GRANT COUNTY

WATER SUPPLY PLAN

1998

Prepared By:

Grant County Water Supply Planning Council

and the

Northern Kentucky Area Development District

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CHAPTER 1
DESCRIPTION OF THE PLANNING UNIT

I. Introduction

Grant County, with a land area of 259 square miles, is located in the north central portion of the Bluegrass region of Kentucky. The county seat, Williamstown, is located 40 miles south of Cincinnati, Ohio and 40 miles north of Lexington, Kentucky.

Grant County's estimated 1995 population was 18,763, an increase of 19.2 percent since 1990. During the 1990-1995 period, Grant County was the fourth fastest growing county in Kentucky. Recent population projections show this rapid growth continuing with population increasing to 28,715 by 2020 (Figure 1.1). 1995 employment in the county averaged 4,034. The largest 1995 employment sector was retail trade.

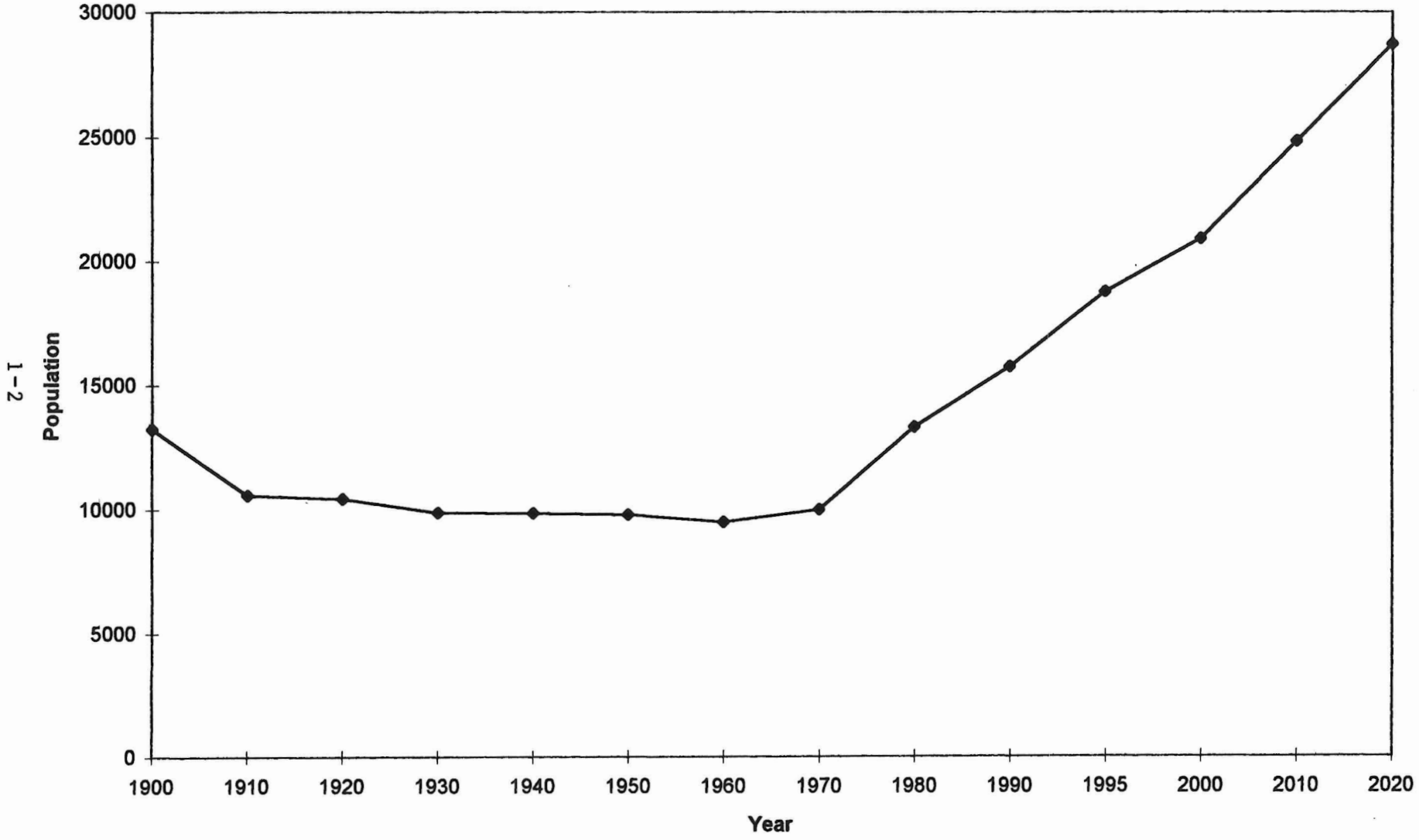
Highways serving the area are Interstate 75, U.S. 25, KY 22, and KY 36. Norfolk Southern Corporation provides main line rail service to the county.

II. Physiography

Grant County is located in the outer Bluegrass physiographic region with a topography that is characterized by broad hilltops and steeply sloping hillsides. Eagle Creek, running generally south to north in the western part of the county, is the main stream valley system located in Grant County. Eagle Creek, Licking River, and South Fork Licking River drain the entire county. The chain of ridges running north and south along Interstate 75 in Grant County is a natural boundary between the Eagle Creek watershed and the Licking River watershed. The Eagle Creek watershed drains all of Grant County except the area east of Interstate 75 which drains into the South Fork Licking River and Licking River to the east.

Figure 1.1

Grant County Population Growth: 1900 - 2020



CHAPTER 2
PLANNING COUNCIL

I. Formation of the Planning Unit

The planning unit is defined by the boundaries of Grant County, as shown in Map 1. County water needs are served by the Bullock Pen Water District, Corinth Water District, City of Dry Ridge, City of Williamstown, Tri-Village Water District, Telstar Mobile Home Park, and I-75 Camper's Village.

II. Planning Council and Planning Representative

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

Chairman: Mayor Norman Ferguson - City of Dry Ridge
Bobby Burgess - Bullock Pen Water District
Barbara Cammack - Grant County Health Department
Mayor Martha Hicks - City of Crittenden
William Hill - Corinth Water District
Judge/Executive Shirley Howard - Grant County Fiscal Court
Mayor Robert Jones - City of Williamstown
Gordon Taylor - Williamstown Municipal Water Dept.

Tri-Village Water District is a non-participant. Telestar Mobile Home Park and Camper's Village elected not to serve on the council; however, representatives receive minutes and attend meetings occasionally. Water supply planning council meeting summaries are found in Appendix A.

Planning Representative

NKADD was selected as the planning representative. Richard Bragg, Coordinator of the Development Services Division, oversees responsible staff. The primary responsible staff member is Heidi Van Keuren. No other potential planning representatives were considered.

III. 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 both the planning unit and adjacent counties. Local water watch groups and the public must also be notified. Samples of public notices, notification letters, and a list of recipients can be found in Appendix B.

CHAPTER 3
PLANNING OBJECTIVES AND CONFLICTS

I. Planning Objectives

Description of Process

A public hearing was held Tuesday, November 14, 1995 to consider the goals and objectives as stated in subsection 5.4 and to obtain the input of citizens. The meeting was advertised in the Grant County News. Several interested citizens attended.

The statement of goals and objectives was amended slightly and adopted at the meeting following the public hearing.

Goals and Objectives

Goals and objectives for the planning process are as follows:

1. Use of conservation to the maximum extent practical;

2. Provide a continuous level of supply under all conditions;

3. Compatibility with existing plans or to offer recommendations to alter those plans;

4. Preservation and use of natural storage and retention systems, whenever cost and data constraints permit;

5. Protection and enhancement of the overall quality of the environment;

6. Cost effectiveness;

7. Social and political acceptability, and community cohesion;

8. Coordination among water suppliers and distributors; and

9. Plan for, in order of priority, residential water use, industrial/commercial water use, and fire protection.

A copy of the workplan can be found in Appendix C.

Water Supply Planning Conflicts

No conflicts have been identified.

II. Review of Existing Plans

The Licking River Basin Study, completed in 1990, is the only relatively recent comprehensive water supply plan that includes Grant County. The following is a detailed summary of that plan.

Licking River Basin Study Summary

The Licking River Basin Study was a reconnaissance level investigation of water resource problems existing in the Licking River Basin of Kentucky. This study was conducted subsequent to a resolution adopted by the Committee on Environment and Public Works of the U.S. Senate in January, 1987. This resolution advocated a review of the results of prior investigations in addition to further analysis. The Licking River Basin Task Force, consisting of 22 members, was drafted in 1988 to lead the project. The study was carried out to predict and help facilitate the resolution of water resource problems in the Licking River Basin Area.

This investigation was performed in accordance with various regulations governing environmental and water resource policy. These regulatory documents dictated a two phase project, the first of which, the reconnaissance phase, was federally funded. In this portion of the study several plans were examined, resulting in the selection of a minimal number with which to work. The second segment, the feasibility phase, was equally funded by the federal government and local sponsors. This portion of the project, as opposed to the reconnaissance phase, was aimed at the identification of a single recommended plan.

Data were collected from several sources for this study to evaluate current and projected water demand in order to assess the efficiency of current and projected water supplies. If demands on water sources were found to exceed that of their supplies, the time, location, and degree of these deficits would have to be calculated to adequately prepare for such shortages.

The methodology for the Licking River Basin Study involved two components, the first of which was related to predictions of water demand and the second to water supplies. This methodology was applied to two specific flow scenarios, the 7Q10 low flow period, which is the minimum average discharge of seven days for a ten year frequency event, and the 1930 drought of record. Due to the size and nature of the basin, it was divided into fifteen water service areas, defined by certain commonalities regarding water supply. Fourteen of these water service areas were evaluated during this study.

Licking River Basin Study -Projected Demands Analysis

For the projected water demand, estimates were made using the IWR-MAIN computer model which is maintained by the U.S. Army Corps of Engineers' Institute for Water Resources. This program makes predictions based on various socioeconomic characteristics of a given study area including: 1) population; 2) number, market value, and type of housing units; 3) employment in commercial and manufacturing industries; 4) water and wastewater rates; 5) residential lawn and

garden watering; 6) weather conditions, and various other demographic qualities of the population.

Data for this portion of the study were collected from various sources such as the U.S. Bureaus of the Census and Economic Analysis, The Kentucky Directory of Manufacturers, County Business Patterns, the Urban Studies Center of the University of Louisville, and materials published by OBERS Bureau of Economic Analysis. After this information was gathered, projections were made for water demands of the fourteen studied segments of the Licking River Basin.

Licking River Basin Study - Projected Supplies Analysis

In assessing current and future water supply conditions, flow rates were calculated at each point of withdrawal for various flow conditions. As with the water demand estimation, the two scenarios that were evaluated for supply projections were the ten year drought using the 7Q10 flow rates and the 1930 drought. The primary points of interest for this portion of the study were those from which water is withdrawn for treatment and subsequent sale or distribution. These points were determined in the demand analysis survey. Data for these areas were collected primarily from reports of the U.S. Geological Survey which has gaging stations across the state of Kentucky. Thus, stream flows were developed for the two conditions at each of the intake facilities.

Once flow rates had been determined for each of the intake facilities, the estimated supplies were compared to the projected demands for the corresponding withdrawal points to calculate the magnitude of potential surpluses and/or deficits.

Licking River Basin Study - Grant County Water Service Area Summary

Grant County was divided into two water service areas, those of South Grant and Bullock Pen. The South Grant water service area encompassed the southern two-thirds of Grant County and 59% of its population. This water service area consisted of three utilities with a single source, Williamstown Lake. The Bullock Pen service area comprised the northern third of the county and 41% of its population. The area had only one utility and drew from Bullock Pen Lake.

The Williamstown intake facility in the South Grant water service area provided water directly to the city's residents and in turn wholesaled water to the Dry Ridge municipal system and the Corinth Water District. Both utilities then provided for area residents as well as customers along U.S. 25. Sixty percent of the area's population was served in 1990.

Initially the IWR-MAIN model yielded unreasonable water consumption patterns for the area. However, by using previous census data for water consumption of the residential, commercial, and industrial sectors of the region, research was recalculated to provide more accurate water use ratios. Thus, the final IWR-MAIN projections, which combine totals from these three sectors,

were accepted.

The South Grant water service area performed well, even in drought conditions in the 1980s, during which time it sold water to haulers from Harrison and Pendleton Counties. Yet based on projected growth rates for the area and extended water service to residents of unincorporated Grant County, the City of Williamstown adopted a plan for rehabilitation and expansion of its current water service program. Extension of service west of I-75 however, might entail further investment with the possibility of drafting a new source.

The Bullock Pen water service area comprised the northern third of Grant County and included 41 percent of the county's population. The City of Crittenden and several enumeration districts were located in this area. It also served small portions of Pendleton, Boone, and Kenton counties. Service was available to 68 percent of the area's population. Three expansions of this service area, which will increase its number of customers, were at or near completion. The area has a single supplier, the Bullock Pen Water District, which draws from Bullock Pen Lake.

As with the South Grant yields, initial IWR-MAIN projections were considered unreasonable for the Bullock Pen service area. Therefore, data again had to be recalculated for input into the model which ultimately produced acceptable estimates.

The Bullock Pen Water District was the sole provider for this service area. In 1990, the utility's condition and capabilities were well-rated. However, inconsistent precipitation patterns in the region sometimes resulted in local concern for the adequacy of water supply. Continued maintenance is based upon an assumption of replacement or rehabilitation of the district's distribution components as necessary. However, with expansion to this service area, as well as projected internal growth, alternative sources may need to be evaluated.

1995 Grant County Comprehensive Plan Update

The 1995 plan update was reviewed for any pertinent information. Several of the objectives of the Community Facilities and Services section relate to water supply adequacy and protection including:

1. Develop an independent and improved water supply for the county and alternative water sources.

2. Continue to extend public water service to all of Grant County.

3. Expand existing sewer systems especially to Williamstown Lake and Bullock Pen Lake.

CHAPTER 4
COUNTY BASE MAP

The Planning Unit Map and the County Base Map were combined. Please refer to page 2-2.

CHAPTER 5
WATER USE AND WATER USE FORECAST

A. Water Use Assessment

Grant County has two major water suppliers, two major distributors, and several small water suppliers and distributors. The following pages contain an information profile for those suppliers and distributors that completed a water plan questionnaire.

Water Supplier

BULLOCK PEN WATER DISTRICT

Address: P.O. Box 188
Crittenden, KY 41030

Phone: (606)428-2112

Contact: William Catlett

Raw Water Source: Bullock Pen Lake

Permitted Withdrawal Limits:

January through April - 550,000 gpd
May - 700,000 gpd
June through August - 800,000 gpd
September through November - 600,000 gpd
December - 550,000 gpd

Treated Water Sources:

Source Utility	Maximum Delivery
City of Walton	100,000 gpd
City of Williamstown	None stated but there is 150,000 gpd minimum

Treated Water Storage:

Location	Type	Capacity (Gal)
Dry Ridge	Standpipe	140,000
Verona	Elevated Tank	100,000
Crittenden	Elevated Tank	200,000
Sherman	Elevated Tank	150,000
Stewartsville	Elevated Tank	200,000
Plant	Standpipe	135,000

Leak Detection Methods: Driving lines, checking valves, and charts on telemetry systems.

Conservation Measures: None.

Planned Improvements: Upgrading the size of lines.

Anticipated Growth: Many new subdivisions are being built or planned and there is considerable potential for additional development.

Water Distributor

Corinth Water District

Address: 215 Thomas Lane
P.O. Box 218
Corinth, KY 41010

Phone: (606)824-7110

Contact: William Hill

Treated Water Source: City of Williamstown

Maximum Delivery: 5,000,000 gallons per month

Treated Water Storage:

Location	Type	Capacity(Gal)
Stringtown Road	Standpipe	120,000

Planned Improvements: To add lines in rural Grant County and to build additional storage capacity with either an elevated tower or a standpipe.

Anticipated Growth: Increase in customers as a result of new lines.

Water Distributor

City of Dry Ridge Water Department

Address: 31 Broadway
P.O. Box 145
Dry Ridge, KY 41035

Phone: (606)824-3335

Contact: Tony Ashcraft

Source of Treated Water: City of Williamstown

Maximum Monthly Delivery: 9,000,000 gallons

Treated Water Storage:

Location	Type	Capacity(Gal)
Meeks Road	Elevated Tank	100,000
EZ Street	Elevated Tank	200,000

Leak Detection Methods: Valve-off lines, walk lines.

Planned Improvements: Continue to loop lines

Anticipated Growth: Growth as population continues to increase.

Water Supplier

Williamstown Municipal Water

Address: 400 North Main Street
Williamstown, KY 41097

Phone: (606)824-4210

Contact: Gordon Taylor

Raw Water Source: Lake Williamstown

Permitted Withdrawal Limits: 2.25 mgd

Treatment Plant:

Location: Water Works Road
Capacity: 2.25 Mgd
Date Built: 1964, upgrades in 1977 and 1994
Condition: Good
Type Treatment: Conventional

Treated Water Storage:

Location	Type	Capacity(Gal)
Water Treatment Plant	Clear Well	200,000
Water Treatment Plant	Clear Well(secondary)	150,000
Water Treatment Plant	Elevated Tank	500,000
U.S. 25 South	Elevated Tank	200,000
Humes Ridge North	Elevated Tank	200,000
Hilltop South	Elevated Tank	200,000

Leak Detection Methods: Compare gallons of water treated to gallons of water sold and used at plant. Monitor lake for leaks at spillway and dam.

