120 prohibits an administrative body from issuing standards or by any other name a document where an administrative regulation is required or authorized by law. KRS 13A.130 prohibits an administrative body from using a policy, memorandum, or other form of action to modify or expand a statute or administrative regulation, or to expand or limit a right guaranteed by the Constitution of the United States, the Constitution of Kentucky, a statute, or an administrative regulation. This administrative regulation provides for the incorporation by reference allowed under 1 KAR 1:010 of the documents needed by the Natural Resources and Environmental Protection Cabinet to implement 401 KAR Chapter 4, Water Resources. Copies of these documents may be obtained or examined at the Division of Water Frankfort Office.

Section 1. Stream Construction Permits. The following documents and policy are incorporated by reference for the purpose of determining whether to issue or deny permits for any construction or reconstruction in or along a stream pursuant to KRS 151.250:

(1) Documents.

(a) National Engineering Handbook, Section 4, Hydrology; Soil Conservation Service; August, 1972.

(b) HEC-2 Water Surface Profiles (Computer Program); U.S. Army Corps of Engineers; September, 1982.

(c) Federal Emergency Management Agency, National Flood Insurance Program, Part 59 - General Provisions; FEMA; May 31, 1979.

(d) Kentucky Model Flood Damage Prevention Ordinance; Booker Associates, Inc.; August, 1983.

(e) Technique for Estimating Magnitude and Frequency of Floods in Kentucky; U.S. Geological Survey, Water Resources Investigations 76-62; November, 1976.

(f) Drainage Areas of Streams at Selected Locations in Kentucky; U.S. Geological Survey, Open-File Report 81-61; January, 1981.

(g) TP-149, A Method for Estimating Volume and Rate of Run-off in Small Watersheds; Soil Conservation Service; April, 1973 Revised.

(h) Floodway, Flood Boundary and Floodway Maps; Flood Insurance Rate Maps; Flood Hazard Boundary Maps; Federal Emergency Management Agency; (Dates Vary).

(i) Executive Order 77-927, National Flood Insurance Program; Signed by Governor Julian Carroll, September 30, 1977.

(2) Policy. Division of Water policy document DOW 84-01 is hereby incorporated by reference.

Section 2. Dam Construction Permits. The following documents are incorporated by reference for the purpose of determining whether to issue or deny permits to construct, reconstruct, modify, or remove any dam on appurtenance thereto:

(1) Documents.

(a) Drainage Manual; Commonwealth of Kentucky, Department of Transportation; 1983 (Revised); Page 400.

(b) DAMS 2, Structure Site Analysis Computer Program; Soil Conservation Service; October, 1982 (Draft).

(c) HEC-1, Flood Hydrograph Package (Computer Program); U.S. Army Corps of Engineers; September, 1981.

(d) HEC-2, Water Surface Profiles (Computer Program); U.S. Army Corps of Engineers; September, 1982.

(e) Guidelines for the Geotechnical Investigation and Analysis of Existing Earth Dam; Division of Water; June, 1980.

(f) General Discussion of Dam Breach Analysis; Division of Water; August, 1979.

(g) TR-20, Computer Program for Project Formulation Hydrology, Soil Conservation Service; May, 1983 (Draft of Second Edition).

(h) ICES LEASE-1, Slope Stability Analysis (For Computer); Bailey and Christian, Massachusetts Institute of Technology; April, 1969.

(i) REAME, Computerized Slope Stability Analysis; Y. H. Huane, Institute for Mining and Minerals Research; February, 1983.

(j) SWASE, Computerized Slope Stability Analysis; Y. H. Huang, Institute for Mining and Minerals Research; 1983.

(k) NWS Dam - Break Flood Forecasting Model (Computer Program); Dr. D. L. Fread, National Weather Service; July 18, 1983.

(2) Policy. (Reserved).

Section 3. Water Withdrawal Permitting. The following documents included by reference and policies are for the purpose of determining whether to approve or deny permits to withdraw water pursuant to KRS 151.150:

(1) Documents.

(a) Flow Duration at Selected Stream-Sites in Kentucky (USGS Open File Report 80-1221).

(b) Drainage Areas of Streams at Selected Sites in Kentucky (USGS Open File Report 81-61).

(c) USGS Stream-flow/Basin Characteristics (unpublished).

(2) Policy.

(a) For the purpose of evaluating withdrawals from streams, the seven (7) day, ten (10) year low flow will be maintained in order to ensure proper water quality and provide for aquatic life needs.

(b) In evaluating applications for groundwater withdrawals, the cabinet will allow the withdrawal of reasonable amounts without requiring submission of extensive data and analysis. However, if the cabinet has reason to believe that groundwater withdrawals will be of such location or extent that existing uses will be impaired, the cabinet shall require detailed analysis of the proposed withdrawal's effects. If a permitted groundwater withdrawal adversely effects previously permitted groundwater users or domestic water supplies, the withdrawal shall be reduced to a rate that no longer causes adverse effects or all affected users shall be provided with sufficient water to meet their needs. (10 Ky.R. 1212; Am. 11 Ky.R. 176; eff. 8-7-84.)

401 KAR 4:220. Water supply plan requirements.

RELATES TO: KRS Chapter 151

STATUTORY AUTHORITY: KRS 151.110, 151.114, 151.116, 151.118, 151.125

NECESSITY AND FUNCTION: This administrative regulation is required to implement the legislative mandate of KRS 151.110, 151.114, 151.116, and 151.118, directing the Natural Resources and Environmental Protection Cabinet to administer a program for developing a long range water supply plan for each county in the Commonwealth. This administrative regulation describes planning procedures, details to be included in a plan, funding criteria, and uniform data base development.

Section 1. Definitions. The following definitions describe terms used in this administrative regulation. Terms not defined below shall have the meanings given to them in KRS 151.100, or if not so defined, the meanings attributed by common use.

(1) "Aquifer" means a saturated, permeable geological unit that is capable of yielding water to wells or springs.

(2) "Available water" means water that may be withdrawn by any one (1) user at a specific site, according to the water withdrawal permitting requirements of KRS 151.140 through KRS 151.170 and 401 KAR 4:010.

(3) "Base year" means the year that is the starting point for planning conducted pursuant to this administrative regulation, usually the year in which planning begins, and from which existing water use information is drawn.

(4) "Contributing watershed" means a watershed delineated in such a way that noncontributing areas, such as areas draining to sinkholes that drain into another watershed, are excluded.

(5) "Discharge" means the volume of water that flows past a given point within a given period of time, usually expressed in cubic feet per second or gallons per minute.

(6) "Historical year" means a year four (4) to six (6) years prior to the base year.

(7) "Hydrologic unit" means watershed boundaries as shown on the U.S. Geological Survey's Hydrologic Unit Map of Kentucky.

(8) "Impoundment" means a water-retaining structure with the ability to retain at least twenty-five (25) acre-feet of water at normal pool.

(9) "Interconnection" means a linkage between two (2) or more water suppliers that can be used to transfer water from one (1) water supplier to the other.

(10) "Kentucky River Authority" means the authority established under KRS 151.700 and 151.710.

(11) "Local planning fund contributors" means counties, cities, and water suppliers that pay any portion of the expenditures necessary to comply with this administrative regulation.

(12) "Monthly average flow" means the average flow for each month of the year based on the period of record. It is equal to the total volume of water used for the month divided by the number of days in the month.

(13) "Nonpoint source pollution" means pollution caused by diffuse sources, including land runoff, precipitation, atmospheric deposition, or percolation.

(14) "Phase one planning activities" include the activities required by this administrative regulation that relate to data collection and assessment of water supply planning needs. Specifically, these activities include the requirements for initiating the planning process, including notifications and setting planning objectives, and Section 6(1) through (8) of this administrative regulation.

(15) "Phase two planning activities" include the activities required by this administrative regulation that relate to inventorying water resources, protecting water supplier sources, preparing emergency plans, evaluating water supply alternatives, and to all other planning activities not completed as phase one planning activities.

(16) "Planning council" means a group formed for the express purpose of creating a water supply plan in compliance with this administrative regulation.

(17) "Planning grant" means funds awarded by the General Assembly and the cabinet to support water supply planning pursuant to this administrative regulation.

(18) "Planning representative" means a person who is designated by a planning council to perform tasks in compliance with this administrative regulation.

(19) "Planning unit" means a county or group of counties that have agreed to join with other counties to create a water supply plan that encompasses more than one (1) county.

(20) "Recharge area" means that area that captures and supplies water to a spring or an aquifer.

(21) "Regionalization" means the creation of a regional, administrative or infrastructural, water supplier unit by consolidation or expansion.

(22) "Safe yield" means the amount of water a user can withdraw annually from a groundwater basin throughout the year without depleting the well or aquifer and without adversely affecting other users of the aquifer.

(23) "Semipublic water supplier" means any water supply system that serves more than three (3) families, but is not a water supplier or distributor.

(24) "Seven (7) day, ten (10) year low flow" means the lowest mean flow for seven (7) consecutive days having a recurrence interval of ten (10) years, or having a ten (10) percent chance of occurring in any year.

(25) "Seven (7) day, twenty (20) year low flow" means lowest mean flow for seven (7) consecutive days having a recurrence interval of twenty (20) years, or having a five (5) percent chance of occurring in any year.

(26) "Source classification" means the particular type of a water supply site, including surface water intake, well, or spring-fed intake.

(27) "Specific capacity" means yield of a well per unit of drawdown.

(28) "Unaccounted for water" means water that is withdrawn and not used for commercial, residential, industrial, or municipal purposes.

(29) "Water conservation" means methods and technological applications of passive and active water savings and reuse devices, components and processes to reduce demand for water supply.

(30) "Water supplier" means any system that provides water to the public for human consumption, has at least fifteen (15) service connections or regularly serves an average of at least twenty-five (25) individuals daily at least sixty (60) days of the year, and withdraws more than fifty (50) percent of the water it distributes.

(31) "Water supply distributor" means any system that provides water to the public for human consumption, has at least fifteen (15) service connections or regularly serves an average of at least twenty-five (25) individuals daily at least sixty (60) days of the year, and depends on a water supplier to provide fifty (50) percent or more of the water it distributes.

(32) "Water supply reservoir" means a water retaining structure with the ability to retain at least thirty (30) days of average water use at normal pool, used by a water supplier.

(33) "Water supply source" means a particular site or classification of site where water is withdrawn.

(34) "Water watch group" means a group registered with the cabinet as part of the water watch program.

(35) "Zone of contribution" means the entire area recharging or contributing to a well or well field.

(36) "Zone of influence" means the spatial area surrounding a well, in which drawdown effects occur from groundwater pumpage.

(37) The following items used in this administrative regulation are defined in KRS 151.100: cabinet; dam; domestic use; groundwater; reservoir; secretary; watershed; and withdrawal of water.

Section 2. Scope and Applicability. Each county, its municipalities and water suppliers, shall prepare a water supply plan. Representatives of each county, its municipalities and water suppliers shall decide whether to form a multicounty planning unit and shall form a planning council to oversee the planning process. Under the oversight of the planning council, a planning representative shall assess the need to provide increased or alternative water supplies for the water supplier systems within each county, formulate recommendations to protect water supplies, and prepare a water supply contamination response plan. If increased or alternative water supplies are needed, the planning representative shall develop water shortage response plans and evaluate water supply alternatives. The planning council shall select water supply alternatives. Until July 15, 1996, the cabinet shall award grants, if budgeted by the General Assembly, for water supply planning.

Section 3. Content and Format of the Planning Documents. The planning representative shall prepare no less than two (2) documents which shall include the information as required by this administrative regulation and additional information as considered necessary by the planning council. The cabinet may accept planning documents that were prepared prior to the existence of a planning council in place of specific sections of the planning documents required by this administrative regulation.

(1) Plan formulation document. Documentation of the details of the planning process shall be placed in a publication subtitled "Plan Formulation Document." The plan formulation document shall have sections named and numbered as specified in this subsection.

(a) Phase one planning activities shall be documented in sections named and numbered as follows: I. Formation of the planning unit; II. Planning council and planning representative; III. Notifications; IV. Workplan and process for setting objectives; V. County base map; VI. Water use and water use forecast; VII. Water supplier source assessment; VIII. Supply adequacy assessment; Appendix PFD-A - Paying for the planning process; Appendix PFD-B - Council minutes.

(b) Phase two planning activities shall be documented in sections named and numbered as follows: IX. Supply protection; X. Water resources inventory; XI. Water supply alternatives; XII. Primary water supply alternative; XIII. Emergency plans; XIV. Implementation plan; Appendix PFD-A - Paying for the planning process; Appendix PFD-B - Council minutes. If the current supply source is adequate for forecasted demands, plan formulation document sections X, XI, XII, and XIV shall contain a brief statement of adequacy and the consequent lack of need to assemble information for each of those sections.

(2) Final plan document. Documentation of the water supply plan shall be placed in a publication subtitled "Final Plan Document." The final plan document shall have sections named and numbered as specified in this subsection.

(a) Phase one planning activities shall be documented in sections named and numbered as follows: I. Formation of the planning unit; II. Planning council and planning representative; III. Planning objectives and water supply planning conflicts; IV. County base map; V. Water use, forecast, and infrastructure assessment; VI. Water supplier source assessment; VII. Supply adequacy assessment; Appendix FPD-A - Obstacles to the planning process.

(b) Phase two planning activities shall be documented in sections named and numbered as follows: VIII. Supply protection; IX. Water resources inventory; X. Water supply alternatives; XI. Primary water supply alternative; XII. Emergency plans; XIII. Implementation plan; XIV. Plan approvals; Appendix FPD-A - Obstacles to the planning process. If the current supply source is adequate for forecasted water use, final plan document section X shall contain a brief statement of adequacy and the consequent lack of need to assemble information for that section.

Section 4. Plan Initiation and Cabinet Assistance. (1) Planning unit: geographic area of plan. A county may develop a water supply plan independently or it may enter into a written agreement to join with other counties to form a regional water supply planning unit. A multicounty plan may or may not entail regionalization or interconnection between water supplier systems.

(a) If a county has fewer than seven (7) cities, then the decision to join with other counties shall be supported by a two-thirds (2/3) majority of representatives of water suppliers in the county and each city in the county that is not a water supplier.

(b) If a county has at least seven (7) but no more than ten (10) cities, then the decision to join with other counties shall be supported by a two-thirds (2/3) majority of representatives of water suppliers in the county and representatives of the first, second, third, and fourth class cities in the county that are not water suppliers.

(c) If a county has more than ten (10) cities, then the decision to join with other counties must be supported by a two-thirds (2/3) majority of representatives of water suppliers in the county and representatives of the first, second, and third class cities in the county that are not water suppliers.

(2) Planning council. A planning council shall be formed to oversee the planning process.

(a) Membership requirements. The planning council shall consist, at least, of representatives from the following categories in the planning unit:

1. Each county judge-executive or mayor of an urban-county government, or his or her authorized representative;

2. One (1) representative of each water supplier that provides water to persons in the planning unit;

3. One (1) representative of each water supply distributor serving persons in the planning unit, unless that water supply distributor chooses to be represented by another member of the planning council;

4. One (1) representative of semipublic water suppliers, appointed by the county judge-executive or mayor of an urban-county government, or one (1) representative from a local health department in the planning unit; and

5. One (1) representative of each first, second, or third class city that is not a water supplier or distributor, unless that city chooses to be represented by another member of the planning council.

6. One (1) representative of the fourth class cities that are not water suppliers or water supply distributors, appointed by the county judge/executive.

7. One (1) representative of fifth and sixth class cities appointed by the county judge/executive.

(b) Membership options. One (1) planning council member may represent more than one (1) entity. At any planning council meeting, a majority of the required members of the planning council, listed in paragraph (a) of this subsection, may also choose to appoint other planning council members. The cabinet may require additional planning council members so that the planning council fully represents the planning unit or if the planning unit has unique social or economic characteristics.

(c) First planning council meeting. The entities listed in paragraph (a) of this subsection shall be notified of the first meeting of the planning council at least two (2) weeks prior to the meeting.

(d) Planning council chair. The planning council chair shall be elected by a majority of the planning council members.

(e) Quorum. The planning council shall determine what constitutes a quorum.

(3) Optional water supply advisory group. A planning council may

create one (1) or more water supply advisory groups to assist in the planning process.

(4) Planning representative. The planning council shall select a planning representative who shall be responsible for conducting the water supply planning process and creating water supply plan documents.

(5) Cabinet assistance. At the request of one (1) or more counties on a planning council, the cabinet may award water supply planning grants to a county or planning representative. The cabinet shall provide access to records and data collected by the cabinet, in accordance with the Kentucky Open Records Act. The cabinet shall also make every reasonable effort, as resources allow, to provide special data reports and make staff available for consultation and technical support to planning councils and planning representatives.

(6) Documentation of plan initiation.

(a) Section I of the plan formulation document shall describe how the county (or counties), cities, and water suppliers reached agreement as to the composition of the planning unit. Section II of the plan formulation document shall describe how a planning representative was selected.

(b) Section I of the final plan document shall include a description of the planning unit and a planning unit map that shows planning unit boundaries, county boundaries, hydrologic unit boundaries of watersheds, county seats, and first through fourth class cities. Section II of the final plan document shall include a list of planning council members with their affiliations and identify any designated planning council member who declines to serve on the planning council or any designated planning council member that has not responded to invitations to participate in the planning process. Section II of the final plan document shall identify the planning representative and the individuals who will prepare the plan under the direction of the planning representative. If a county advisory group has been formed, section II of the final plan document shall also list the members of that group.

Section 5. Planning Council Duties and Procedures. After a planning representative has been designated, the planning council shall continue to oversee the planning process. This process shall use principles of hydrologic science, effective environmental protection, efficient water management and conservation, and democratic governance.

(1) Public notice and public participation. The planning council shall solicit public input for planning decisions.

(a) Council meetings. Each meeting of a planning council shall allow time to discuss progress of the planning process and obtain public input. The planning council shall notify local broadcast and print media of the meetings and request that the media make a public announcement of the time, place and purpose of the meeting. The planning council shall keep minutes of its meetings and a list of attendees and other interested persons. These shall be available to the public on request and shall be included as Appendix PFD-B of the plan formulation document.