Conservation Measures: None.

Planned Improvements: New filters are ready to be installed. New raw water and lift pumps are being installed.

Anticipated Growth: Williamstown currently supplies approximately two-thirds of the county either directly or through sales to distributors. As the county continues to develop, growth is anticipated.

OTHER WATER SUPPLIERS AND DISTRIBUTORS

I-75 Campers Village Campground
Population Served: 145
Water Source: Groundwater
Contact: Dorothy Jamieson
Phone: (606)824-7110

Telestar Mobile Home Park
Population Served: 201
Water Source: Purchase surface water
Contact: June Hedrick
Phone: (606)291-0684

Tri-Village Water District
Population Served: Approximately 200 in the Jonesville area. Most of Tri-Village's customers are in Owen County.
Water Source: Purchase water from Owenton Water Works.
Contact: Carol Cox
Phone: (502)484-5774

Permitted Withdrawals

A water withdrawal permit is required for any user who withdraws an average of more than 10,000 gallons of water per day. According to DOW, the only permitted withdrawals, using this definition, are Bullock Pen Water District and Williamstown Municipal Water Department.

Agricultural Water Use

Agricultural users who withdraw water are exempt from the permit requirement. However, it is very difficult to quantify their water use. According to the 1992 Census of Agriculture, only 114 acres of farmland are irrigated which is approximately .09 percent of total farm land. Looking at trends in agriculture, the total number of farms increased from 1,053 in 1987 to 1,079 in 1992; however, total farm land decreased from 133,142 acres in 1987 to 127,161 in 1992. As residential development continues, it is likely that farm land will decrease even further. Some agricultural water users are on public water systems such as Vest Dairy Farm (averaging 1,636 gpd).

B. Water Use Forecast

The water supply forecasting model, IWR-MAIN, discussed previously in the review of existing plans, was used to forecast future demand for water for the two water service areas. It must be emphasized that the IWR-MAIN model was designed for use in large urban areas. Therefore, results must be viewed with caution and compared against local knowledge. Projections are intended to serve as a planning tool not as an absolute measure of future demand.

BULLOCK PEN WATER SERVICE AREA

The northern portion of the county is served by the Bullock Pen Water District (BPWD). In addition to serving northern Grant County, BPWD also serves parts of Boone, Gallatin, Kenton, and Pendleton Counties. Bullock Pen currently meets water demand with both treated and purchased water. The source of treated water is Bullock Pen Lake. Permitted withdrawal limits from the lake vary by month. BPWD purchases water from the City of Walton with a 100,000 gallon per day maximum and from the City of Williamstown with a 150,000 gallon per day minimum with no stated limit.

Assumptions Used in the Modeling Process

A number of assumptions were used in the modeling process.

1. The City of Crittenden is demographically representative of this area in terms of income and housing values.

2. Currently, there is very limited industrial water use in this area and it is assumed that this will continue to be true.

3. The majority of all future residential, commercial, and institutional water use will occur in water-served areas.

4. Public/unaccounted water use was calibrated at five percent rather than the ten percent automatically set by the IWR-MAIN model. According to the Bullock Pen survey, five percent is a more accurate figure.

5. Please note that residential water use is not shown broken down into single-family, multi-family, flat-rate, metered, sewered, and unsewered categories in the following pie charts. The utilities do not keep data at this level of detail and best "guesstimates" and census data were used for the model where required by entry screens.

Data Sources

The following data sources were used for the IWR-MAIN model.

1. 1990 Census of Population and Housing.

2. Population projections are from the high growth series of How Many Kentuckians: 1995 Edition.

3. Unemployment insurance data was used to estimate employment by sector in the county.

4. Manufacturing data was compiled from the Kentucky Directory of Manufacturers. Surveys completed by water suppliers and distributors were used for calibration and to verify accuracy. A copy of the survey can be found in Appendix D.

Methodology and Verification of Estimates

1990 was the base year and 1995 was the projection year. The projections were then compared against actual water use for 1990 and 1995. Figure 5.1 shows projected and actual water use (where available) for the water service area. The model appears to be fairly accurate with water use underestimated by 3.4 percent in 1990 and by only .1 percent in 1995. Figures 5.2 through 5.9 show actual and projected water use by sector.

Conclusions

Figure 5.10 compares the projected demand for water to available supply. As mentioned previously, the maximum permitted withdrawal from Bullock Pen Lake is 800,000 gpd; however, in some months, it is as low as 550,000 gpd. Therefore, BPWD relies on a combination of treated and purchased water to meet demand. The City of Walton provides a maximum of 100,000 gpd. The City of Williamstown does not currently have a maximum limit, only a minimum of 150,000 gpd. However, for planning purposes, it was assumed that the City of Williamstown could not provide more than 500,000 gpd. Therefore, a total of 1,350,000 gallons per day would be available. Using this figure, supply would meet demand during the planning period; however, this is very dependent upon the City of Williamstown providing a significant percentage of the supply for this water service area.

Figure 5.1

Bullock Pen Water Service Area: Actual Vs. Projected Water Use

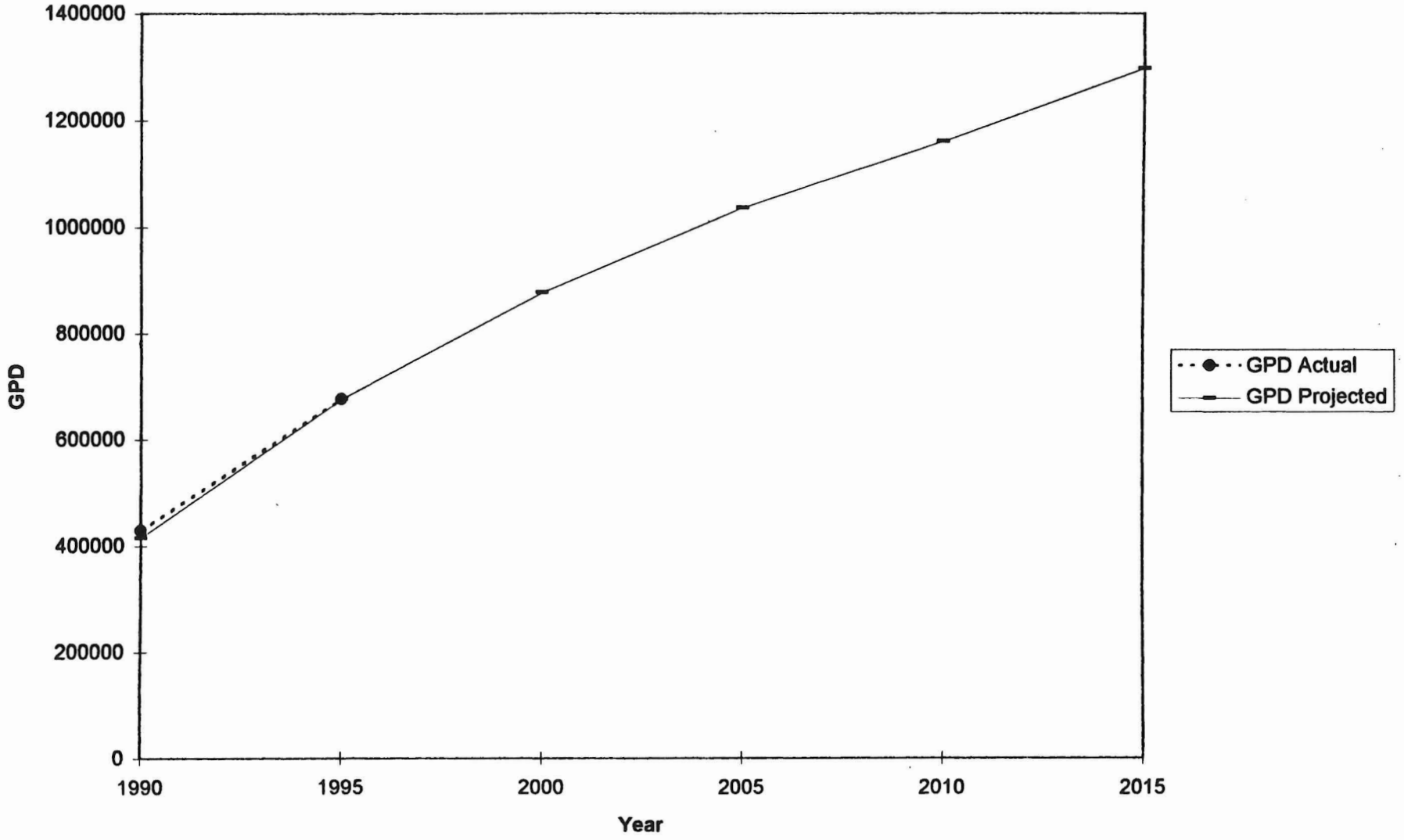


Figure 5.2

Bullock Pen Water Service Area: 1990 Actual Use

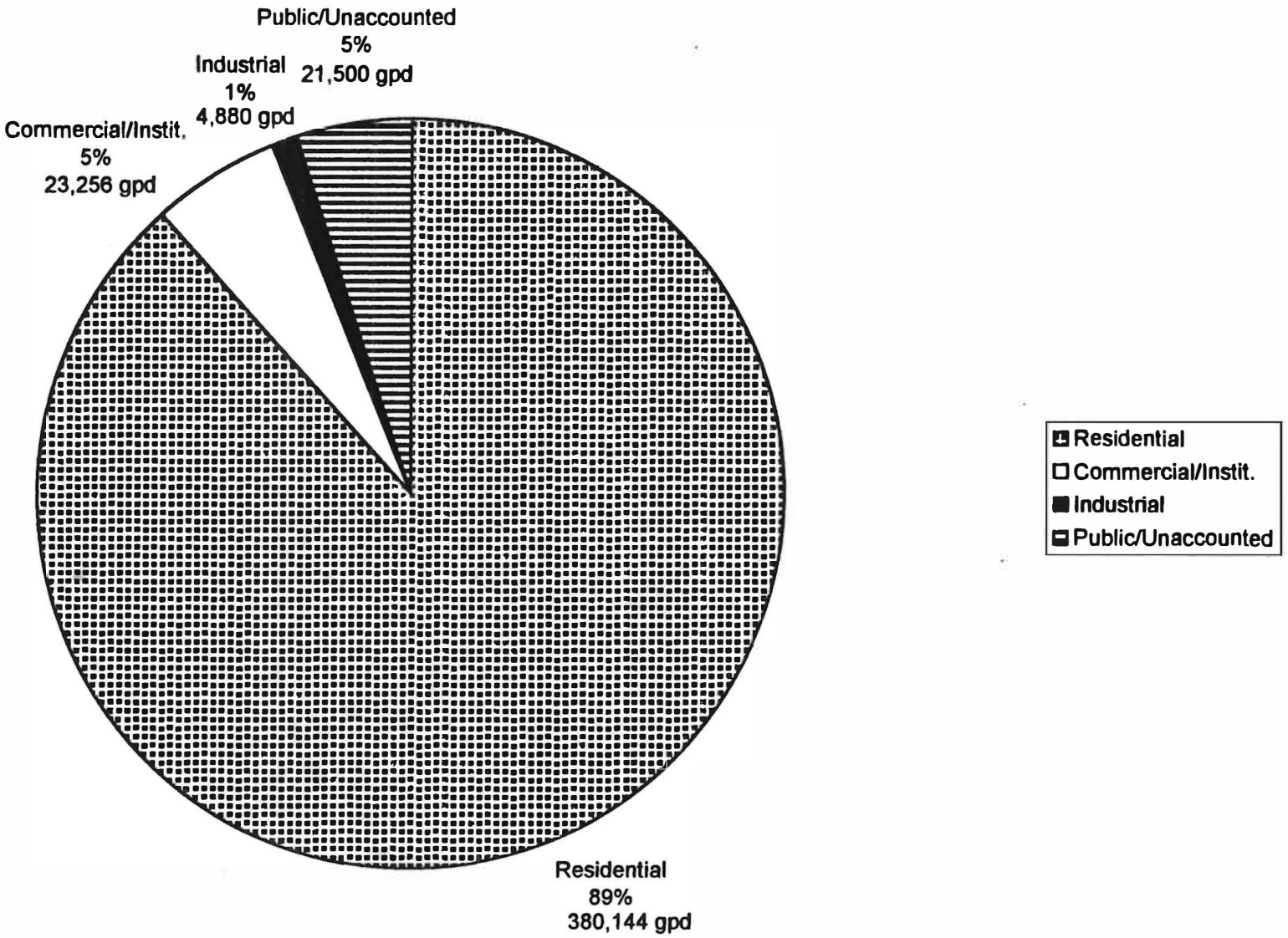


Figure 5.3

Bullock Pen Water Service Area: 1990 Projected Use

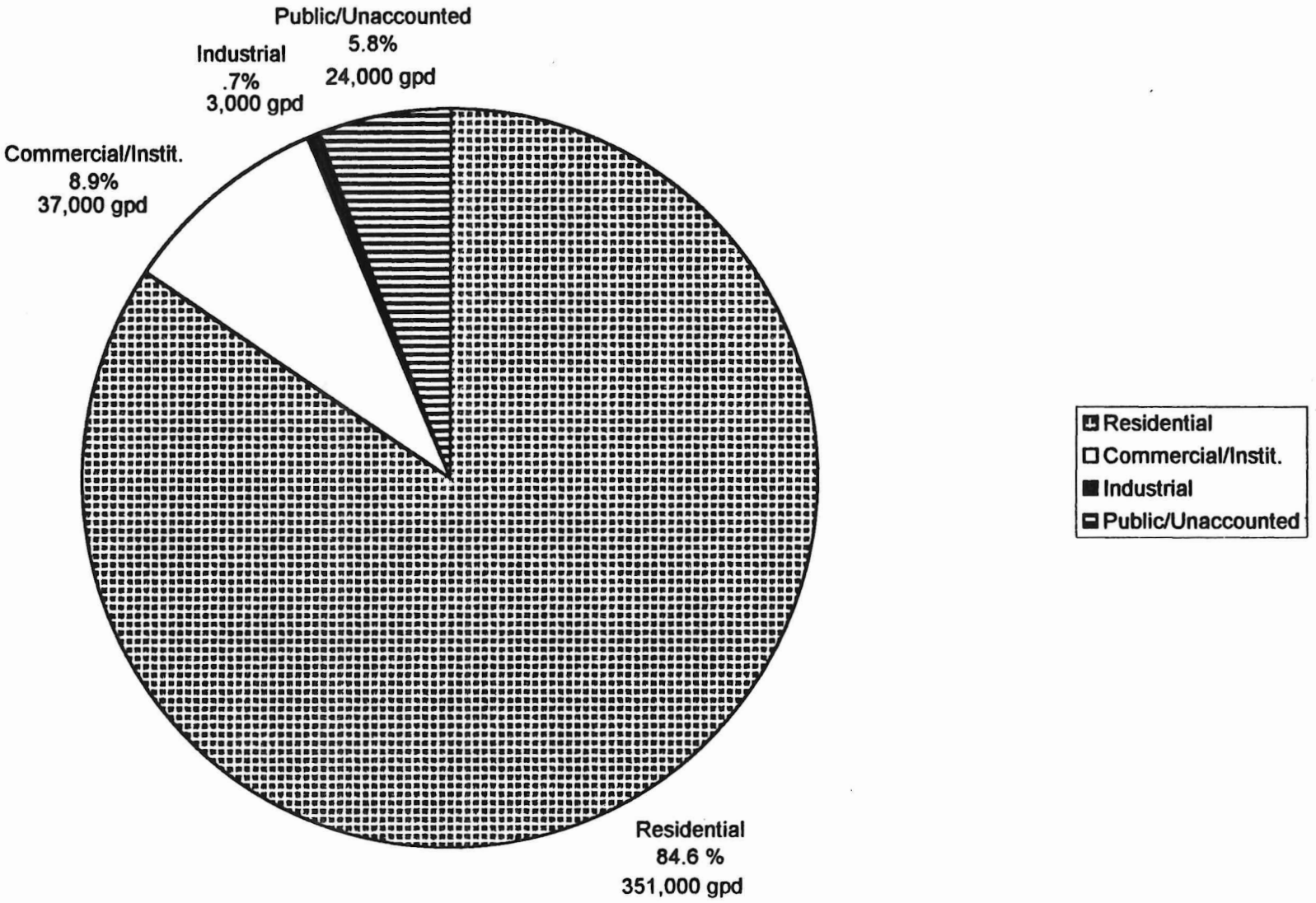


Figure 5.4

Bullock Pen Water District: 1995 Actual Use

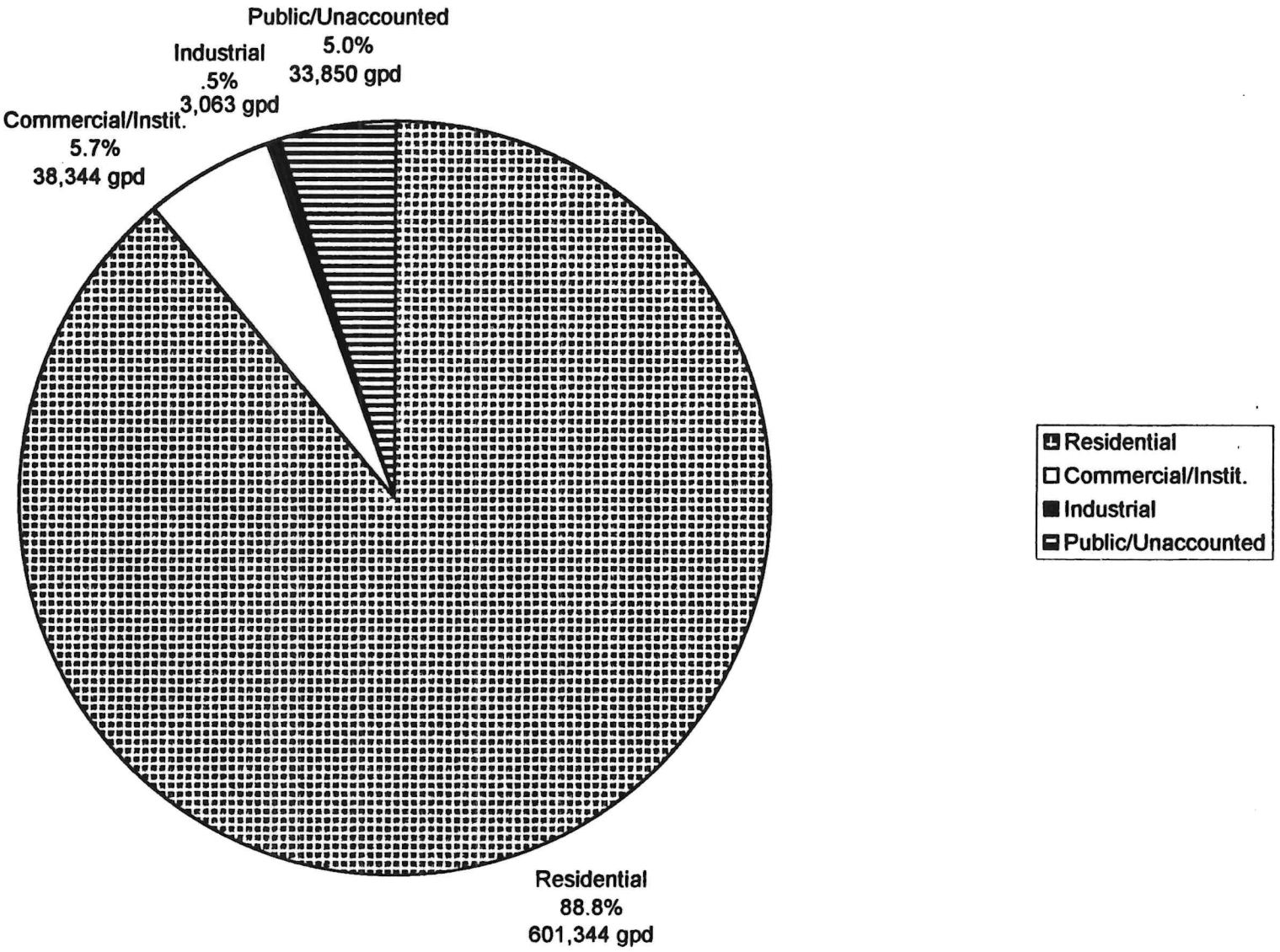


Figure 5.5

Bullock Pen Water Service Area: 1995 Projected Use

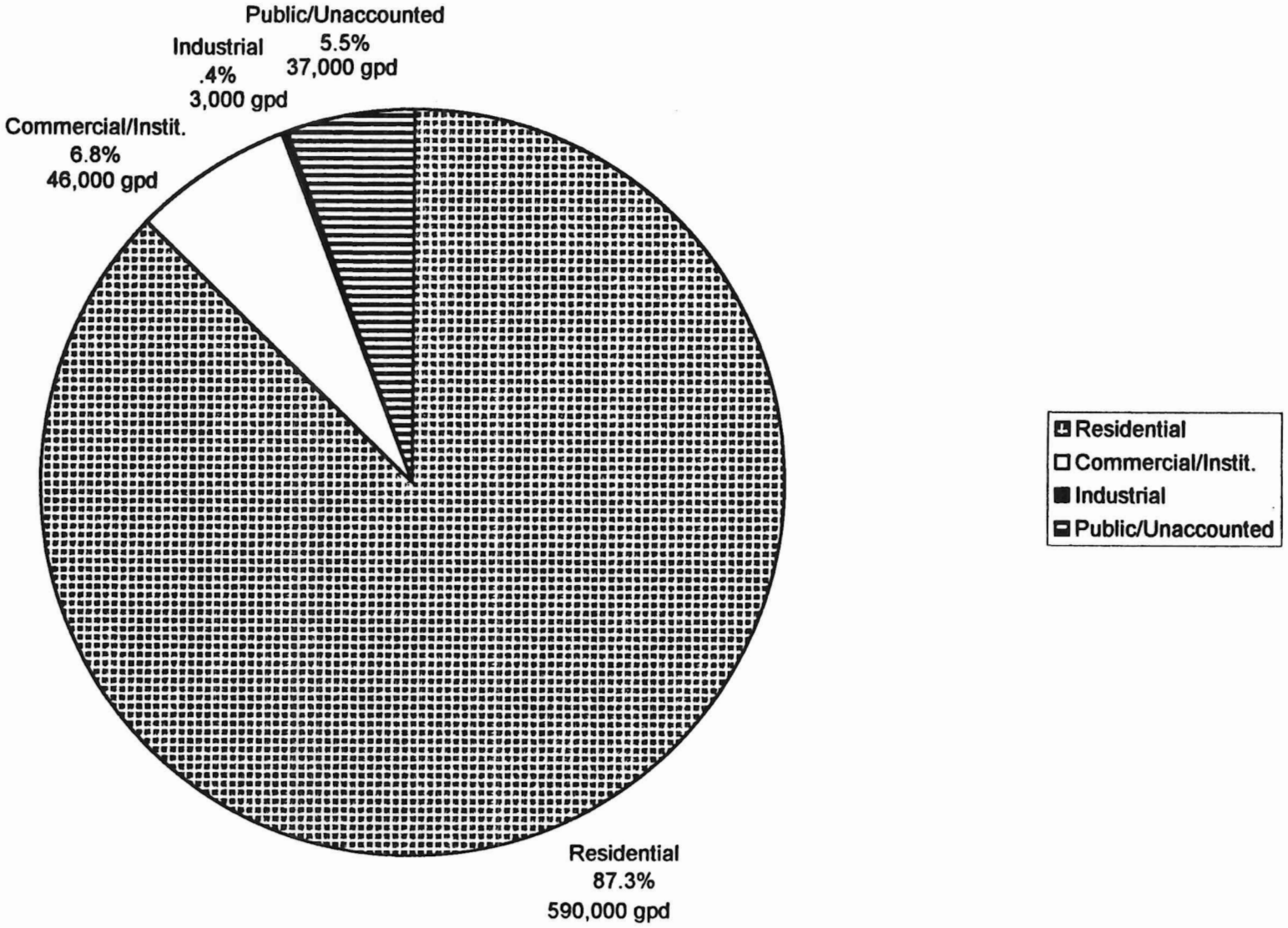


Figure 5.6

Bullock Pen Water Service Area: 2000 Projected Water Use

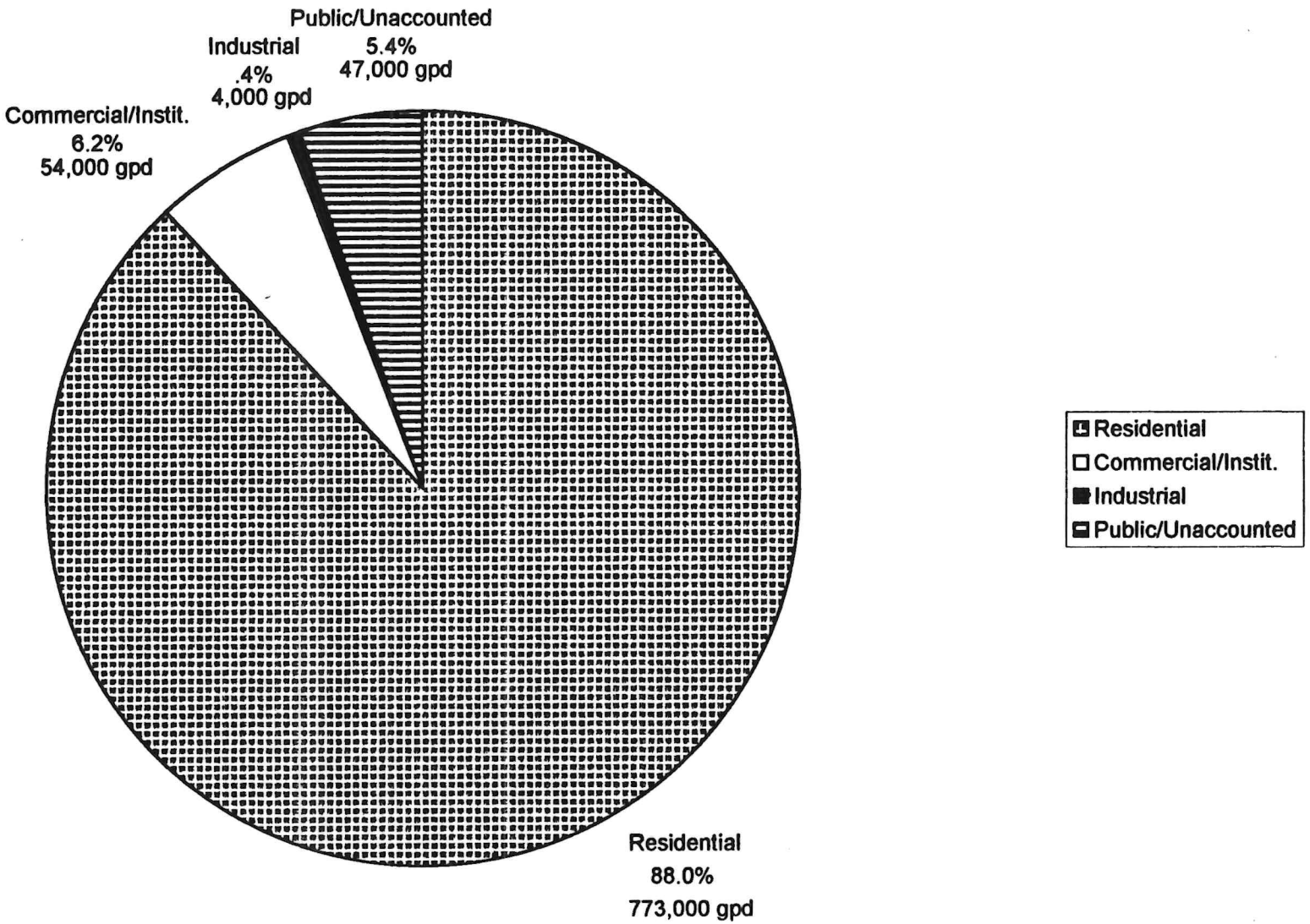


Figure 5.7

Bullock Pen Water Service Area: 2005 Projected Use

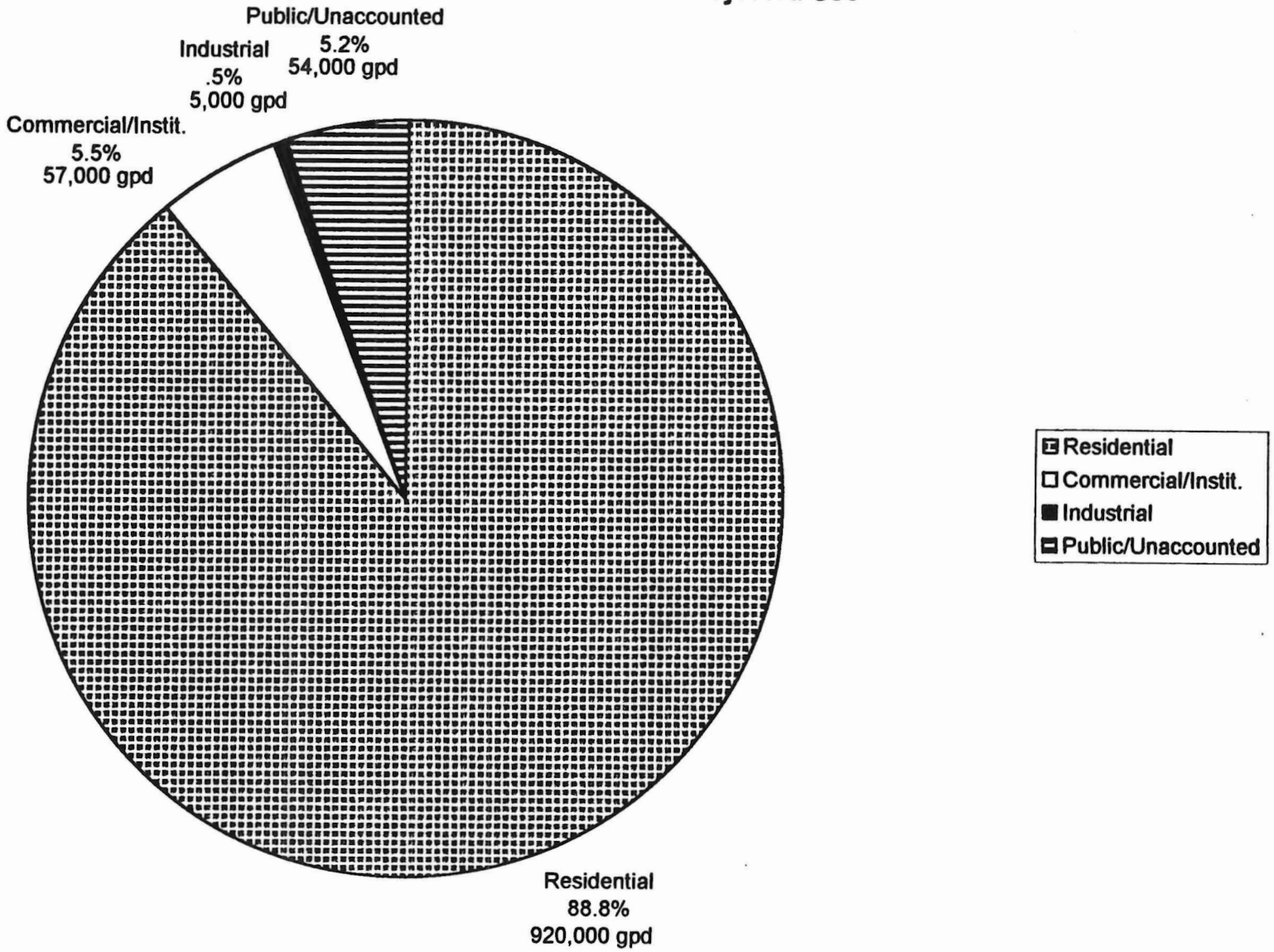


Figure 5.8

Bullock Pen Water Service Area: 2010 Projected Use

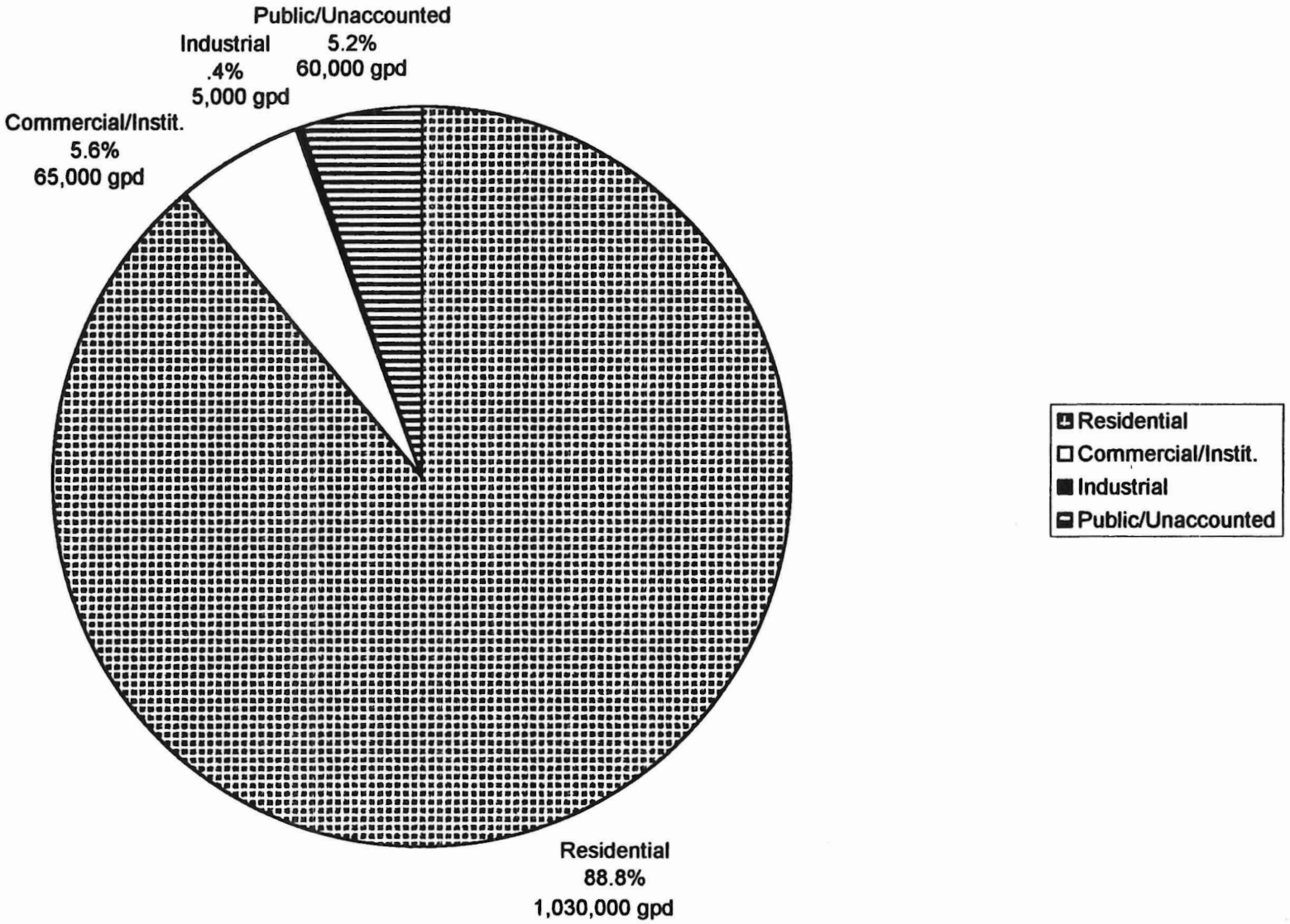


Figure 5.9

Bullock Pen Water Service Area: 2015 Projected Use

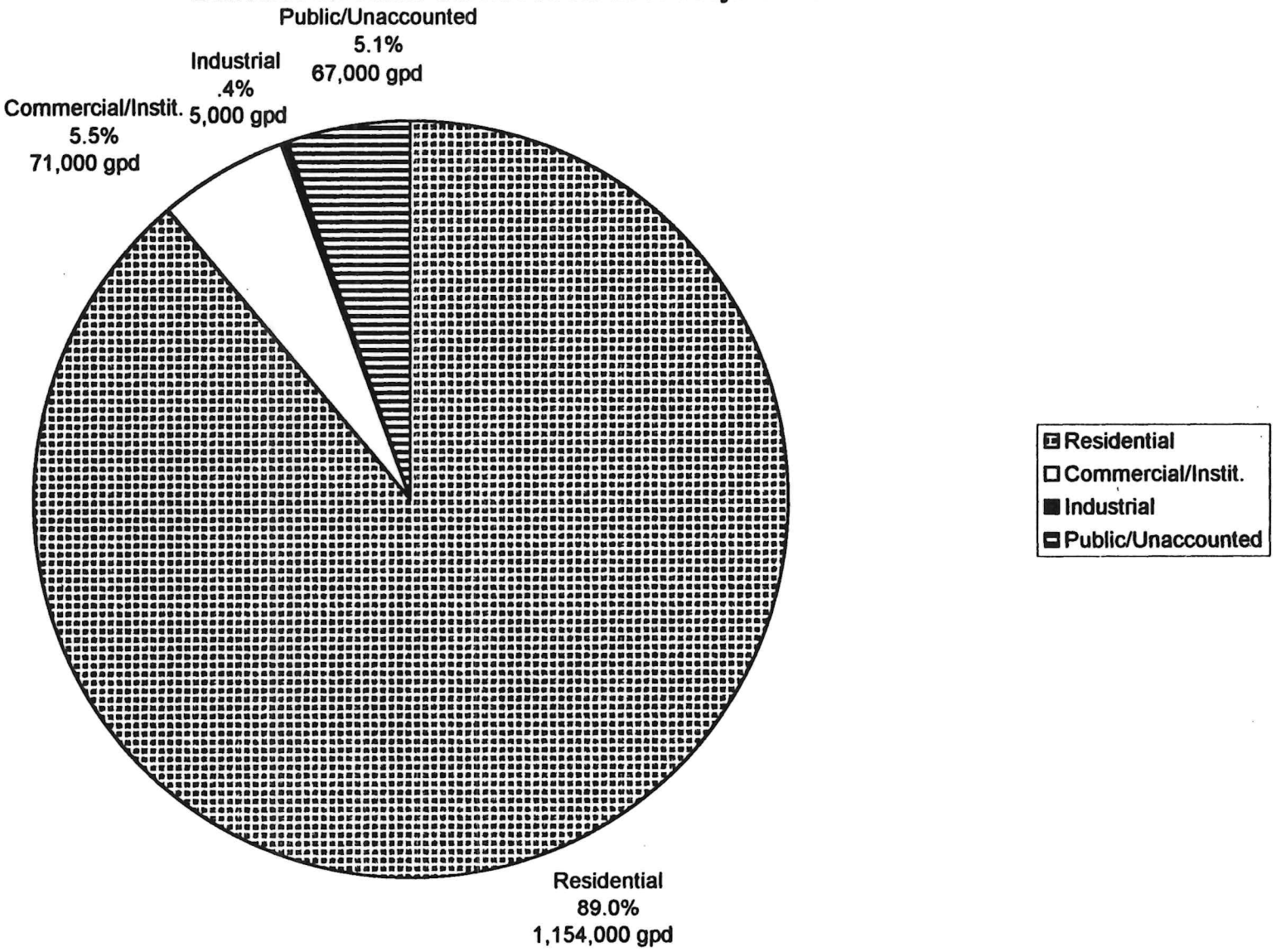
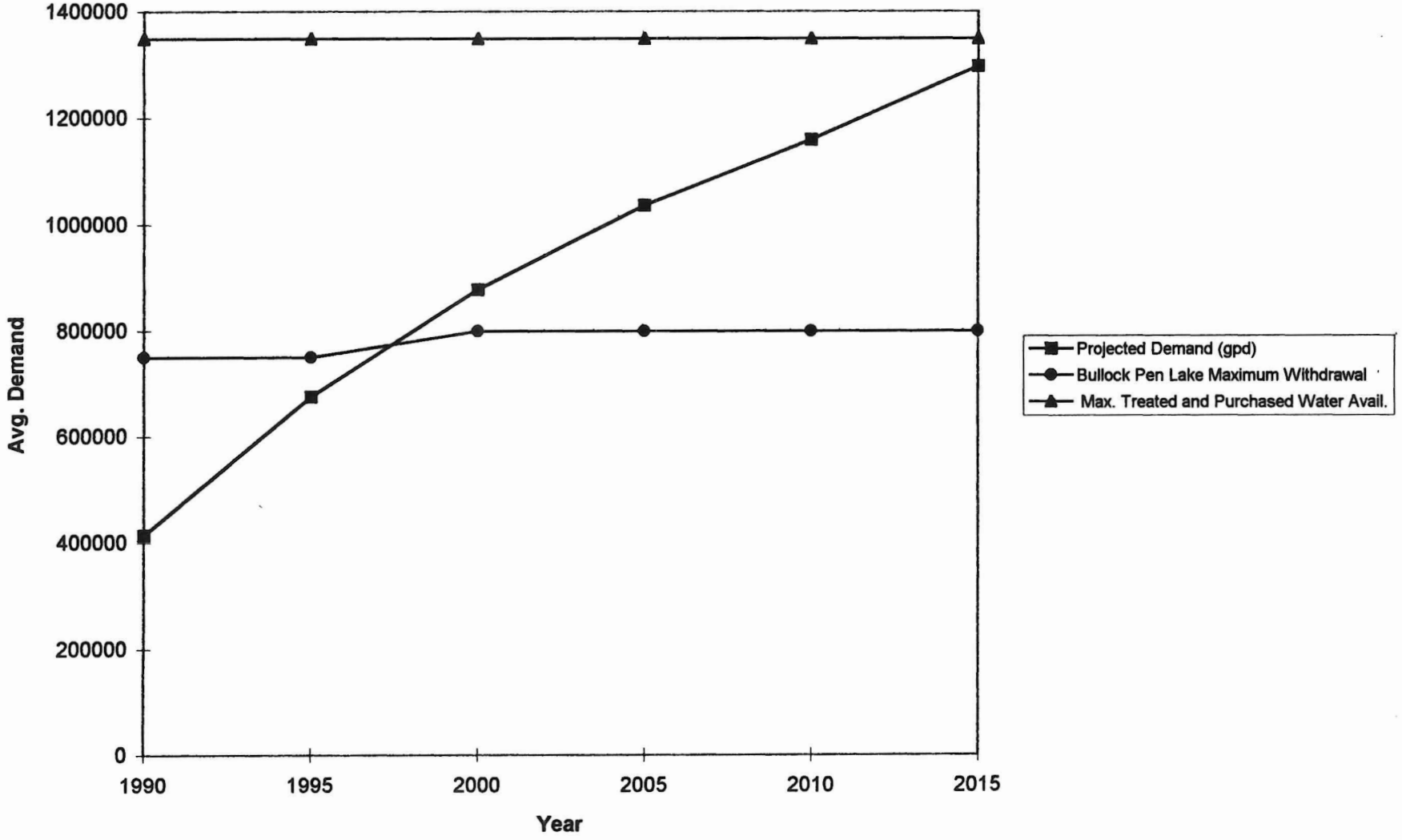


Figure 5.10

Bullock Pen Water Service Area: Water Source(s) Vs. Projected Demand



WILLIAMSTOWN WATER SERVICE AREA

The central portion of the county is served by the City of Williamstown. In addition, Williamstown sells water to the City of Dry Ridge, the Corinth Water District, and the Bullock Pen Water District. It is estimated that approximately 45 to 50 percent of the water-served population in the county is served either directly or indirectly (wholesale water sales) by the City of Williamstown. The water source is Williamstown Lake. Current treatment capacity is 2.25 mgd which is also the permitted withdrawal limit.

Assumptions Used in the Modeling Process

A number of assumptions were used in the modeling process.

1. Currently, there is limited industrial water use in this area and it is assumed that this will continue to be true. If an industry with large water needs locates in the area, demand projections will need to be recalculated.

2. The majority of all future residential, commercial, and industrial development will occur in water-served areas.

3. Public/unaccounted water use was calibrated at ten percent.

4. Please note that residential water use is not shown broken down into single-family, multi-family, flat-rate, metered, sewered, and unsewered categories in the following pie charts. The utilities do not keep data at this level of detail and best "guesstimates" and census data were used for the model where required by entry screens.

Data Sources

The following data sources were used for the IWR-MAIN model.

1. 1990 Census of Population and Housing.

2. Population projections are from the high growth series of How Many Kentuckians: 1995 Edition.

3. Unemployment insurance data was used to estimate employment by sector in the county.