(b) Public notice shall include the following:

1. A public notice shall be placed in the newspaper of greatest circulation in the area. The public notice shall be at least three (3) column inches in size, and shall be large enough that all information contained therein is easily readable. A copy of each public notice shall be placed in section III of the plan formulation document.

2. A letter shall be mailed to each water watch group in the planning unit. A sample letter and a list of recipients shall be placed in section III of the plan formulation document.

3. Public notice for a public meeting shall include the date, time, and location of the meeting; the mailing address and deadline for providing written comment; the purpose of the meeting; a brief statement of the purpose of the plan and planning procedures; and any other information to ensure that the public is aware of the nature of the meeting and the planning process.

(2) Conflict resolution.

(a) Planning council members shall attempt to reach consensus on planning goals, objectives, and preferred supply, emergency, and implementation alternatives. The planning council may select mediation as a method to achieve an acceptable solution. The cabinet may provide mediation assistance if requested by planning council members.

(b) If planning council members are unable to reach consensus concerning any aspect of the planning process, a description of the conflict shall be included in section III of the final plan document. This section shall also describe conflicts or potential conflicts between the water supply plan and existing plans of local units of government, water suppliers, or water supply distributors and conflicts or potential conflicts between the water supply plan and existing or proposed plans of surrounding counties. Each description of a conflict shall identify the units of government or water suppliers or distributors involved in the conflict. Each description shall also identify the provisions or omissions causing the conflict and the nature of the conflict, including objections and the type of authority applicable.

(3) Notification. The planning council shall comply with the requirements in this subsection within fourteen (14) days of the first meeting of the planning council. If phase two planning activities for any county within the planning unit are begun two (2) years or more after the notifications required by this subsection, the planning council shall repeat the notifications required by this subsection before beginning phase two planning activities. If a water supply plan has been prepared for the county within five (5) years of the base year, the cabinet may allow variances in the notification process.

(a) Notification to adjacent counties. The planning council shall send written notification to mayors, county judge-executives, and water suppliers in counties adjacent to the planning unit of the intent to develop a water supply plan.

(b) Notification to the public. The planning council shall give public notice of the intent to develop a water supply plan. Public notice shall describe the planning unit and planning council membership. Public notice shall state that a water supply plan is being developed, that public attendance at council meetings is welcomed, and that a meeting concerning planning goals and a meeting concerning plan alternatives will be publicly announced. Further, it shall announce the date, time, and location of the next council meeting or provide a telephone number at which such information shall be available.

(c) Notification to local governments and water suppliers. The planning council shall send written notification of the intent to develop a water supply plan to the following: all local units of government within the planning unit; water suppliers that provide water for use in the planning unit; and local units of government that use the same source of water as any water supplier in the planning unit. The letter of notification to local governments and water suppliers shall request the following information:

1. A copy of any existing water or related plans;

2. A statement of any current or potential conflicts, problems or opportunities that the local units or water systems want the planning process to examine or address, including water use rights, access and conservation; and

3. A description of expected changes in or around the planning unit that may alter current growth trends, including existing ordinances and planning goals.

(d) Notification to the cabinet. The planning council shall notify the cabinet of the intent to develop a water supply plan. Notification to the cabinet shall include a list of members of the planning council, their affiliations, and a list of counties included in the planning unit. The notification shall identify any designated planning council member who declines to serve on the planning council or any designated planning council member that has not responded to invitations to participate in the planning process. The notification shall state whether counties in the planning unit will apply for a planning grant from the cabinet. The cabinet shall notify the planning council of data that is readily available from the cabinet, state universities or other state or federal agencies.

(e) Notification to the Kentucky River Authority. If any portion of any county in a planning unit is located within the watershed of the Kentucky River, the planning council shall notify the Kentucky River Authority of the intent to develop a water supply plan. The letter of notification shall ask the authority to provide information concerning

any planning objectives or activities that might impact the water supply planning process of the planning unit.

(f) Documentation of notifications. Section III of the plan formulation document shall include a copy of each public notice and notification sent to adjacent counties and to local units of government and water suppliers, a list of persons to whom these documents were sent, and a description of information received in response to notification sent to local governments and water suppliers. If any portion of any county in a planning unit is located within the watershed of the Kentucky River, section III of the plan formulation document shall include a copy of the notification sent to the Kentucky River Authority and a description of the response from the authority.

(4) Planning goals and objectives.

(a) The planning council shall consider the following objectives for the planning process:

1. Use of conservation to the maximum extent practical;

2. Choice of supply dependability. In addition to the level of water supply that meets minimum standards described in Section 6(8) of this administrative regulation, a planning council may plan to provide a continuous level of supply under all conditions or plan to rely on consumer cooperation to maintain a supply buffer, allowing a supplier to provide less than a continuous level of supply;

3. Compatibility with existing plans, or to offer recommendations to alter those plans;

4. Preservation and use of natural water storage and retention systems, whenever cost and data constraints permit;

5. Protection and enhancement of the overall quality of the environment;

6. Cost effectiveness; and

7. Social and political acceptability, and community cohesion.

(b) The planning council shall assess existing plans and public input regarding planning objectives and existing and forthcoming issues to be addressed in the planning process. The planning council shall identify any planning objectives specific to the planning unit. The planning council shall conduct at least one (1) public meeting to obtain public input concerning objectives and issues affecting the planning process. The planning council shall conduct the public meeting concerning objectives and issues early in the planning process, prior to determining the objectives of the planning process.

(c) Documentation. Section III of the final plan document shall describe the planning objectives and summarize the process used to determine these objectives. Section IV of the plan formulation document shall fully describe the objective-setting process.

(5) Water supply alternatives and emergency response plans. The planning council shall conduct at least one (1) public meeting to obtain public input concerning supply protection recommendations and emergency plans. If the existing sources of supply are not adequate to meet forecasted needs for twenty (20) years after the base year, the public meeting shall be conducted as part of the process for selecting a water supply alternative, to obtain public input concerning plan alternatives, implementation strategies, and any reevaluation of goals and objectives. The planning council shall review water supply plan alternatives and implementation strategies; consider public input, reevaluate goals and objectives; and select alternatives to be included in the final plan document.

(6) Water supply plan document approval. Section XIV of the final plan document shall include the signature of each member of the planning council who has participated in the planning process, signifying that the document accurately reflects the planning effort. If any member disagrees with the chosen plan alternative, it is the responsibility of that member to identify objections in a minority report in Section III of the final plan document, as described in subsection (2) of this section. The cabinet may approve a final plan document that is not signed by each planning council member if the planning council justifies the absence of each missing signature.

(7) Plan implementation.

(a) Upon completion and acceptance of the plan by the cabinet, the planning council shall act as an oversight or advisory group to plan implementation. The planning council shall reconvene at least annually and update the plan at least every five (5) years. A tentative date and location for reconvening the planning council shall be placed in section XIII of the final plan document.

(b) If any portion of any county in a planning unit is located within the watershed of the Kentucky River, the planning council shall address the consistency of the plan with administrative regulations promulgated by the Kentucky River Authority and with the Kentucky River Authority's water resource plan at the annual meeting.

Section 6. Responsibilities of the Planning Representative. (1) Workplan. The planning representative shall develop a workplan for council approval and submission to the cabinet. Workplans may be separately developed for phase one and phase two planning activities. The workplan shall define objectives and deadlines for the planning process in accordance with the objectives established by the planning council, KRS 151.110 through KRS 151.116, and this administrative regulation. The rate of plan development for specific counties within multicounty units may vary. A copy of the workplan shall be placed in section IV of the plan formulation document. The workplan shall identify the following:

(a) The planning representative;

(b) Overall goals, proposed procedures, and quarterly objectives;

(c) A planning budget;

(d) Sources of funds for the planning effort, including in-kind services, if any; and

(e) Any proposed deviations from the standard procedures required in this section and Sections 3 and 5 of this administrative regulation. Deviations from the standard procedures in this administrative regulation are allowed only with prior approval from the cabinet.

(2) Information review. The planning representative shall assemble and review information collected through the notification process described in Section 5(3)(c) and (4) of this administrative regulation. The planning representative shall review any plans and studies prepared within five (5) years previous to the base year by city, county, regional, state, and federal agencies that are related to water, sewer, waste management, or commercial and industrial growth. Existing water or water-related plans shall be described in section III of the final plan document.

(3) Obstacles to the planning process. The planning representative shall describe obstacles to the planning process that affect the potential accuracy, effectiveness, or implementation of the planning effort. These obstacles may include lack of equipment; insufficient legal, fiscal or other resources necessary to implement data collection; inadequate authority or responsibility at any governmental or organizational level; or lack of available information. Appendix FPD-A of the final plan document shall identify and describe obstacles to the planning process, state the relevance of the incomplete or unavailable information to the planning process, and make recommendations to remove the obstacle for future planning efforts.

(4) County base map.

(a) The following information shall be located and identified on a map of each county in the planning unit: two (2) tick marks on both the right and left margins and two (2) along both the bottom and the top, each showing latitude and longitude; county boundary; state, federal, and significant county roads; hydrologic unit boundaries of watersheds; rivers, creeks, and other tributaries within the county or shared with contiguous counties; county seat; names and jurisdictional boundaries of first through fourth class cities; significant springs; water supply reservoirs; and dams. Maps of counties that have less than ten (10) fifth class cities shall show the name and location of these cities.

(b) County base maps shall be used as a base for each map required in this administrative regulation, with the exception of the planning unit map and maps generated by state or federal agencies, or as specifically approved by the cabinet. The scale of county base maps and maps created using the county base map shall be between 1:24,000 and 1:90,000. The map document from which county base maps are compiled shall originally be a map at a scale of 1:90,000 or larger. Scales for county base maps in a planning unit shall be identical. Maps required in this administrative regulation may be created as overlays to county base maps. The plan formulation document and the final plan document may include reduced copies

of maps in addition to the maps created at the scale required in this paragraph.

(c) The county base map shall be placed in section V of the plan formulation document and section IV of the final plan document.

(5) Water use assessment. The planning representative shall assess water use for the base year. The planning representative shall use sources of data specified in this subsection unless the planning representative establishes that other information is more accurate or that the required information is not available. If a comprehensive water supply study has been completed within five (5) years of the base year by the U.S. Army Corps of Engineers for any area of the planning unit, the planning representative shall use the information developed in those studies, with corrections if data varies significantly from the latest U.S. census. Information developed in other water supply studies that have been completed within five (5) years of the base year may also be used, with corrections based on the latest U.S. census data, with the approval of the cabinet.

(a) Water suppliers and distributors.

1. Amounts of water used by water suppliers and distributors shall be determined for the base year. Usage shall be entered into a computerized database, using software described in subsection (7)(a) of this section. Water supplier and distributor usage shall also be determined for a historical year, four (4) to six (6) years prior to the base year. This information shall be used to calibrate the forecasting software output. Usage data shall be disaggregated by usage sector.

2. Amounts of water used by water suppliers shall be determined from reports of metered water withdrawals, unless the planning representative justifies to the cabinet the use of other figures.

3. Amounts of water used by water supply distributors shall be determined from meter readings.

4. Water losses shall be calculated from the difference between metered readings of water purchased or withdrawn and water sold or otherwise accounted for.

5. Population figures used shall be based on the latest U.S. census and projections made by the Urban Research Institute at the University of Louisville. These figures may be adjusted for the planning unit, with cabinet approval, if the planning representative justifies the need to do so.

(b) Water use for withdrawal permittees other than water suppliers or distributors shall be determined from water withdrawal permit records available from the cabinet. Water withdrawals in violation of the water withdrawal permitting program shall also be determined.

(c) Agricultural water use from each water source shall be estimated.

(d) Other permit-exempt water withdrawals, including water used for fire protection at rates less than 10,000 gallons per day and for domestic uses, shall be estimated. Permit-exempt water withdrawals shall be described by source classification and usage.

(e) Documentation of water use assessment. Written records shall be kept regarding the sources of any water use data. The sources of data and water use information compiled pursuant to this subsection shall be fully described in section VI of the plan formulation document and summarized in section V of the final plan document, unless otherwise specified.

1. The planning representative shall create a water use map of each county in the planning unit. The water use map shall identify water supplier intakes, water supplier wells, and permitted water withdrawal intakes or wells that do not serve water suppliers. The map shall identify the source type and use category of each permitted site. The map shall also show water withdrawal sites for entities that withdraw more than 10,000 gallons of water per day and are exempt from or in violation of the water withdrawal permitting requirements of KRS 151.140 through 151.170 and 401 KAR 4:010, and identify the source classification and use category of each permit-exempt user.

2. The planning representative shall create one (1) or more diagrams showing disaggregated use of water that was withdrawn by each water supplier, including the categories of domestic, industrial, commercial, municipal, and lost or unaccounted for water use during the base year. Disaggregated demand figures shall be listed with respect to the source of supply, unless these sources are interconnected.

3. The planning representative shall describe water use conflicts or potential conflicts, including those caused by groundwater pumping that affects other wells or surface water or by other existing or potential competing users.

(6) Water supplier source assessment.

(a) Data collection constraints. The planning representative shall forecast the amount of available water, under normal and drought conditions, from each source being used by water suppliers in the planning unit during the base year. Methods for measuring water supply yield shall be preapproved or specified by the cabinet. The cabinet may approve deviations from the requirements in this subsection, if the planning representative demonstrates significant fiscal or other constraints. If a measure of available water is not accessible to each water supplier on a monthly basis, the planning representative shall estimate the cost of attaining those measurements. Data collection constraints shall be described in Appendix FPD-A of the final plan document.

(b) The planning representative shall summarize the soils and geologic characteristics of the planning unit. The planning representative shall obtain one (1) or more maps showing general characteristics of soils in the planning unit. These shall be included, as attachments if necessary, in section X of the plan formulation document.

(c) The planning representative shall calculate the amount of available water at the site of any water supplier intake on a stream. To determine water availability under normal conditions, the planning representative shall apply water withdrawal permitting program criteria to calculated average flow during the month of lowest flow and the seven (7) day, ten (10) year low flow. To simulate drought conditions, the planning representative shall calculate the seven (7) day, twenty (20) year low flow during the month of lowest flow. Data from the U.S. Geological Survey shall be used to make flow calculations unless the planning representative shows the cabinet that other data will provide more accurate information. If the watershed of the intake site extends beyond contiguous counties, the planning representative shall delineate an area as a recommended area appropriate for watershed protection.

(d) The planning representative shall calculate the available amount of water at the site of any water supplier intake in a water supply reservoir during normal and drought conditions. The planning representative shall also calculate streamflow into each water supply reservoir that stores runoff from a contributing watershed that drains more than thirty (30) square miles. Streamflow calculations shall be made as described in paragraph (c) of this subsection. If the watershed of the intake site extends beyond contiguous counties, the planning representative shall delineate an area as a recommended area appropriate for watershed protection.

(e) The planning representative shall calculate safe yield, specific capacity, zone of contribution and zone of influence for each water supplier well. The planning representative shall delineate an area as a recommended area appropriate for wellhead protection.

(f) The planning representative shall calculate available amount of water at the site of any water supplier intake at or below a spring. Flow calculations shall be made as described in paragraph (c) of this subsection. The planning representative shall delineate a recharge protection area that includes the recharge area of the spring.

(g) Documentation of source assessment. The planning representative shall prepare a water supplier source map of each county in the planning unit. The source map shall show contributing watersheds and known recharge areas for each water supplier's source of water, such as known zone of influence for a well and recharge area for a spring. The water supplier source map shall also show recommended protection areas. Section VII of the plan formulation document shall show all calculations made pursuant to this subsection. Section VI of the final plan document shall include a chart showing the available yield of streams, reservoirs, springs, and water wells used by water suppliers. If the planning representative identifies constraints on water use related to quality or quantity, these shall be discussed in section VI of the final plan document.

(7) Water use forecast and assessment of treatment and total distribution capacity. Water supply demands shall be forecast for dates five (5), ten (10), fifteen (15) and twenty (20) years after the

base year. The planning representative may develop as many as three (3) water use forecasts, each one related to variations in usage rates created by regulatory and nonregulatory measures to reduce the amount of water created by specific water uses. If a comprehensive water supply study has been completed by the U.S. Army Corps of Engineers within five (5) years of the base year for any area of the planning unit, the planning representative shall use the information developed in those studies, with corrections if data vary significantly from the latest U.S. census. Information developed in other water supply studies that have been completed within five (5) years of the base year may also be used, with corrections based on the latest U.S. census data, with the approval of the cabinet.

(a) Water suppliers.

1. Demand for water from water suppliers shall be forecast using computerized software that enable water use projections that are disaggregated according to type of usage, including type of residential unit. Planning representatives may use IWR-MAIN Water Use Forecasting System computer software produced by the U.S. Army Corps of Engineers Institute for Water Resources or similar software. Section VI of the plan formulation document shall include a listing of assumptions, data sources, and extrapolations used in forecasting water demand.

2. The planning representative shall identify and contact any single user that purchases twenty (20) percent or more of the water produced by any water supplier and review all available plans such users have that would affect future water use. These users, their plans and the impact of these plans on forecasted water use shall be summarized in section V of the final plan document.

(b) The planning representative shall forecast average daily water use for each type of water use described in subsection (5) of this section. Diagrams showing disaggregated, forecasted use of water shall be placed in section V of the final plan document.

(c) Assessment of treatment and total distribution capacity. Information related to assessment of treatment and total distribution capacity shall be placed in section V of the final plan document.

1. The planning representative shall determine existing treatment and total distribution capacity of the water supplier. The planning representative shall create one (1) or more graphs comparing treatment and total distribution capacity, any planned expansion of treatment or total distribution capacity, and forecasted water use.

2. The planning representative shall determine if vertical elevation of an intake or capacity of a pump limits access to available water and describe access limitations.

3. For water suppliers whose water losses are greater than fifteen (15) percent, the planning representative shall estimate the cost of finding and repairing leaks. If water use is not metered, the planning representative shall estimate the cost of meter installation.

4. The planning representative shall prepare a service area map of each county in the planning unit showing the existing jurisdictional and service area boundaries of water suppliers and distributors.

5. The planning representative shall create a service area expansion map for each county in the planning unit showing existing expansion plans of water suppliers and distributors, including the proposed access sites of new sources of water. The service area expansion map shall be accompanied by an explanation that identifies projected dates of the expansions.