4. Manufacturing data was compiled from the Kentucky Directory of Manufacturers.

5. Surveys completed by water suppliers and distributors were used for calibration and to verify accuracy. A copy of the survey can be found in Appendix D.

Methodology and Verification of Estimates

1990 was the base year and 1995 was the projection year. The projections were then compared against actual water use for 1990, 1995, and 1996. The phenomenal growth that the county is experiencing makes it difficult to project future demand. As an example, in past years, the county averaged 200 new homes a year. Currently, 200 homes a month are being added as a result of subdivision development. While IWR-MAIN overestimated water use for 1990 and 1995 by 37

percent and 20 percent, in 1996, water use was only overstated by 7 percent (See Figure 5.11). Therefore, after consultation with the Williamstown Water Department, it was decided that the future projections were probably reasonably accurate and quite possibly underestimated by the end of the planning period. No further adjustments were made.

Figures 5.12 through 5.18 show projected water use by sector. Please note that actual water use by sector for 1990 and 1995 is not displayed because this data was not supplied. A change to a computerized record-keeping system was the explanation given for the lack of data.

Conclusions

Figure 5.19 compares the projected demand for water to available supply. As mentioned previously, the water plant treatment capacity and the permit withdrawal limit is 2.25 mgd. However, according to the calculations performed by the engineering staff of Howard K. Bell as a part of the 1992 water treatment plant expansion, the treatment plant could be expanded up to a 5.0 mgd capacity without having appreciable negative effects on the lake. As shown in Figure 5.19, the projected demand for water would be greater than the treatment capacity by 2006; however, demand would not reach the 5 mgd limit during the planning period.

While the projected demand for water is not greater than the available supply, the Grant County Water Supply Planning Council will explore alternative water sources. The decision to look for alternative sources is based on two factors. First, the County is experiencing such rapid growth that it is difficult to accurately predict future demand. Second, Williamstown Lake is the sole water source for at least 50 percent of the water-served population. If the Lake were contaminated, there is no back-up water supply.

Figure 5-11

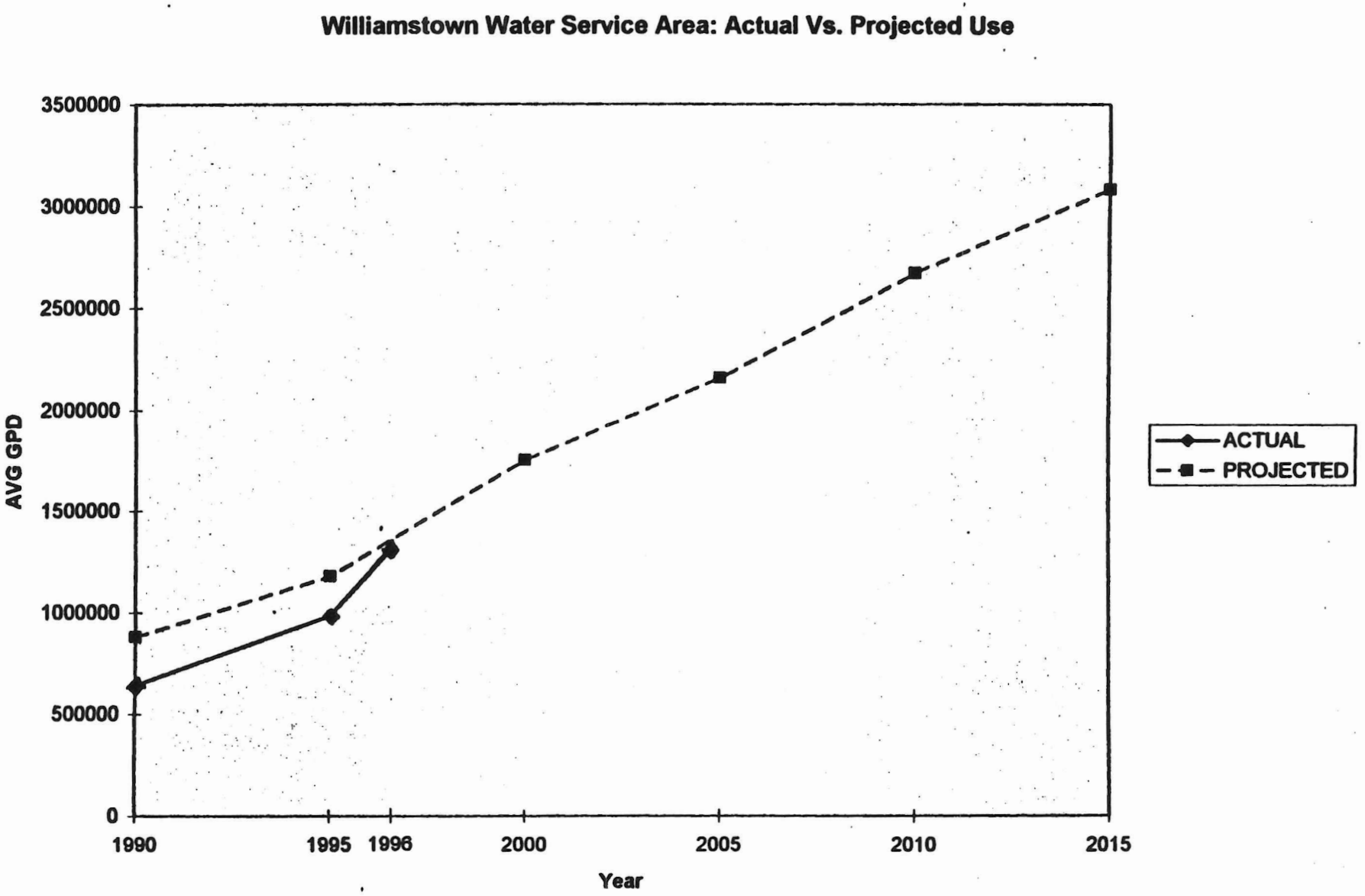

Williamstown Water Service Area: Actual Vs. Projected Use
AVG GPD
3500000
3000000
2500000
2000000
1500000
1000000
500000
0
1990
1995
1996
2000
2005
2010
2015
Year
ACTUAL
PROJECTED

Figure 5.12

Williamstown Water Service Area: 1990 Projected Use

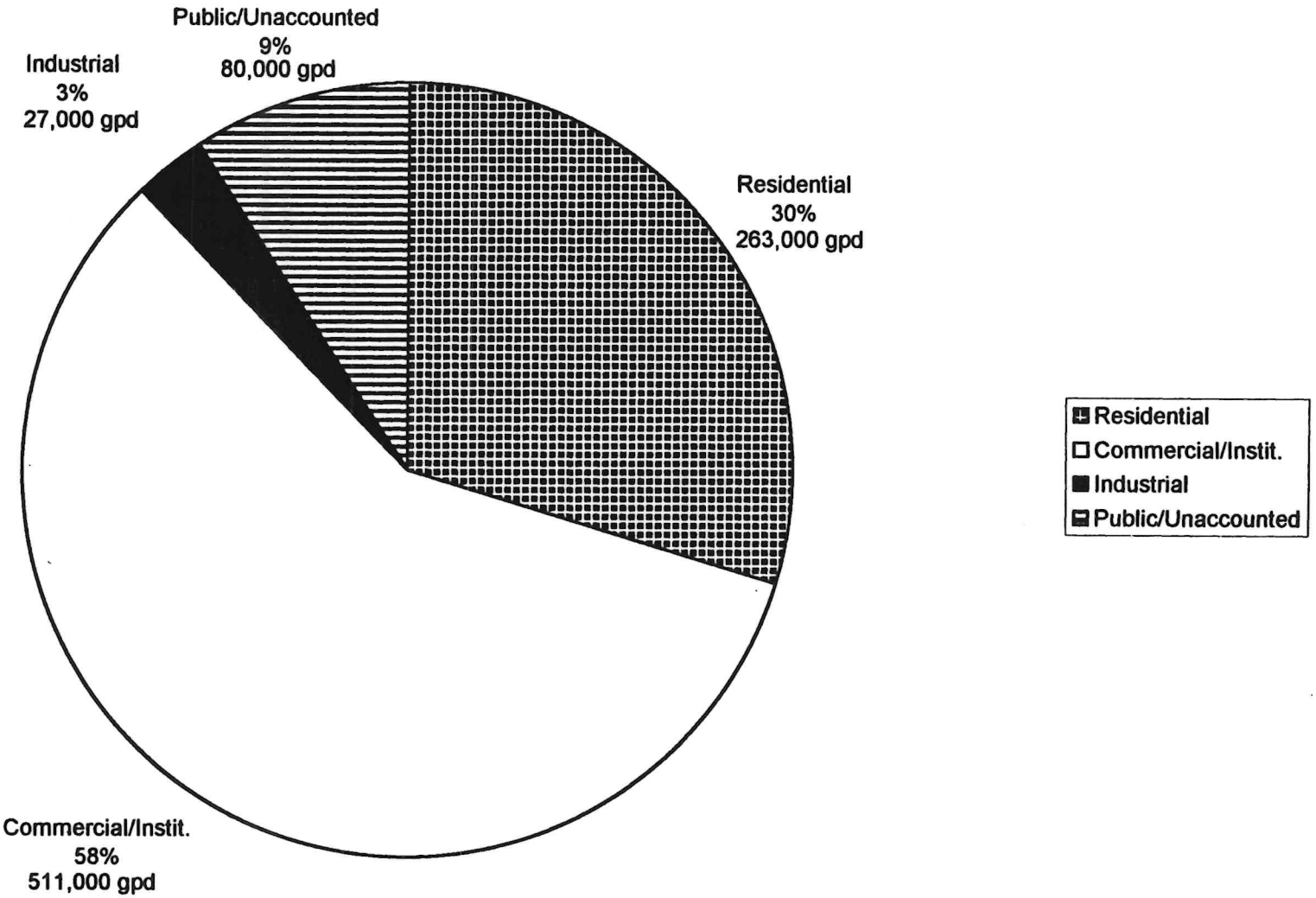


Figure 5.13

Williamstown Water Service Area: 1995 Projected Water Use

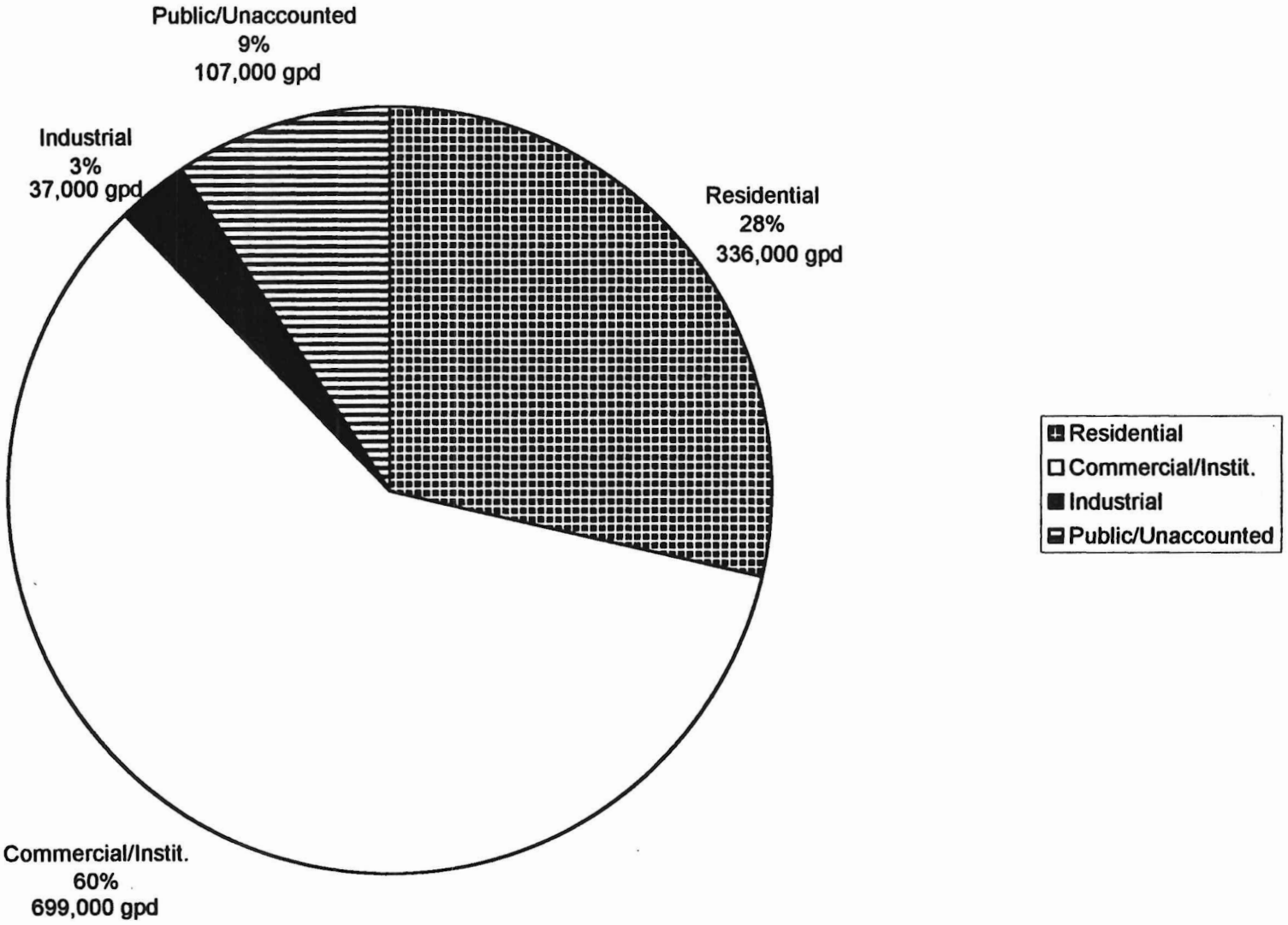


Figure 5.14

Williamstown Water Service Area: 2000 Projected Use

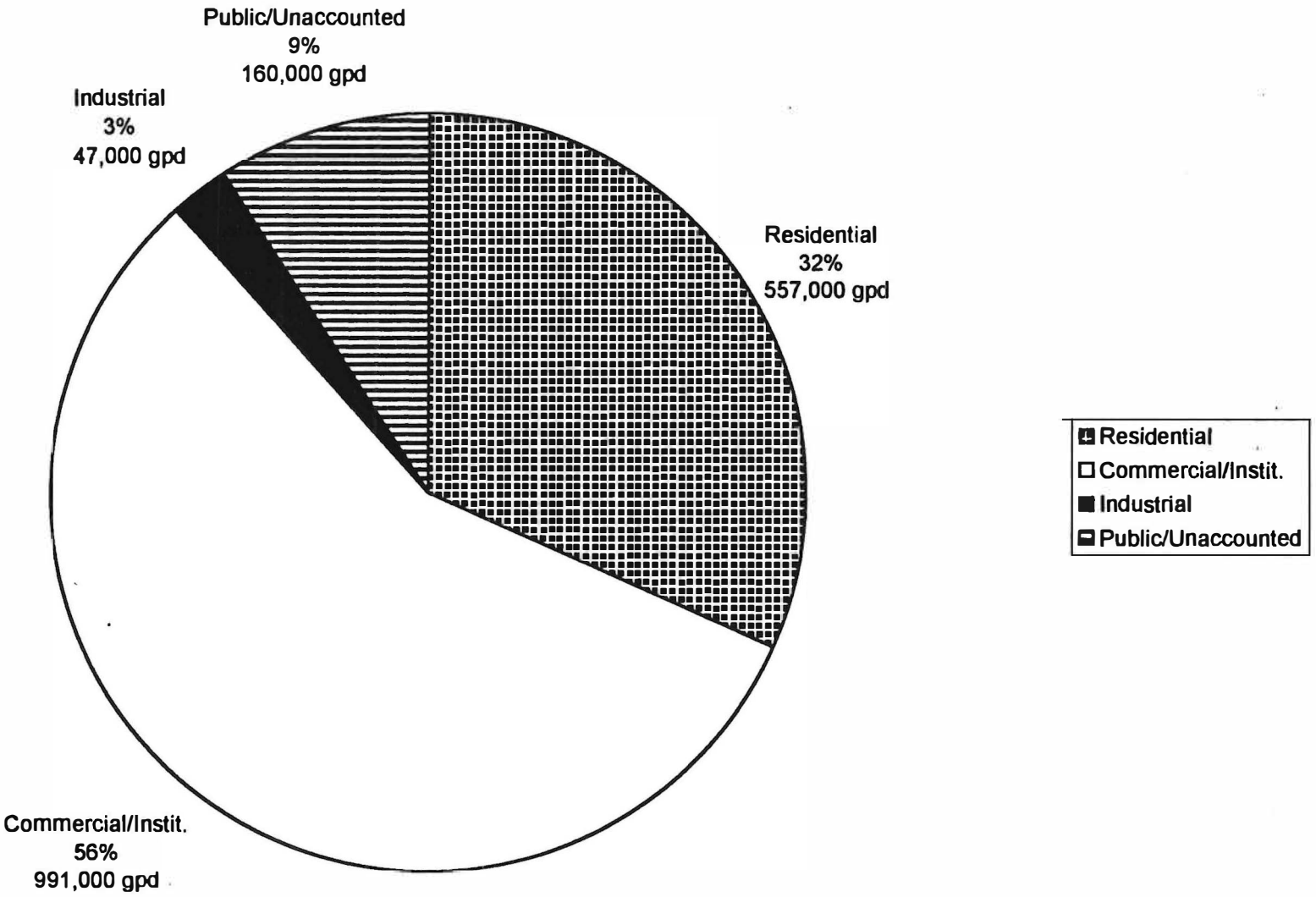


Figure 5.15

Williamstown Water Service Area: 2005 Projected Water Use

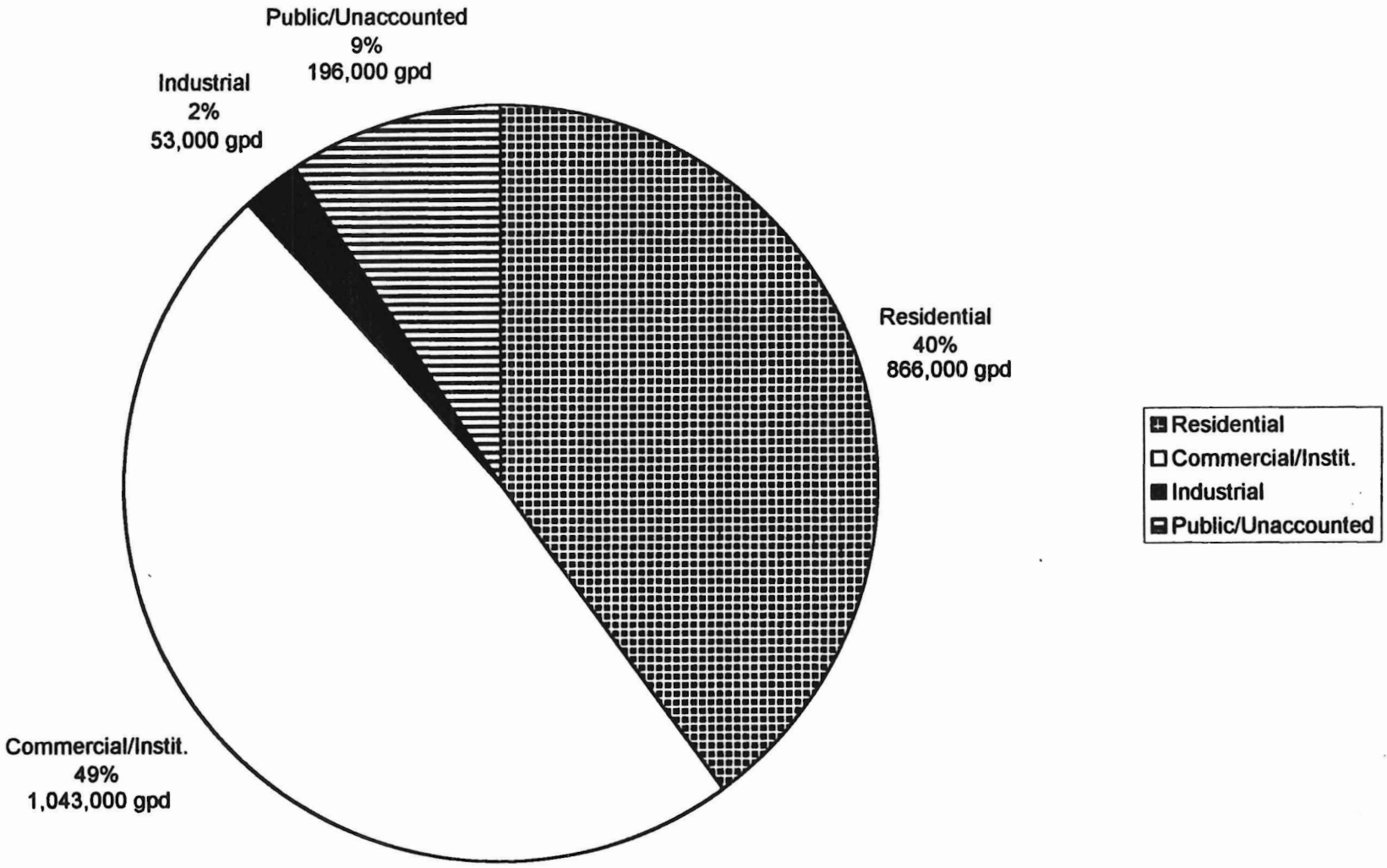


Figure 5.16

Williamstown Water Service Area: 2010 Projected Use

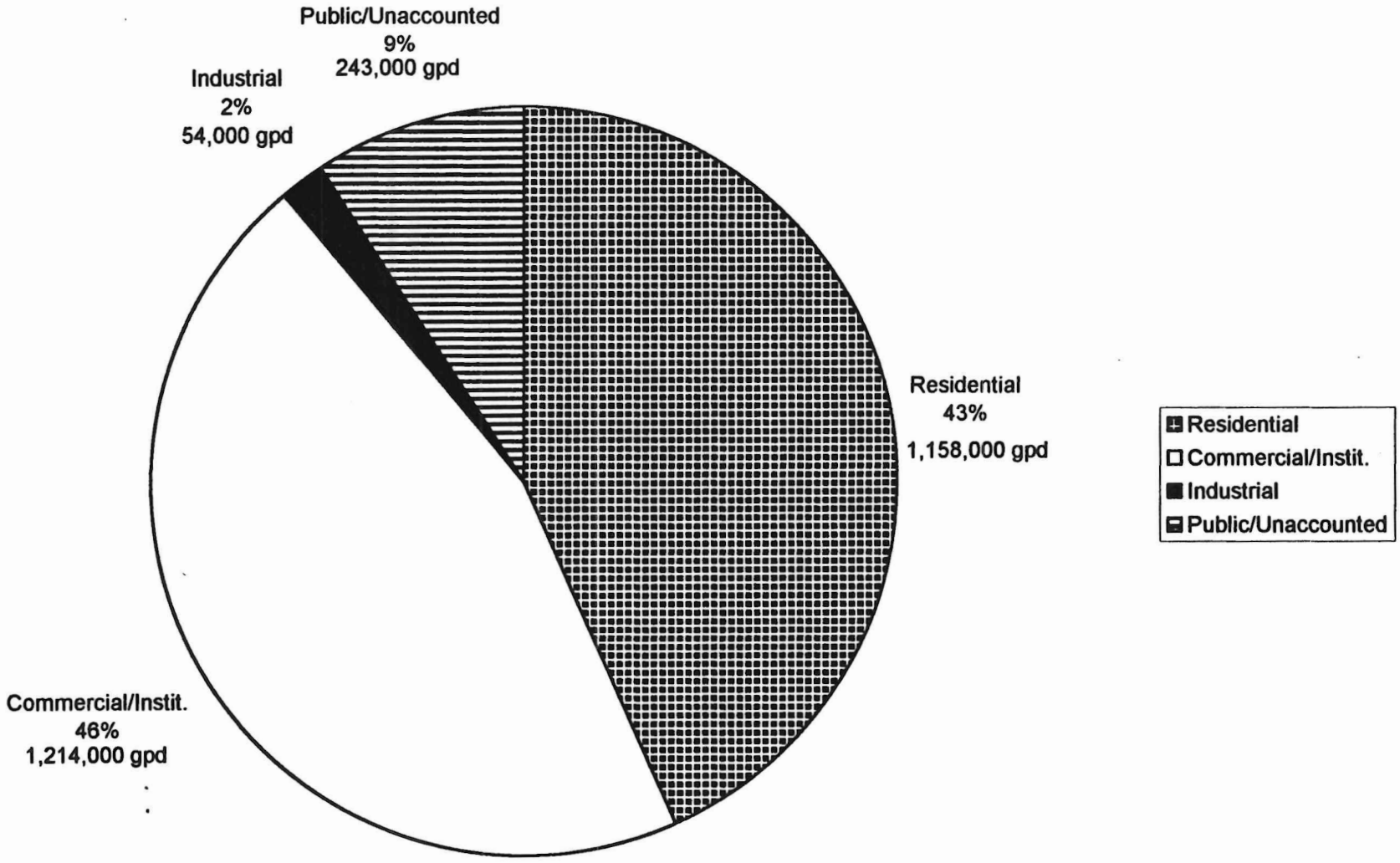


Figure 5.17

Williamstown Water Service Area: 2015 Projected Water Use

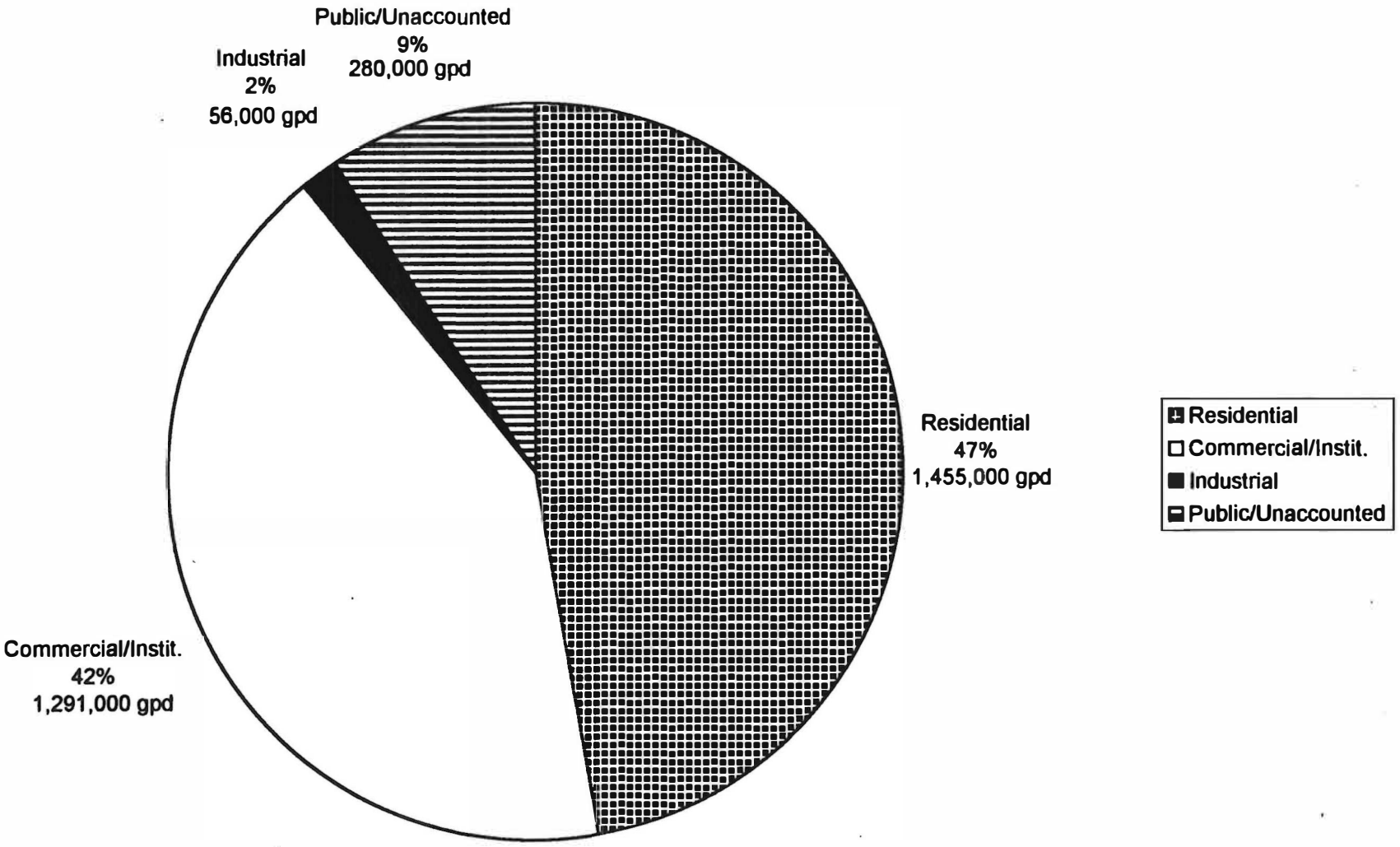
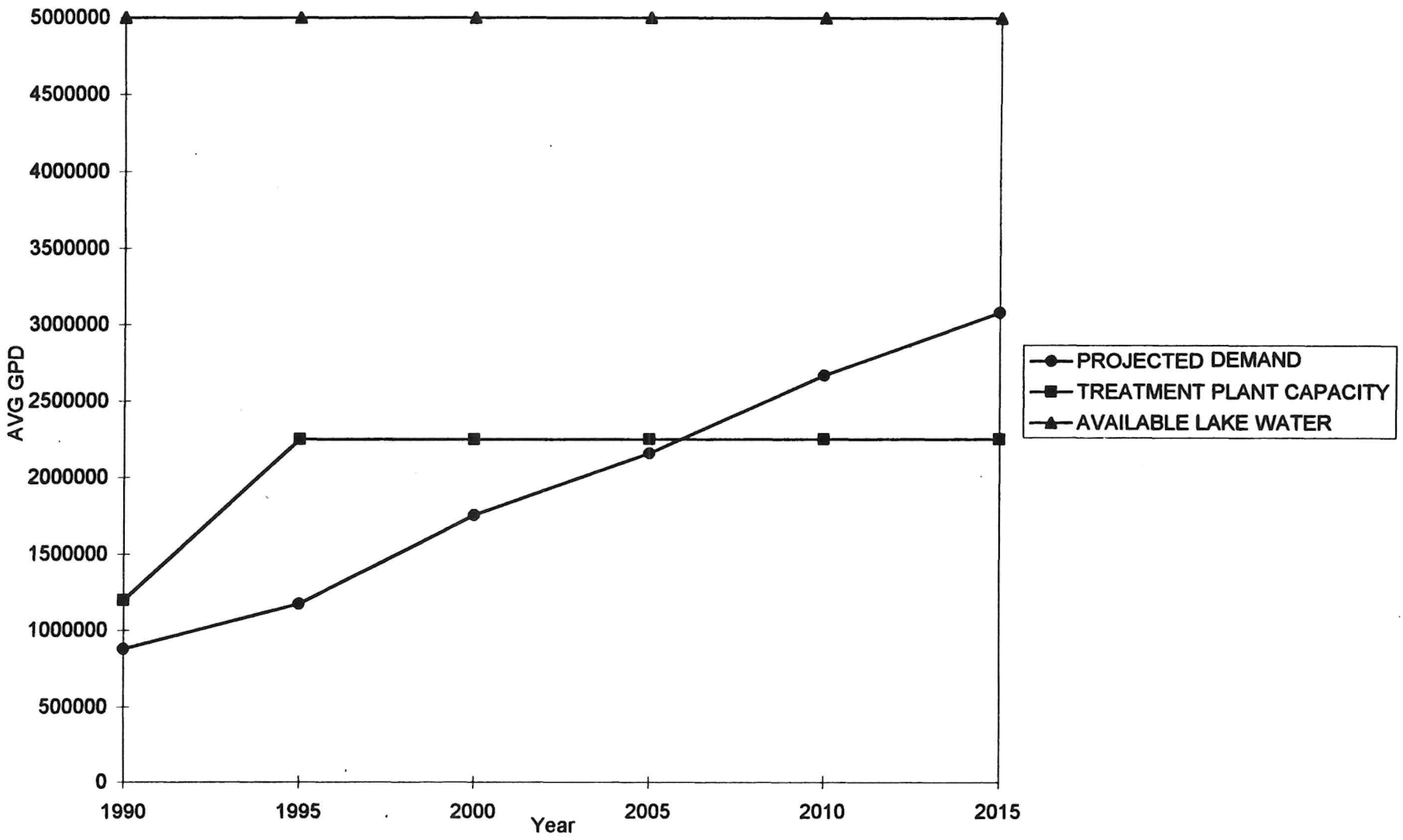


Figure 5-18

Williamstown Water Service Area: Projected Demand Vs. Treatment Capacity and Supply



C. Infrastructure Assessment

This section provides a general assessment of the infrastructure and treatment capacity, if applicable, of the major water suppliers and distributors in Grant County. Map 2 shows the areas currently served by the major suppliers and distributors. Please note that the shaded areas may include some small roads that are not water-served; however, since the base map does not show every road in the county, this is unavoidable. Planned expansions are not shown since none of the potential expansions have been funded with grants or low-interest loans as yet. Also, Bullock Pen Water District will not be adding any new lines to unserved areas until an additional water source is located. No information is available about the infrastructure of the small suppliers and distributors (Telestar Mobile Home Park and Camper's Village).

Bullock Pen Water District

The Bullock Pen Water District currently has a treatment capacity of 1 mgd and a permit withdrawal maximum of 800,000 gpd. Bullock Pen recently applied to the Division of Fish and Wildlife for an increase in the withdrawal maximum to 1 mgd; however, only a 50,000 gpd increase was approved for the new maximum of 800,000 gpd. The treatment plant, constructed in 1962 and subsequently upgraded, is in good condition.

The Water District has a storage capacity of 925,000 gallons in locations noted previously. With an average demand of 675,000 gpd in 1995, storage capacity appears to be adequate at this time. However, there is considerable residential growth in the area and demand is expected to increase. Therefore, Bullock Pen will construct a new storage tank west of Dry Ridge. The exact location has not been determined. The storage system is in generally good condition with the exception of a standpipe in Dry Ridge that needs to be replaced.

Water losses are estimated at five percent. The system is metered. There is no single user that purchases 20 percent or more of the water produced. No accessibility problems related to intake elevation or pump capacity were identified. Bullock Pen has approximately 400 miles of distribution lines. There are approximately 3 miles of 2 inch lines; however, these are scheduled to be replaced with six inch lines in the future. All new lines will be six inch lines in diameter.

Williamstown Municipal Water

The City of Williamstown upgraded its treatment plant in 1994. Treatment capacity is currently 2.25 mgd and the permit withdrawal maximum is 2.25 mgd. The treatment plant upgrade was designed to allow for additional expansion of treatment capacity, if necessary. Treatment processes include: coagulation, sedimentation, chlorination, rapid mix, flocculation, filtration, and fluoridation.

Storage capacity is 1.25 mgd at locations noted previously. Demand for water in 1995 averaged 985,000 gpd and in recent months has been averaging between 1.2 mgd and 1.5 mgd. Storage capacity is adequate currently, but will need to be expanded in the future. The storage system is in good condition.

84°45'

84°30'

38°45'

38°30'

BOONE COUNTY

KENTON COUNTY

GALLATIN COUNTY

PENDLETON COUNTY

OWEN COUNTY

OWEN COUNTY

HARRISON COUNTY

SCOTT COUNTY

Bullock Pen Lake

BPWD WTP

Napoleon

Cardinersville

Folsom

Knoxville

Camper's Village (Well)

Dry Ridge

Williamstown Lake

Williamstown WTP

Four Corners

Downingsville

Jonesville

Williamstown

Doughton

Locust Grove

Holbrook

Heekin

Hilltop

Mason

Lawrenceville

Marcus

Cordova

Keefer

Blanchet

Stringtown

Corinth Lake

LEBANON RD.

GARDNERVILLE ROAD

CRITTENDEN MT. ZION ROAD

VERONA MT. ZION ROAD

DIXIE HWY.

ELLISTON MT. ZION ROAD

ELLISTON MT. ZION RD.

SHERMAN MT. ZION ROAD

DRY RIDGE MT. ZION RD.

WARSAW ROAD

KNOXVILLE ROAD

JONESVILLE FOLSOM RD.

JONESVILLE ROAD

TAFT HWY.

CHIPMAN RIDGE ROAD

HEEKIN RD.

HEEKIN LAWRENCEVILLE RD.

LAWRENCEVILLE ROAD