(8) Supply adequacy assessment. In order to determine water supply adequacy, the planning representative shall compare water source availability and water demands for the base year and forecasted demand for dates five (5), ten (10), fifteen (15), and twenty (20) years afterward, for each water supplier or source. By applying adequacy standards described in this subsection to each five (5) year increment, the planning representative shall identify the apparent date at which the current supply will no longer be adequate. Criteria described in this subsection shall be adjusted if a water supplier withdraws water from more than one (1) source of water. The cabinet may approve equivalent adequacy standards if the planning representative demonstrates the necessity to do so. Calculations for determining supply adequacy and a description of supply adequacy shall be documented in section VIII of the plan formulation document and summarized in section VII of the final plan document. If the existing source of supply is not adequate to meet forecasted needs for twenty (20) years after the base year, the planning representative shall inventory the water resources of the planning unit according to subsection (10) of this section. If the existing source of supply is adequate to meet forecasted needs for twenty (20) years from the base year, the planning representative shall evaluate and describe the security of access to supply for that period in section IX of the final plan document. Whether existing supply is adequate for twenty (20) years from the base year or not, the planning representative shall identify potential sources of water to use in case of contamination or similar emergency as described in subsection (13)(b) of this section.

(a) A stream shall be considered an inadequate source of water supply if the seven (7) day, ten (10) year low flow equals zero or if average rate of water use is more than eighty-five (85) percent of the available water under normal conditions.

(b) A water supply reservoir that stores runoff from a contributing watershed area of ten (10) square miles or less shall be considered an inadequate source of supply if the available volume at normal pool provides less than 200 days of supply at the average rate of water use.

(c) A water supply reservoir that stores runoff from a contributing watershed that drains between ten (10) and thirty (30) square miles shall be considered inadequate if the available volume at normal pool provides less than 100 days of supply at the average rate of water use.

(d) The following chart shall be used to determine the adequacy of a water supply reservoir that stores runoff from a contributing watershed that drains more than thirty (30) square miles.

	Percent of Water Used[1]		
Days[2]	0 - 70	71 - 85	86 - 100
<45	inadequate	inadequate	inadequate
45 - 60		inadequate	inadequate
61 - 100			inadequate

[1]"Percent of water used" means average rate of water use divided by the amount of available water in the inflowing stream under normal conditions, times 100.

[2]"Days" means days of supply at the average rate of water use, stored in the water supply reservoir.

(e) A water supply well or well field shall be considered inadequate if the average rate of water use requires water withdrawal at a rate greater than the safe yield of the aquifer.

(f) A water supply spring shall be considered inadequate if the average rate of water use is more than eighty-five (85) percent of the available water under normal conditions.

(g) In addition to the minimum standards in this subsection, the assessment of supply adequacy shall consider the following:

1. Instream uses such as recreation and maintenance of both game and nongame aquatic life;

2. Water conservation and demand management practices for resolving any adequacy deficits;

3. The quantity impacts of significant water withdrawals in the watershed or recharge area of the water supplier source;

4. The downstream or down-gradient impacts of water supplier withdrawals on other users; and

5. Competing uses of the surface waters or aquifers from which each water supplier's water is being taken.

(9) Supply protection. The planning representative shall identify and evaluate the risk of water supply degradation, contamination, or depletion resulting from activities in the watershed or recharge area in the planning unit. The risk of water supply degradation, contamination, or depletion shall be documented in section IX of the plan formulation document and summarized in section VIII of the final plan document.

(a) The planning representative shall identify any potential source of contamination within the watershed of a surface water supplier source or within the recharge area of a water supplier spring, or the wellhead protection area of a water supplier well or well field. The planning representative shall develop a tabular display of the degree

of hazard posed by potential contaminants of a water supplier source. The planning representative shall create a map of potential sources of contamination. The map and the tabular display shall be placed in section VIII of the final plan document. Sources of potential contamination shall include, at a minimum:

1. Areas possessing known or potential sources of nonpoint source pollution;

2. Discharges permitted or tank batteries registered under 401 KAR 5:050 through 401 KAR 5:090;

3. Landfills, hazardous waste sites, and large, unpermitted or abandoned garbage dumps;

4. Active or inactive underground storage tank facilities that are registered with the Division of Waste Management;

5. Wells used for underground injection;

6. Facilities that store, utilize, or produce hazardous materials; and

7. Lagoon or surface impoundments or stock piles used to store or produce materials which could potentially contaminate water.

(b) The planning representative shall relate soils and geologic characteristics of the planning unit to the risks of water supply contamination, degradation, or depletion in section VIII of the final plan document.

(c) The planning representative shall describe local, existing regulatory and nonregulatory measures that protect the quality and quantity of the water supplier's sources in the planning unit in section VIII of the final plan document. Copies of local, existing regulatory measures shall be included in section IX of the plan formulation document.

(d) The planning representative shall formulate recommendations for local regulatory and nonregulatory measures to protect the quality and quantity of the water supplier's sources through watershed, recharge area, or wellhead protection programs. Local regulations and recommendations shall be described in section VIII of the final plan document.

(10) Water resources inventory. If the existing source of supply is not adequate to meet forecasted needs for twenty (20) years after the base year, the planning representative shall inventory the water resources of the planning unit. If inadequate, existing sources affect less than forty (40) percent of the counties in the planning unit, the cabinet may require an inventory or specific counties only.

(a) The planning representative shall prepare one (1) or more water resources maps of each county in the planning unit. Water resources maps shall be placed in section IX of the final plan document. Maps produced by federal or state agencies may be substituted for one (1) or more features and appended to section IX of the final plan document. Water resources maps shall show the following features:

1. The location of federally authorized or other significant rain and streamflow gauges;

2. Wetlands delineated by the U.S. Fish and Wildlife Service, under the National Wetlands Inventory program, and hydric soils delineated by the U.S. Soil Conservation Service;

3. Outstanding resource waters and coldwater aquatic habitat, as designated under 401 KAR 5:026 through 401 KAR 5:031, Kentucky water quality standards;

4. Generalized land use;

5. Active and abandoned mine works in which water is stored or from which water is discharged, if map information is available;

6. Geologic conditions, such as karst areas, that may cause unique water quantity or quality problems, if this information is available;

7. Areas of cultural and/or archeological significance that may affect water resources of the planning unit;

8. Aquifers and groundwater recharge and discharge areas, if maps are available; and

9. Significant water-oriented recreational resources.

(b) The following information, if available, shall be compiled in paragraph or chart form, and placed in section X of the plan formulation document:

1. Historical streamflow data;

2. Average monthly precipitation from historical data;

3. State and federal requirements and policies affecting water availability;

4. Construction data, usage data and average monthly static water levels, where readily available, of wells used at average rates of more than 10,000 gallons per day;

5. Generalized quality of water;

6. Description of groundwater aquifers, including confining layers, flow characteristics, and predicted maximum yield; and

7. Ownership of dams or water body access rights to any reservoirs or impoundments.

(c) The planning representative shall acquire current U.S. Geological Survey topographic maps of the planning unit, scale 1:24,000, and append these to section IX of the final plan document.

(d) The planning representative shall assemble or identify all readily available printed information related to water resources in the planning unit and describe this information in section X of the plan formulation document.

(e) The planning representative shall place a summary of the available information that relates to the quality of water in the county in section IX of the final plan document.

(11) Water supply alternatives. If the existing sources of supply are not adequate to meet forecasted needs for twenty (20) years after the base year, the planning representative shall evaluate water supply alternatives related to each water supplier that does not have adequate supply. These evaluations shall be fully documented in section XI of the plan formulation document, summarized in section X of the final plan document, and presented to the planning council. Maps shall be used if their existence will clarify alternatives.

(a) The planning representative shall examine each alternative that could potentially provide adequate water for normal supply provisions. The planning representative shall clarify these alternatives for the planning council and the public, shall fully explain each alternative in the plan formulation document, and shall summarize each alternative in the final plan document. The planning representative shall clarify why other alternatives were deemed inadequate. Documentation and presentations to the planning council and the public shall clarify at least the factors listed below:

1. The degree to which the alternative contributes to the planning objectives;

2. Use of conservation and demand options, including legal, motivational, and technological water use efficiency measures;

3. The level of supply dependability;

4. Consistency with existing plans;

5. Environmental impacts;

6. The feasibility of providing adequate pumpage and pressure to supply water from the alternative sources;

7. Costs associated with developing the alternative source;

8. Social, political, and economic impacts;

9. Potential sources of contamination of new sources of water;

10. Variations of water quality treatment capabilities or techniques required due to the characteristics of new sources of water;

11. The impacts and potential for conflicts with water uses that are not dependent on water suppliers, including private drinking water wells;

12. Supply protection; and

13. Changes in wastewater treatment and disposal systems required as a result of water supplier system expansion.

(b) If regionalization is considered a feasible alternative, the planning representative shall identify and evaluate the factors related to supply dependability, contamination and other risks, a recommended management structure for the regional unit, and economic cost to individuals, water suppliers, and governments.

(c) If interconnection between existing water suppliers is a specified alternative, the plan shall provide reasonable assurance that the resulting demand for water is included in any water use forecast performed in conjunction with water supply planning for the proposed interconnected water supply system.