CORDOVA RD.

CORINTH ROAD

FAIRVIEW RD.

FALMOUTH RD.

OWENTON RD.

N

W

E

S

0 4,000' 8,000' 12,000'

Note:

1. The are several areas within the shaded areas that are not served by central water.
2. The service areas shown hereon were provided by the NKADD.

County Seat
County Line
Water Treatment Plant
Major Road
Minor Road
Lake
Bullock Pen Water Disrict
City of Dry Ridge
City of Williamstown
Corinth Water District
Tri–Village Water District

Map #2
Service Area Map
Grant County, Kentucky

HICKS & MANN, INC.
Consulting Engineers
Land Surveyors
Planners
P.O. Box 9
Williamstown, Ky. 41097
(606) 824–5231

Oct. 29, 1997
L.O. Murphy
GCW-MAP2.DWG

Water losses are estimated at 15 percent. The system is metered. Distribution lines were updated in 1994. The majority of lines are six, eight, or ten inches in diameter. Approximately 1,300 feet of two inch and four inch lines remain, serving a total of eight customers.

Planned improvements include upgrades to the treatment plant including new filters. New lift pumps are also being installed to move water more efficiently from the treatment plant up the hill into the distribution system. No accessibility problems regarding intake elevation were identified.

City of Dry Ridge

Dry Ridge purchases its water from the City of Williamstown. Current storage capacity is 300,000 gallons at locations noted previously. With a recent month average daily demand of 233,000 gpd, storage capacity is adequate at this time. Water losses are estimated at 3 percent. The system is metered. Dry Ridge has approximately 25 miles of distribution lines. All lines are either six, eight, or ten inches in diameter.

The City recently received a Community Development Block grant that will help fund a number of infrastructure improvements including a waterline to the site of the new Grant County High School on the west side of the city. This will improve water pressure for west side residents. The project also includes the addition of a loop in the distribution system serving the E-Z Street water storage tank. This loop will ensure that the tank circulates properly. The project will be completed by the summer of 1998. Other planned improvements include looping lines wherever possible.

Corinth Water District

The Corinth Water District purchases water from the City of Williamstown. Current storage capacity is 120,000 gallons which is about equal to current demand; however, additional storage will be needed in the future as growth continues. The Water District has identified a potential site for either a standpipe or an elevated storage tank. The system is metered. The Water District currently has about 41 miles of distribution lines and anticipates adding an additional 17 miles in the near future. The system has .11 miles of 1 inch lines, .52 miles of two inch lines, 9.76 miles of three inch lines, 7.84 miles of four inch lines, 17.10 miles of six inch lines and 5.87 miles of eight inch lines. Water losses were estimated at seven percent. No pumping capacity inadequacies were identified.

Tri-Village Water District

Tri-Village Water District, located in Owen County, serves approximately 75 customers in the Jonesville area. Treated water is purchased from Owenton Water Works. Current storage capacity is approximately 814,000 gallons. The system is metered. Water losses are estimated at seven percent. Leak detection methods include master meters and driving lines. Additional growth is anticipated in this system; however, no expansions in Grant County are currently planned..

During the summer of 1997, during semi-drought condtions, Tri-Village experienced serious

distribution problems in the northern portion of Owen County, particularly the Wheatley area. Many residents found themselves with little or no water pressure. A hydraulic study was recently completed by Gastineau and Associates. The study concluded that the growth of 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. The high demand was determined to be agricultural, primarily setting tobacco, and residential lawn watering.

The study recommended improvements to both the storage and distribution systems. The Wheatley tank should be replaced with one with a higher overflow elevation and a booster pump should be installed near the US 127/227 intersection. The booster pump is already in the design phase. Another recommendation was to re-negotiate the contract with 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 performed for the study indicated a major restriction in the 12 inch line of the City of Owenton that serves Tri-Village. Further tests are recommended. None of the recommended improvements are located in Grant County.