(d) If capital improvement projects are proposed to implement the plan, the projects shall be described in the plan, including: design components; storage capacity; location alternatives; proposed construction schedule; expected federal, state and local costs; types

of financing; and sources of local financing (subcounty, countywide, or multicounty).

(e) If any portion of any county in a planning unit is located within the watershed of the Kentucky River, the planning representative shall identify administrative regulations promulgated by the Kentucky River Authority and portions of the Kentucky River Authority's water resource plan that are relevant to the planning unit.

(12) Primary alternatives. If any existing source of supply is not adequate to meet forecasted needs for twenty (20) years after the base year, the planning representative shall further evaluate one (1) or more specific alternative if the planning grant or other funds allow. Section XI of the final plan document shall include a detailed description of the selected alternative. A map shall be created if it will clarify the primary alternative or alternatives.

(13) Emergency plans. The planning representative shall prepare water shortage response and supply contamination plans, which shall be documented in section XIII of the plan formulation document and summarized in section XII of the final plan document.

(a) Water shortage response plans. If the water supply availability inventory indicates that water availability for any supplier will be less than adequate during drought conditions, the planning representative shall outline contingency plans for managing water demands and accessing alternate sources of water.

1. Water shortage response plans shall be based on the water shortage response plan available from the cabinet, and shall include: identification of various levels of response; triggers that shall initiate these responses; actions and responses applicable to local government and the public for each response level; and penalties as necessary to ensure that the required actions are implemented.

2. Water shortage response plans shall describe the methods to be used by any affected water supplier to notify the public of the emergency and to provide the public with the information needed to understand the seriousness of the situation and to know what shall be done to properly respond to the situation.

3. Water shortage response plans shall identify sources of water for use during water supply emergencies and shall describe plans for receiving prior approvals, achieving access to the water, and adequately treating and distributing the water.

4. Water shortage response plans shall include a description of provisions made for activities to be performed by the Department for Military Affairs or the cabinet, if the emergency plan calls for any actions on the part of either agency. The discussion of such provisions shall include the types of activities to be performed by the Department of Military Affairs or the cabinet, at what level of water shortage these actions are to take place, approximately what it will cost the local community to reimburse the Department of Military Affairs' or the cabinet's expense, and documentation of agreement and approval from the appropriate agency.

5. Water shortage response plans shall describe any legal arrangements that are recommended or would be required to implement or enforce the emergency plans, including at least Public Service Commission approval when applicable.

6. Water shortage response plans shall identify who within the local government shall enforce the emergency provisions in the plan. The plan shall demonstrate that the local government has the authority to enforce these provisions.

(b) Supply contamination response plans. The planning representative shall develop contingency plans to be implemented if a water supply is contaminated or is threatened by contamination.

1. Supply contamination response plans shall describe methods of notifying state and federal agencies of the emergency.

2. Supply contamination response plans shall describe methods to be used by any affected water supplier to notify the public of the emergency and to provide the public with the information needed to understand the seriousness of the situation and to know what shall be done to properly respond to the situation.

3. Supply contamination response plans shall recommend sources of water for use during both short-term and long-term emergencies due to supply contamination and describe plans for receiving prior approvals, achieving access to the water, and adequately treating and distributing the water. Alternate sources of water for short-term use shall not be required to meet the adequacy standards described in subsection (8) of this section.

4. The planning representative shall assess water supplier distribution system capability to cope with contamination.

5. For water supply wells, the planning representative shall evaluate the effectiveness of existing monitoring wells.

(14) Implementation plan. The planning representative shall determine the steps necessary to implement the water supply plan and describe these in section XIII of the final plan document.

(a) Plans for implementation shall include methods for updating and amending the plan document and addressing current or future potential conflicts.

(b) Implementation plans shall contain a timetable for initiation and completion of tasks and shall identify parties responsible for completing tasks.

(c) The planning representative shall create a chart showing the anticipated costs of implementation and describe proposed methods of financing, including reasonable estimates of the interest rates on loans and the per capita cost to water users.

(d) The planning representative shall recommend procedures to coordinate actions of local government, and other agencies that impact development decisions within the planning unit, with the water supply plan.

(e) The implementation plan shall describe existing authority to implement the plan and identify any legal changes or agreements that are necessary to implement the plan. If the planning council makes any written agreement towards the implementation of the plan or a portion of the plan, section XIII of the final plan document shall describe the nature of the agreement, the parties involved, and when the implementation will happen. Copies of any written agreement or resolution, including agreements to expand treatment facilities or use new water sources, shall be included in section XIV of the plan formulation document.

Section 7. Grant Provisions and Plan Approval. Water supply planning grants provided by the cabinet shall be used only to create water supply plans, and shall not be used for implementing water supply plans or to construct water supply facilities or distribution systems. Planning grants may be provided separately or jointly for phase one and phase two planning activities.

(1) Funding application.

(a) A county or planning representative may apply for a planning grant by submitting a form entitled "Water Supply Planning Financial Assistance Application," dated March, 1991 and hereby incorporated by reference. Copies of this form may be reviewed or obtained from cabinet offices at 18 Reilly Road, Frankfort, Kentucky, between 8 a.m. and 4:30 p.m. from Monday through Friday, except holidays.

(b) The application period for requesting a planning grant for state fiscal year 1991 and 1992 funds shall be from the effective date of this administrative regulation until ninety (90) days thereafter. The application deadline for subsequent state fiscal years shall be May 1.

(c) The cabinet shall review the application and may require the workplan to be revised if the cost of the water supply plan is unreasonable.

(2) Funding priorities. Water supply planning grants from available funds shall be distributed annually, as available. Unfunded applications from one (1) fiscal year may be carried over to the next fiscal year in their priority order. The cabinet shall prioritize grant applications according to water supply needs and budget constraints, within the following categories of priority:

(a) First priority shall be given to grant applicants from either counties within which lie one (1) or more water suppliers that have demonstrated drought vulnerability or significant conflicts related to shared sources of water supply or source degradation and which serve thirty-five (35) percent of the county population, or counties in which thirty-five (35) percent of the county population is solely dependent on groundwater and are not located adjacent to a stream with average flow of at least 15,000 cubic feet per second or an impoundment of at least 300,000 acre-feet. The cabinet may provide from eighty (80) to 100 percent of planning costs for these counties if they are within multicounty units, and eighty (80) to eighty-five (85)

percent if they are single-county units.

(b) Second priority shall be given for phase one planning activities only, and shall be given to grant applicants from multicounty planning units that include a water supplier with demonstrated drought vulnerability or significant conflicts related to water supply planning. The cabinet may provide these grant applicants eighty (80) to 100 percent of phase one planning costs.

(c) Third priority shall be given for phase one planning activities only, and shall be given to grant applications from counties without demonstrated drought vulnerability or water supply conflicts. The cabinet may provide from eighty (80) to 100 percent of planning costs for counties from multicounty planning units and eighty (80) to eighty-five (85) percent if they are single county units.

(d) Fourth priority shall be given to grant applicants from planning units without demonstrated drought vulnerability or water supply conflicts. The cabinet may provide from eighty (80) to 100 percent of planning costs for these counties if they are from multicounty planning units, and eighty (80) to eighty-five (85) percent if they are single-county planning units.

(3) Local funding contributions.

(a) In-kind services. Local planning fund contributions may include up to fifty (50) percent of costs incurred during planning activities. Written records of these services shall be submitted to the cabinet for approval before matching funds will be released and documented in Appendix PFD-A of the plan formulation document.

1. Activities that shall not be considered as in-kind services include those associated with advertising for, selecting, or administering contractual agreements and those associated with expenses incurred prior to notification to the cabinet.

2. Records shall be maintained to document expenditures of any in-kind services where cost-share financial assistance has been requested for plan development. These records shall be included in Appendix PFD-A of the plan formulation document and available for review when any financial assistance request is made for a partial reimbursement prior to final plan approval.

(b) Expenses incurred prior to grant approval. The cabinet may approve planning expenditures that have been incurred after notification to the cabinet of the intent to develop a water supply plan and prior to grant approval. If approved, these expenses shall be reimbursed at a rate of forty-five (45) percent. No more than seventy (70) percent of total reimbursed expenses shall have been performed prior to grant approval.

(4) Plan approval. The planning council shall submit one (1) copy of the plan formulation document and three (3) copies of the final plan document to the cabinet.

(a) No plan shall be approved by the cabinet unless it meets all the provisions of this administrative regulation and is consistent with state laws and administrative regulations.

(b) The cabinet shall examine the plan for consistency with other water supply plans that have been approved by the cabinet pursuant to this administrative regulation. The cabinet shall notify planning councils of inconsistencies between water supply plans. If any portion of any county in a planning unit is located within the watershed of the Kentucky River, the cabinet shall examine the plan for consistency with administrative regulations promulgated by the Kentucky River Authority and with the Kentucky River Authority's water resource plan and notify the planning council and the Kentucky River Authority of inconsistencies.

(c) The cabinet shall notify the planning council within ninety (90) days if any portion of the plan document is not consistent with statutes or administrative regulations and shall identify any portion of the plan document requiring revision. The planning council shall subsequently submit a revision within 120 days after receiving notice of disapproval. The cabinet may extend the time period allowed to revise a plan document if a planning council submits written justification to postpone the deadline.

(d) Payments. No payments shall be made to a grant recipient for work that does not conform to the approved plan. As part of the grant contractual agreement, the cabinet may specify a schedule for payment based on submittal and approval of work elements. No more than eighty (80) percent of any total grant allotment shall be paid until grant conditions have been met and work completed under the planning grant has been approved by the cabinet. (17 Ky.R. 3054; Am. 3457; 18 Ky.R. 22; 6-26-91.)

401 KAR 4:300. Permit timetables for 401 KAR Chapter 4.

RELATES TO: KRS 146.200 to 146.360, 151.140, 224.10-100, 224.10-220

STATUTORY AUTHORITY: KRS 146.270, 151.125, 224.10-100, 224.10-220

NECESSITY AND FUNCTION: KRS 224.10-220 requires the Natural Resources and Environmental Protection Cabinet to prescribe timetables for the issuance of all permits by the cabinet, except those permits for which a timetable is set out by statute. This administrative regulation establishes timetables for permits that are required by 401 KAR Chapter 4, except those permits whose timetables are set out in KRS 146.290 and 151.260.

Section 1. Permit Timetables. The cabinet shall issue its final decision on a complete permit application within the review times specified in this section. A complete permit application shall contain all the administrative and technical information required by applicable statutes and administrative regulations. (1)(a) Except as provided in Section 2 of this administrative regulation, within thirty (30) calendar days of initial receipt of an application for permits subject to subsections (2) and (4) of this section, the cabinet shall notify the applicant as to whether the application is administratively complete, or if not complete, of the deficiencies which make the application administratively incomplete. A determination that the application is administratively complete shall not mean that the application is complete in every detail, nor shall it mean that any aspect of the application is technically sufficient or approvable.

(b) If the application is determined to be administratively incomplete, the applicant shall correct identified deficiencies within thirty (30) calendar days of the date of notification. If the applicant does not correct the deficiencies within the time frame, the cabinet may return the application.

(c) After the notification that the application is administratively complete, if the cabinet determines that the application is technically deficient, the cabinet shall notify the applicant of deficiencies which make the application technically incomplete or unapprovable. The applicant shall correct the technical deficiencies within thirty (30) calendar days of the notification, or other time as agreed upon by the applicant and cabinet. If the technical deficiencies are not corrected within thirty (30) calendar days or the agreed upon time frame, the cabinet may deny the permit.

(2) For water withdrawal permits required by KRS 151.140, the review time shall be ninety (90) calendar days after receipt of an administratively complete permit application.

(3) For change of use permits and public hearings for a change of use permit, the review times shall be as specified in KRS 146.290.

(4) For utility right of way and other approvals required by KRS 146.290, the review time shall be sixty (60) calendar days after receipt of an administratively complete permit application.

Section 2. Timetable Exclusions. Time periods which shall not be included in the cabinet's consideration of its decision on an application subject to Section 1(2) or (4) of this administrative regulation shall include:

(1) Time waiting for the applicant to respond to a notice of deficiency;

(2) Time during which the permit, application, decision, or related matter is held in litigation, including but not limited to administrative hearings;

(3) Time during which an opportunity for public hearing or public comment period on a draft or proposed permit is given, and time during which a public hearing is scheduled;

(4) Time waiting for federal, state or local agencies to comment on the permit or to respond to written requests from the cabinet for additional information; and

(5) Other times as agreed to by the applicant and the cabinet.

Section 3. Timetable Extensions. (1) If two (2) or more permits for a facility, site, source, construction project, or other entity are required from the cabinet, the cabinet may coordinate the issuance of the permits, establishing different review and action times that shall be accomplished by the cabinet or applicant. If the permits are coordinated, the cabinet shall so notify the applicant and indicate the timetables under which the intermediate and final permit actions shall be accomplished. The established time frame for final action shall not exceed the last date for action that is provided for under applicable statutes and administrative regulations, based on all applications being considered and their filing dates.

(2) The applicant and the cabinet may agree that the time frames or other timetables specified in this administrative regulation may be extended.

Section 4. For permit applications submitted to the division prior to the effective date of this administrative regulation the review times shall be applied as if the application were submitted on the effective date of this administrative regulation. (19 Ky.R. 1941; Am. 2401; eff. 4-28-93.)

Appendix I: Water Shortage Response Plan

property of the city; and no other person shall have any right, title, or interest therein.

(W) The city may refuse service to any person, not presently a customer, when in the opinion of the city the capacity of the facilities will not permit service.

(X) These rules may be changed or amended.

(Y) Complaints may be made to the Manager of the system, whose decision may be appealed to the governing body of the city within ten days; otherwise, the Manager's decision will be final. (Ord. 498, passed 5-24-88) Penalty, see § 51.99

WATER SHORTAGES

§ 51.50 PURPOSE.

The purpose of this subchapter is to provide for the declaration of water supply shortage situations and the implementation of voluntary and mandatory water conservation measures throughout the city, and its water customers, in the event a water shortage is declared. Nothing in this subchapter shall be construed to interfere with common law riparian or statutory water rights. (Ord. 492, passed 4-6-88)

§ 51.51 DEFINITIONS.

For the purpose of this subchapter, the following definitions shall apply unless the context clearly indicates or requires a different meaning.

CUSTOMER. Any person, group of persons, corporation, association, partnership or other entity or organization purchasing or using water for any purpose.

WATER. Any water which has been treated by the City Water Treatment Plant or which has passed through any portion of the city water distribution system. (Ord. 492, passed 4-6-88)

§ 51.52 WATER SHORTAGE ADVISORY.

Whenever the City Council finds that a potential shortage of water is indicated, it shall be empowered to declare by resolution that a water shortage advisory exists, and the water supply and the demand on that supply shall be monitored on a daily basis. In addition, the Mayor or his designated agent is authorized to call upon all water customers to employ voluntary water conservation measures to limit water use and eliminate the waste of water. Any resolution adopted pursuant to this section shall be published in the Owen County News Herald and may be publicized through any other appropriate method for making the resolution known to the public. (Ord. 492, passed 4-6-88)

§ 51.53 WATER SHORTAGE ALERT.

Whenever the City Council finds raw water supplies to be consistently below seasonal averages indicating that the water supply may be inadequate to meet normal needs, the City Council shall be empowered to declare by resolution that a water shortage alert exists. The city shall continue to encourage voluntary water conservation measures as may be set forth in the resolution and it shall further impose a ban on the following water uses for the duration of the shortage:

(A) Any use of water for ornamental purposes, including, but not limited to, fountains, reflecting pools and artificial water falls.

(B) Watering of public or private gardens, lawns, flowers, shrubs or trees.

(C) Watering of parks, golf courses (except greens), playing fields or other recreational areas.

(D) The filling and/or operation of swimming pools except pools used by health care facilities for patient care or rehabilitation or other pools specifically designated as exempt by resolution.

(E) Washing of motor vehicles including, but not limited to, automobiles, trucks, boats and trailers. Commercial car and truck washes shall be exempt from this restriction during a water shortage alert.

(F) Serving water in restaurants, clubs or other eating places, except upon a specific request by a customer.

(Ord. 492, passed 4-6-88) Penalty, see § 51.99

§ 51.54 WATER SHORTAGE EMERGENCY.

Whenever the City Council determines that raw water supplies are below the level necessary to meet the normal needs of the population and that serious shortages exist, it shall be empowered to declare by resolution that a water shortage emergency exists. In the event that a water shortage emergency is declared, all water uses set forth in § 51.53 shall continue to be prohibited and in addition, the following water uses shall be prohibited:

(A) All domestic uses of water shall be prohibited except water necessary to sustain human life and lives of domestic pets and to maintain minimum standards of hygiene and sanitation.

(B) The use of water for any swimming pool.

(C) The washing of any motor vehicle, including commercial car and truck washes.

(D) The use of water in any automated clothes washing or dish washing device, including commercial laundromats.

(E) The watering of golf courses, including golf course greens.

(Ord. 492, passed 4-6-88) Penalty, see § 51.99

§ 51.55 WATER RATIONING.

Whenever the City Council finds a need to provide for the equitable distribution of a critically

limited water supply, and in order to assure that limited water supplies are used to preserve public health and safety, it shall be empowered to declare by resolution the adoption of mandatory water rationing. The water rationing shall be under terms and conditions which are appropriate under the circumstances and shall be set forth specifically in any resolution declaring the rationing of water.
(Ord. 492, passed 4-6-88)

§ 51.56 ONGOING CONDITION UNTIL OFFICIALLY ENDED.

Any declaration of a water shortage advisory, water shortage alert, water shortage emergency or water rationing shall be considered as ongoing until the condition so declared has been officially ended by a resolution of the City Council.
(Ord. 492, passed 4-6-88)

§ 51.57 PUBLICATION OF DECLARATION; EFFECTIVE DATE.

Any declaration made pursuant to this subchapter shall be published in the Owen County News Herald and through any other appropriate method for making the resolutions public. Any declaration made pursuant to this subchapter shall be effective immediately upon passage, however, no criminal penalty shall be imposed upon any person for violating the terms of any declaration hereunder until the resolution authorizing the declaration has been published.
(Ord. 492, passed 4-6-88)

§ 51.58 VIOLATION PROCEDURE.