CHAPTER 6
WATER SUPPLIER SOURCE ASSESSMENT

I. INTRODUCTION

Both major water suppliers rely on lakes as a water source. This chapter is an assessment of the amount of water available to each supplier under normal and drought conditions.

II. GEOLOGIC AND SOIL CHARACTERISTICS

Geology

The geology of Grant County is best understood within a regional context as outlined below.

Bedrock in Northern Kentucky is almost exclusively Ordovician in age. Shale and limestone are the dominant rock types. The predominant formations are the Richmond-Maysville limestones and the older Eden Shales. The most ancient of these Ordovician rocks occur in the upper valleys of the Kentucky and Licking Rivers within Northern Kentucky.

All streams are located as a result of the area's structural geology. The Jessamine Dome astride the Cincinnati Arch has created gorges in Central Kentucky which occur as relatively deep valleys in Northern Kentucky. Steep slopes are most notable adjacent to the ridge top terrain of the Outer Bluegrass at its contact with the Eden Shale Belt and adjacent to the Ohio River. Headward erosion has developed terrain of small hills most notable for the amount of land in slope rather than steepness.

The terminal moraine of the Illinois Continental Glaciation parallels the Ohio River and is intermingled with the residual river hills. Soils of glacial origins are negligible. Pleistocene glaciation is responsible for locating the Ohio River channel, creating raised terraces and raising the levels of major valley floors, as that of the Kentucky River.

Ridge terrain is most extensive north of Williamstown. Urban locations tend to be on ridge lands, river terraces, at stream fords, and at selected river situations. Flooding characterizes most stream site cities and some riverine terraces. Higher terrace and ridge sites are terrain-wise and usually soil-wise, the most developable sites for housing, manufacturing, agriculture, and transportation.

Soils

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

The Eden Soil Association is the dominant one in the county comprising approximately 75 percent

of the land area. Eden soils can be found on the narrow ridges and steep hillsides. Eden soils are moderately deep, well-drained and slowly permeable. The surface layer is loamy or clayey and the subsoil is clayey.

Eden Association soils have poor potential for cultivated crops, hay, and most specialty crops. The main limitations to farming are steep slopes, clayey subsoil, and poor workability. There is fair potential for pasture or woodland. Steep slopes, moderate depth to bedrock, slow permeability, moderate shrink-swell potential and low strength make these soils unsuitable for residential or other urban development.

Lowell-Nicholson Association soils make up approximately 21 percent of the soils in Grant County and is found mostly on long, broad ridges, mainly in the north-central part of the county. These soils are deep, gently sloping to moderately well-drained with a clayey and loamy subsoil. In the county, these soils are used mainly for crops and pasture.

The remaining soils belong to the Nolin-Licking-Otwell Association. This association consists of deep, nearly level to moderately steep, well-drained soils with a loamy or clayey subsoil. The soils are typically found on floodplains and stream terraces. Most areas of this soil association are cleared and used for farming.

Hydric Soils

Hydric soils are defined as those soils 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 the current definition, will include hydric soils, hydrophytic vegetation, and wetlands hydrology. In Grant County, the only hydric soil is Robertsville silt loam. A few very small areas of Robertsville soil can be found along Clark's Creek, near Eagle Creek. McGary silt loam and Newark silt loam may include small areas of hydric soils in poorly drained low spots.

III. SOURCE ASSESSMENT

Bullock Pen Water District

Bullock Pen Water District's source is Bullock Pen Lake which is an impoundment of Bullock Pen Creek. Bullock Pen Lake has an eight square mile watershed and a normal pool volume of 2,464 acre feet or 803,264,000 gallons. Bullock Pen Water District has a variable permit limit ranging from 5500,000 gpd to 800,000 gpd. Average withdrawals range from 500,000 gpd to 600,000 gpd. In the drought of late 1980s, the level of water in the lake did drop to only 24 inches above the intake which was a source of concern. However, Bullock Pen Water District is not considered one of Kentucky's drought vulnerable water systems, undoubtedly because it has access to other sources as noted earlier.

According to minimum standards for reservoirs with a small contributing watershed of less than ten miles set forth in the water supply planning regulations, a source is adequate if the available volume at normal pool provides at least 200 days of supply at the average rate of water use. The following calculations show the number of days of supply at the average rate and at the maximum permitted rate of 800,000.

Bullock Pen Lake Normal Pool Volume: 803,264,000 gallons
Bullock Pen Water District Average Daily Use From Lake: 600,000 gallons
Number of Days to Deplete Source: 1,338
Number of Days to Deplete Source Using Maximum Withdrawal Limit: 1,004

Of course, as mentioned previously, Bullock Pen Water District currently purchases water to meet demand and this is expected to continue. According to projections, Bullock Pen's demand will exceed 800,000 gpd by 2000. It is unlikely that any additional permit increases will be approved given the lake's status as a state wildlife and recreation area. Therefore, if relied upon as the sole supply, the lake would be an inadequate source by 2000.

Map 2A shows the recommended protection area for Bullock Pen Lake. Supply protection will be discussed in detail in Chapter 8.

Williamstown Municipal Water

Williamstown Lake, an impoundment of South Fork Grassy Creek, has a normal pool volume of 6,767 acre-feet or 2,204,883,490 gallons. The permit withdrawal limit is 2.25 mgd and average daily usage is 1.25 mgd. Willliamstown Lake also has a small watershed, so the minimum adequacy standards explained above apply. The following calculations show that the source is adequate at both current and projected demand.

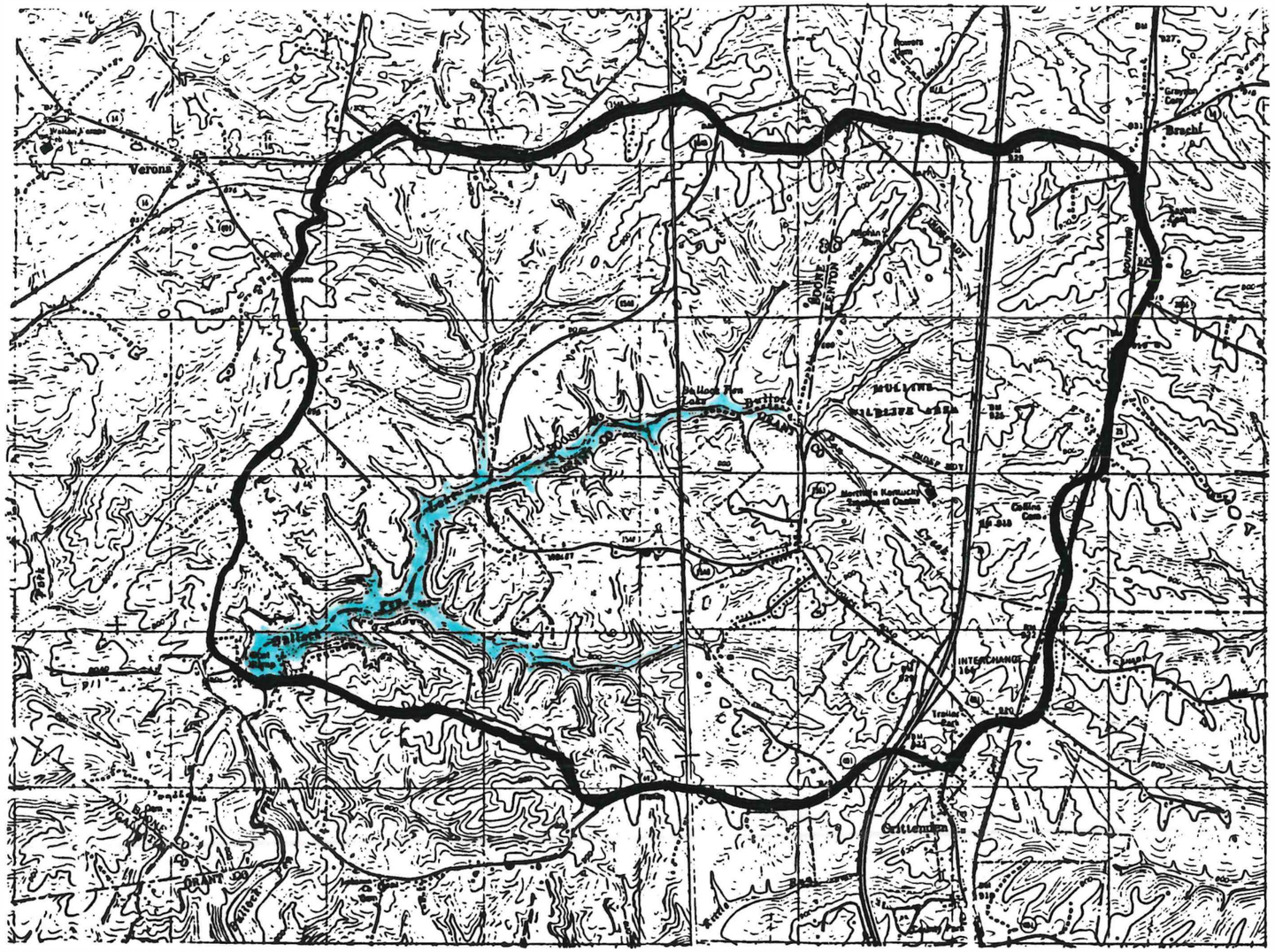
Williamstown Lake Normal Pool Volume: 2,204,883,490 gallons
Williamstown Municipal Water average Daily Use: 1.25 mgd
Number of Days to Deplete Source: 1,763
Number of Days to Deplete Source at Maximum Demand of 3 Mgd: 734

Map 2B shows the recommended protection area for Williamstown Lake.

I-75 Camper's Village Campground

This water supplier relies on groundwater and uses less than 10,000 gallons per day. There is no existing data regarding safe yield, specific capacity, zone of contribution, or zone of influence. No pump tests have been completed or are anticipated. The City of Dry Ridge hopes to extend a water line to this supplier in the next year because this is the only area of the city without public water.

Map 2C shows the recommended protection area. A simple fixed radius was used because this water supplier will be added to the City of Dry Ridge's distribution system in the near future. However, if this should change or be delayed, a wellhead protection plan will be completed by December of 1999. Table 6-1 shows source availability for all three water suppliers.



MAP 2A

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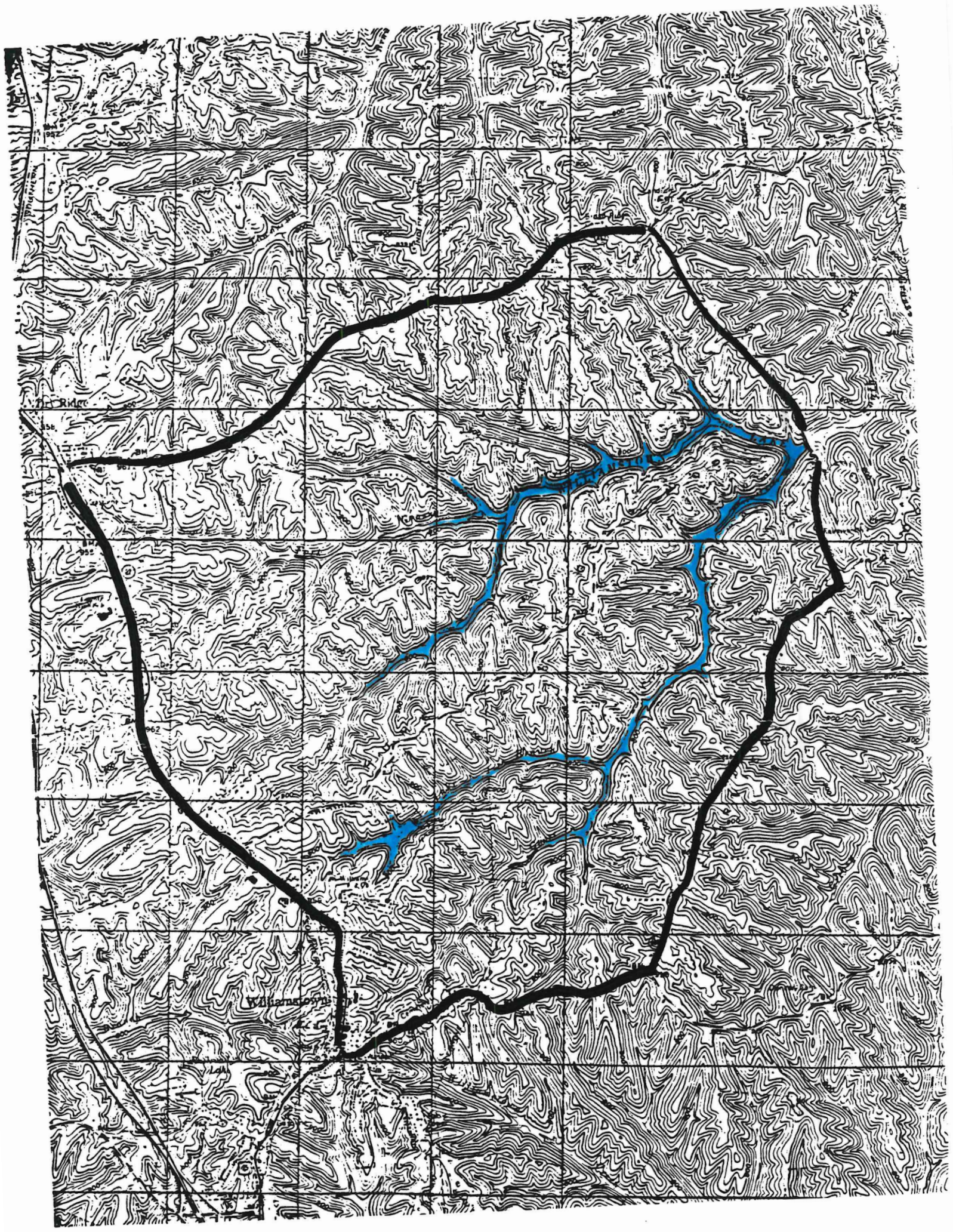
BULLOCK PEN LAKE:
RECOMMENDED PROTECTION AREA

1 inch = 2600 feet



MAP 2B

WILLIAMSTOWN LAKE: RECOMMENDED PROTECTION AREA

1 inch = 2600 ft

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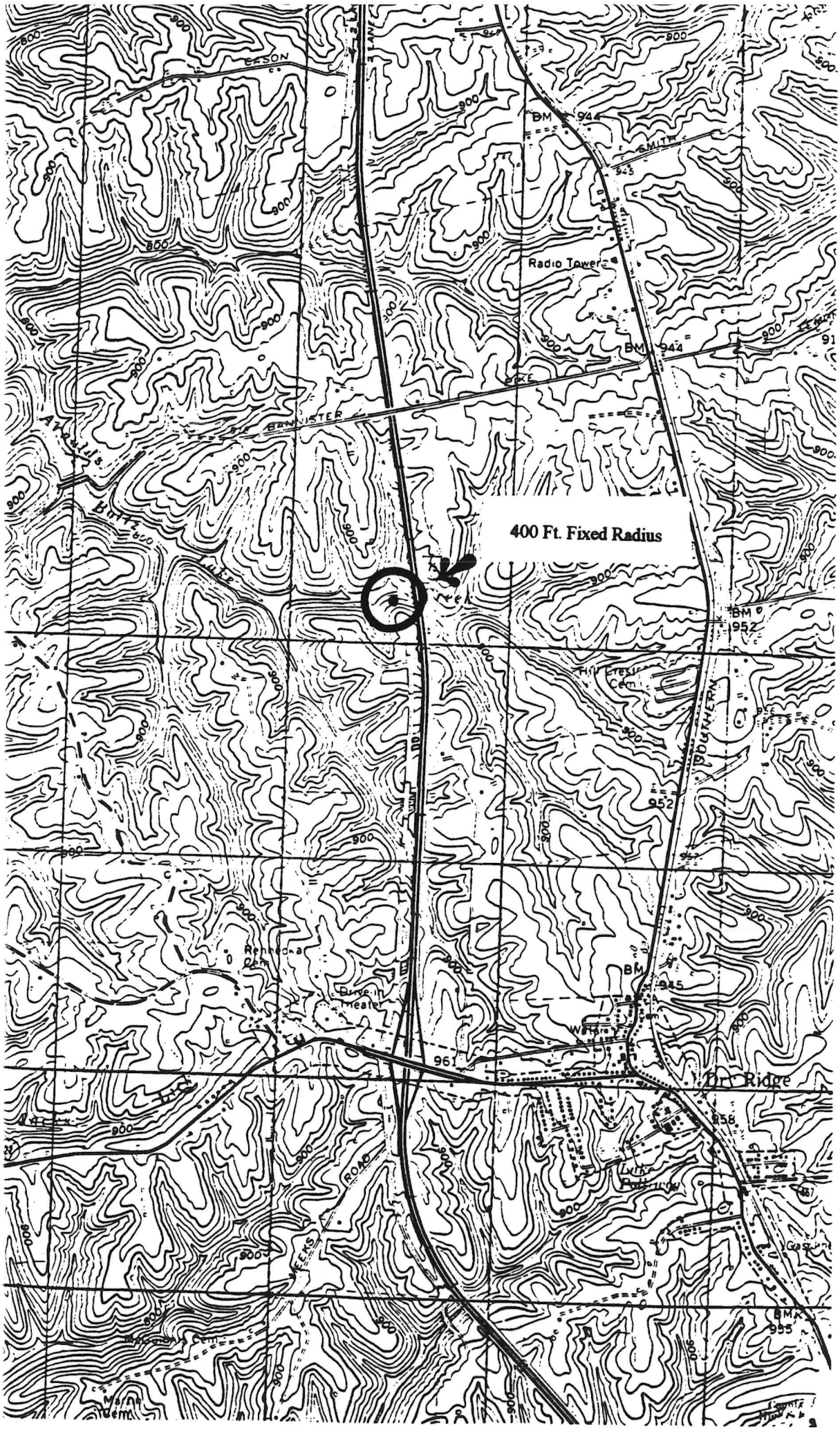

MAP 2C

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CAMPER'S VILLAGE:
RECOMMENDED PROTECTION AREA

1 inch = 2000 feet

Table 6-1: Source Availability

PUBLIC WATER SUPPLIER	SOURCE	SOURCE TYPE	NORMAL/1	MINIMUM/2	DROUGHT/3
Bullock Pen Water District	Bullock Pen Lake	Reservoir	803,264,000 gallons	Not Available	Not Available
Williamstown Municipal Water	Williamstown Lake	Reservoir	2,204,883,490 gallons	Not Available	Not Available
I-75 Camper's Village Campground	Well	Groundwater	Unknown	Unknown	Unknown
Notes	Reservoir	Groundwater Well			
/1	Full Reservoir	Specific Capacity			
/2	7Q10 Inflow	Specific Capacity			
/3	7Q20 Inflow	Safe Yield			

CHAPTER 7
WATER SUPPLY ADEQUACY

I. Adequacy Standards

The Grant County Water Supply Planning Council elected to plan for provision of a continuous level of supply under all conditions and to encourage conservation where practical. While existing sources appear to be adequate through the planning period, the council would like to study the feasibility of developing a new water source. A new source would serve a number of purposes as outlined by the following: 1) a safety buffer if Williamstown Lake were ever to be contaminated; 2) a new reservoir (assuming that is the most feasible alternative) would be a recreational asset; and 3) encourage economic development. The development of a new source will probably take 15 to 20 years including a feasibility study.