(A) Any person who violates the provisions of this subchapter or who fails to carry out the duties and responsibilities imposed by this subchapter or who impedes or interferes with any action undertaken or ordered pursuant to this subchapter shall be subject to the following penalties:

(B) A written notice of any violation shall be affixed to the property where the violation occurred. In addition, a copy of the notice may be mailed to the person responsible for the violation. The notice shall describe the violation and shall order that it be corrected or abated immediately or within the specified time as set forth in the notice. If the violation is not abated or corrected immediately or within the time specified, the city may terminate water service to the property or to the violator upon the following procedures:

(1) The city shall notify the customer by mail that due to the violation water services will be discontinued within a specified time and that the violator will have the opportunity to appeal the termination by requesting a hearing before the City Council.

(2) If a hearing is requested by the customer charged with the violation, he or she shall be given full opportunity to be heard.

(3) The City Council shall make findings of fact and shall enter an order determining whether service should continue or be terminated.
(Ord. 492, passed 4-6-88)

§ 51.99 PENALTY.

(A) Whoever violates any provision of §§ 51.01 through 51.33 shall be fined not more than $500 for each offense. Each day's continued violation shall constitute a separate offense.

(B) In addition to or in lieu of the termination of water service, any customer found to be in violation of §§ 51.50 through 51.58 may be prosecuted in the appropriate court of law. Any person so charged and found guilty in the appropriate court of law of violating the provisions of §§ 51.50 through 51.58 shall be subject to a fine of not less than $100 and not more than $500 or confinement in the county jail for a period to be fixed by the court not to exceed 30 days, or both fine and confinement.
(Ord. 492, passed 4-6-88)

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FOR- Owen County, KY

P.S.C. Ky. No. 1

TRI-VILLAGE WATER DISTRICT RATES AND TARIFFS

Original Sheet No. 18

Cancelling P.S.C. Ky. No.

Sheet No.

RULES AND REGULATIONS

WATER CURTAILMENT PLAN

In the event of a water shortage the Tri-Village Water District will follow the Water Shortage Response Plan Ordiance of the Owen County Fiscal Court.

For customers served outside Owen County water service may be terminated for violating provisions of this water curtailment plan and shall be subject to the approved reconnection fee on file with the commission.

PUBLIC SERVICE COMMISSION
OF KENTUCKY
EFFECTIVE

SEP 2[illegible] 1988

PURSUANT TO [illegible].011,
SECTION [illegible]

BY: [illegible]
PUBLIC SERVICE COMMISSION MANAGER

DATE OF ISSUE Sept. (Month) 23 (Day) 88 (Year)

DATE EFFECTIVE Sept. (Month) 23 (Day) 88 (Year)

ISSUED BY Nicholas F. Neal
Name of Officer

Chairman
Title

Owenton, KY 40359
Address

WATER SHORTAGE RESPONSE PLAN

TRI-VILLAGE WATER DISTRICT

ORDINANCE NO. # 33

AN ORDINANCE AUTHORIZING THE DECLARATION OF WATER SHORTAGES; ESTABLISHING PROCEEDURES AND MEASURES FOR THE ESSENTIAL CONSERVATION OF WATER RESOURCES; AUTHORIZING THE ISSUANCE OF ADMINISTRATIVE REGULATIO AND PRESCRIBING CERTAIN PENALTIES.

BE IT ORDAINED BY THE OWEN FISCAL COURT OF OWEN COUNTY, KENTUCKY:

Section 1: The purpose of the ordinance is to provide for the declarati of water supply sortage situations and implementation of voluntary and mandatory water conservation measures throughout the County of Owen and water customers, in the event a water shortage is declared. Nothing in ordinance shall be construed to interfere with common law riparian or statutory water rights.

Section 2: Declaration of a water shortage advisory. Whenever the governing body of the Owen Fiscal Court finds that a potential shortage of water is indicated it shall be empowered to declare by resolution that a water shortage advisory exists, and the water supply and the demand on th supply shall be monitered on a daily basis. In addition the County Judge Executive or his or her designated agent, which is the Tri-Village Water Commission is authorized to call upon all water customers to employ voluntary water conservation measures to limit water use and eliminate the waste of water. Any resolution adopted pursuant to this section shall be published in the Owen County News Herald and may be publicized through any other appropriate method for making such resolution known to the publ

Section 3: Declaration of a water shortage alert. Whenever the governin body of the County finds, that treated waters supplied by the city, consistently below seasonal averages indicating that the water supply may be inadequate to meet normal needs, the Owen Fiscal Court shall be empowered to declare by resolution that a water shortage alert exists. The Owen Fiscal Court shall continue to encourage voluntary water conservation measures as may be set forth in such resolution and it shall further impos a ban on the following water uses for the duration of the shortage:

1. Any use of water for ornamental purposes, including, but not limited to, fountains, reflecting pools and artificial water falls.

2. Watering of public or private gardens, lawns, flowers, shrubs, or trees.

3. Watering of parks, golf courses (except greens), playing field other recreational areas.

4. The filling and or operation of swimming pools except pools us by health care facilities for patient care or rehabilitation or other specifically designated as exempt by resolution.

5. Washing of motor vehicles including, but not limited to, automobilies, trucks, boats, and trailers. Commercial car and truck washes shall be exempt from this restriction during a water shortage alert.

6. Serving water in restrauants, clubs or other eating places exce upon a specific request by a customer.

Section 4: Declaration of a water shortage emergency. Whenever the Owe Fiscal Court determines that treated waters supplied by the City, are below the level necessary to meet the normal needs of the population an that serious shortages exist, it shall be empowered to declare by resolution that a water shortage emergency exists. In the event that a water shortage emergency is declared, all water uses set fourth in Secti 3 shall continue to be prohibited and in addition, the following water uses shall be prohibited:

1. All domestic uses of water shall be prohibited except water necessary to sustain human life and lives of domestic pets and to maintain minimum standards of hygiene and sanitation.

2. The use of water for any swimming pool.

3. The washing of any motor vehicle including commercial car and tr washes.

4. The use of water in any automated clothes washing or dish washin device including commercial laundramats.

5. The watering of golf courses including golf course greens.

Section 5: Declaration of water rationing. Whenever the Owen Fiscal Cour finds a need to provide for the equitable distribution of a critically limited water supply, and in order to assure that limited water supplies are used to perserve public health and safety, it shall be empowered to declare by resolution the adoption of mandatory water rationing. Such water rationing shall be under terms and conditions which are appropriat under the circumstances and shall be set forth specifically in any resolution declaring the rationing of water.

Section 6: Any declaration of a water shortage advisory, water shortag alert, water shortage emergency, or water rationing shall be considered as ongoing until the condition so declared has been officially ended by a resolution of the Owen Fiscal Court. Any declaration made pursuan to this ordinance shall be published in the Owen County News Herald and through any other appropriate method for making such resolutions public Any declaration made pursuant to this ordinance shall be effective immediately upon passage, however, no criminal penalty shall be imposed upon any person for violating the terms of any declaration hereunder until the resolution authorizing such declaration has been published.

Section 7: Penalties. Any person who violates the provisions of this ordinance or who fails to carry out the duties and responsibilities imposed by this ordinance or who impedes or interferes with any action undertaken or ordered pursuant to this ordinance shall be subject to the following penalties:

1. A written notice of any violation shall be affixed to the prope where the violation occured. In addition, a copy of the notice shall be mailed to the person responsible for the violation. The notice shal describe the violation and shall order that it be corrected or abated immediately or within such specified time as set forth in the notice. If the violation is not abated or corrected immediately or within the time specified, the County may terminate water service to the property or to the violator upon the following proceedures:

(a) The Tri-Village Water Commission shall notify the customer by mail that due to the violation water services will be discontinued within a specified time and that the violator will have the opportunity to appeal the termination by requesting a hearing before the Tri-Village Commission.

(b) If a hearing is requested by the customer charged with the violation, he or she shall be given full opportunity to be heard.

(c) The Tri-Village Water Commission shall make findings of fact and shall enter an order determining whether service should continue or be terminated.

2. In addition to or in lieu of the termination of water service, any customer found to be in violation of this ordinance may be prosecut in the appropriate court of law. Any person so charged and found guilt in the appropriate court of law of violating the provisions of this ordiance shall be subject to a fine of not less than $ 100.00 and not more that $ 500.00 or confinement in the county jail for a period to be fixed by the court not to exceed thirty days, or both fine and confinement.

Section 8: As used in this ordinance, the term "water" shall mean any water which has been treated by the City of Owenton Water Treatment Plant or which has passed through any portion of the City of Owenton water distribution system.

As used in this ordinance the term customer shall include any person, group of persons, corporation, association, partnership or other entity or organization purchasing or using water for any purpose.

Section 9: Severability. If any provision of this ordinance is declared unconstitutional, or the application thereof to any person or circumstance is held invalid or unenforceable, the constitutionality or enforceability of the remainder of the ordinance and its applicability to other persons or circumstances shall not be affected thereby.

Section 10: Effective date: This ordinance shall take effect immediately upon approval, passage and publication as required by law.

First Reading approved by the Owen County Fiscal Court the 12th day of July, 1988

Horace Owen
County Judge/Executive

Second Reading and adopted by the Owen county fiscal court the 29th day of July 1988.

ATTEST:

Horace Owen

Fiscal Court Clerk