II. Application of Adequacy Standards

Bullock Pen Water District

The Bullock Pen Water District withdraws water from Bullock Pen Lake and purchases water from the Cities of Walton and Williamstown. These multiple sources impact the application of adequacy standards. While forecast demand will exceed the permitted withdrawal limit (a maximum of 800,000 gpd) by 2005, the combination of purchased and treated water is adequate through the planning period (Refer to Figure 5.10). However, with the growth in the county, supply adequacy should be reviewed regularly. In addition, there should be close coordination between the Water District and its suppliers.

As mentioned previously, the lake is owned by the Department of Fish & Wildlife. Obviously, those interests are paramount and increased withdrawals from the lake will not be permitted if they impact the lake in a negative manner. A recent request to increase the permitted withdrawal to 1 mgd was denied.

Williamstown Municipal Water

The City of Williamstown withdraws water from Williamstown Lake. As mentioned previously, Williamstown sells water to the City of Dry Ridge, Corinth Water District, and Bullock Pen Water District. While supply is adequate for the planning period, additional treatment capacity will be needed by 2005.

While Williamstown Lake was developed to serve as a water source, it is also a popular recreation area with many seasonal dwelling units. As a part of the recent treatment plant expansion, an engineering study was conducted that looked at the impact of water withdrawals on lake levels. The study considered normal weather conditions as well as the droughts of the early 1930s and the late 1980s. The conclusion was that the treatment plant could be expanded to 5 mgd without appreciable negative effects on the lake.

I-75 Camper's Village Campground

This supplier's source is assumed to be adequate; however, the City of Dry Ridge hopes to provide public water service in 1997 or 1998. Since water quality has been an issue for this supplier, this is probably the best solution.

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, which contributes 50 percent or more of the nation's water pollution, is diffuse, resulting from a range of human activities over a wide geographic area. Non-point source pollution can be generated by agriculture, urban development, 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.

COUNTY-WIDE

Map 3 shows the location of potential point-source pollutants county-wide. The primary sources are package wastewater treatment plants serving subdivisions and mobile home parks. There is also a major landfill located in the Fork Lick Creek Basin. Underground storage tanks (USTs) are not shown on this map because the number of tanks would make the map difficult to read. Rail lines run along US 25 and are a potential source if an accident involving a train carrying some sort of hazardous material occurred. There are no injection wells or agricultural lagoons in the County. More detailed potential pollutant information will be shown, if applicable, on maps of the recommended protection areas for each of the water supply sources.

BULLOCK PEN LAKE

Bullock Pen Lake, the water source for the Bullock Pen Water District, is a 134 acre man-made reservoir owned and operated by the Kentucky Department of Fish & Wildlife Resources. There are no public recreational facilities and the area is a nature preserve. The only recreational use is fishing. Motorboats are limited to 10 HP or less. The 1996 Kentucky Report to Congress on Water Quality found that Bullock Pen Lake fully supported all its uses and was not impaired. Map 4 shows the location of potential contaminants to the Bullock Pen Lake water supply.

84°45'

84°30'

39°45'

38°45'

38°30'

BOONE COUNTY

KENTON COUNTY

GALLATIN COUNTY

PENDLETON COUNTY

OWEN COUNTY

OWEN COUNTY

HARRISON COUNTY

SCOTT COUNTY

Bullock Pen Lake

BPWD WTP

Napoleon

Tenmile Creek Basin

Zion Station

Napoleon Branch

Flat Creek

Tenmile Creek

Sulphur Lick Creek

Kittle Run

LEBANON RD.

VERONA MT. ZION ROAD

CRITTENDEN MT. ZION ROAD

Tenmile Creek

Crittenden

N. Fk of Grassy Creek

GARDNERVILLE ROAD

Flingsville

Gardnersville

DIXIE HWY.

N. Fk Middle Fork of Grassy Creek

Wildcat Branch

Mt Zion

Elliston

ELLISTON MT. ZION ROAD

Little Tenmile Creek

SHERMAN MT. ZION ROAD

Sherman

Grassy Creek Basin

ELLISTON MT. ZION RD.

DRY RIDGE MT. ZION RD.

Eagle Creek

Folsom

Middle Fk of Grassy Creek

Arnolds Creek

Eagle Creek Drainage

Arnolds Creek Basin

Boltz Lake

Camper's Village (Well)

Knoxville

Townsend Branch

WARSAW ROAD

Statlers Run

Buffalo Branch

Clarks Creek

Jacks Lick

Clay Lick

Dry Ridge

KNOXVILLE ROAD

South Fork of Grassy Creek

Williamstown Lake

JONESVILLE FOLSOM RD.

Sycamore Creek

TAFT HWY.

Four Corners

Clarks Creek Basin

Williams Branch

Williamstown WTP

FAIRVIEW RD.

Greasy Creek

Williamstown

Doughton

FALMOUTH RD.

Locust Grove

JONESVILLE ROAD

Downingsville

Jonesville

Straight Fork Creek

Stevens Creek

Rattlesnake Creek Basin

Rattlesnake Creek

Steammill Creek

Clarks Creek

Williamstown Creek

Cooperstown Creek

Sand Lick Branch

Eagle Creek

CHIPMAN RIDGE ROAD

Heekin

HEEKIN RD.

Hilltop

Shinkle Creek

Fork Lick Creek

TAFT HWY.

Holbrook

LAWRENCEVILLE ROAD

Crassy Run Basin

HEEKIN LAWRENCEVILLE RD.

Grassy Creek

CORDOVA RD.

Mason

Fork Lick Creek Basin

Bark Hollow Branch

Lawrenceville

LAWRENCEVILLE ROAD

Long Branch

Marcus

Fork Lick Creek

South Branch

Musselman Creek

Musselman Creek Basin

CORINTH ROAD

Cordova

CORDOVA RD.

Scaffold Lick Creek

Crooked Creek

Crooked Creek Basin

Keefer

Three Forks Creek

Blanchet

Stringtown

Three Forks Basin

Morgan Creek

Corinth Lake

Corinth

OWENTON RD.

Rays Fork Basin

N

W

E

S

0 4,000' 8,000' 12,000'

Note:

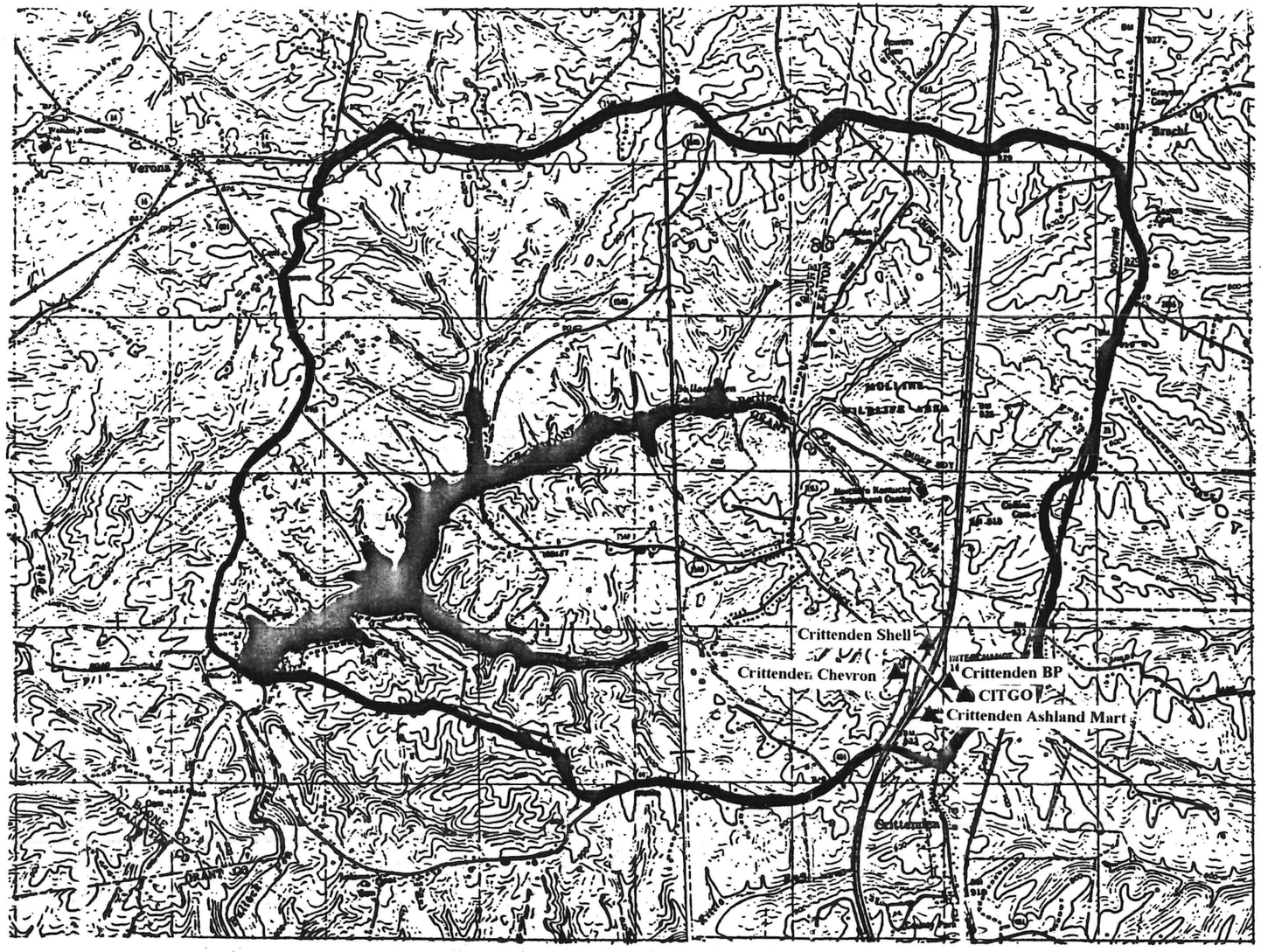
1. The are several areas within the shaded areas that are not served by central water.
2. The service areas shown hereon were provided by the NKADD.

County Seat
County Line
Water Treatment Plant
Wastewater Treatment Plant
Landfill
Major Rood
Minor Road
Lake
Stream
Watershed Boundary

Map #3
Sources of Contamination
Grant County, Kentucky

HICKS & MANN, INC.
Consulting Engineers
Land Surveyors
Planners
P.O. Box 9
Williamstown, Ky. 41097
(606) 824-5231

July 8, 1997
L.D. Murphy
GCW-MAP3.DWG



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MAP 4

BULLOCK PEN LAKE: POTENTIAL POLLUTANTS

1 inch = 2600 feet

Point Sources
There are 26 USTs located at the I-75 interchange. The Chevron USA service station is also a RCRA notifier. There are no known point source discharges to the lake. A potential point source could be the railroad tracks which are partially located in the protection area. Septic systems around the lake, if aging or poorly maintained, are potential pollutants.

Non-Point Sources
There is little development in the recommended protection area surrounding the lake; however, the limited residential and agricultural uses may pose a slight threat. Another potential source of non-point pollution is Interstate 75 which is located in the watershed. Run-off from the Interstate could possibly be polluted with motor oil, gasoline, road salt, or herbicides (from roadside spraying). Tankers traveling the highway carrying hazardous waste are also a potential threat if an accident occurred. Table 8.1 shows potential sources of both point and non-point source pollution, the risk of release, and the degree of hazard. Residential development refers to potential sources of pollution that may be associated with residential land use such as lawn care chemicals and improper disposal of household chemicals.

Soils
A review of the soil survey shows the primary soil in the watershed is Eden silty clay loam (EdE2) which is well-drained with a loamy to clayey surface layer and a clayey lower subsoil. Permeability of the soil is categorized as moderately slow to slow with a permeability of less than two inches per hour.

Security of Access
The Kentucky Department of Fish & Wildlife, as mentioned previously, owns the lake and limits activity on the lake to fishing and the area is a nature preserve; however, there is no security of access to the lake. There is a road that passes over the lake and there are several roads around it as well. Furthermore, no limitations to access are anticipated during the planning period.

LAKE WILLIAMSTOWN

Williamstown Lake serves as the water source for the City of Willamstown and its wholesale customers. In addition to serving as a water supply source, recreational activities on the lake include fishing, boating, and waterskiing. Part of the lake is surrounded by residential development, used primarily for weekend or vacation homes, although there are full-time residents. There are also some agricultural land uses. The area is not served by a sewer system and that is one of the goals identified in the 1996 Grant County Comprehensive Plan update.

According to the 1996 Kentucky Report to Congress on Water Quality, the lake fully supports all its uses including warmwater aquatic habitat, secondary contact water recreation, and domestic water supply.

TABLE 8.1
POTENTIAL CONTAMINATION SOURCES

WATER SOURCE	SOURCES OF POLLUTION	Short-Term Vs. Long-Term Hazard	Chance of Contaminant Release	Contaminant Hazard
Bullock Pen Lake				
	Septic Tanks	Long-Term	Moderate to High	Low
	Residential Development	Long-Term	Low	Low to Moderate
	Agriculture	Long-Term	Low	Low to Moderate
	Interstate Run-Off	Long-Term	Low to Moderate	Low to High
	Railroad Tracks	Long-Term	Low	Low to High
	USTs	Long-Term	Low	High
Willlamstown Lake				
	Septic Tanks	Long-Term	Moderate to High	Low
	Residential Development	Long-Term	Low to Moderate	Low to Moderate
	Agriculture	Long-Term	Low	Low to Moderate
	Railroad Tracks	Long-Term	Low	Low to High
	USTs	Long-Term	Low	High
I-75 Camper's Village				
	Campground Users	Long-Term	Low	Low
	Septic System	Long-Term	Low	Low

Point Sources
Map 5 shows the location of pollution sources in the recommended protection area of Lake Williamstown. Given the lack of central sewers, it is highly probable that there are some straight pipe septic discharges into the lake; however, no specific locations have been identified. Aging and poorly maintained septic systems also pose a threat. The railroad tracks are also partially located within the protection area which is a potential hazard. There are a total of 15 USTs located in the recommended protection area, with the majority located along US 25. Value Oil, which has 4 USTs, is also a RCRA notifier. The Williamstown Baptist Church was listed on the State Superfund list as having an active petroleum incident.

Non-Point Sources
Again Table 8.1 identifies potential contaminant sources, the risk of release, and the degree of hazard. Residential development refers to potential sources of pollution such as lawn care chemicals or improper disposal of household products. Agricultural contaminants include livestock waste (primarily cattle) and fertilizer or pesticide run-off from crops.

Soils
The soils found in the recommended protection area are EfE3, EdD, and LOC. Each of these soils is rated as poor for septic systems because the percolation time is very slow. Therefore, septic systems are likely contaminants.

Security of Access
Currently, there is no security of access to the water supply. No security measures are anticipated during the planning period because of the multiple uses of the lake for recreation and water supply.

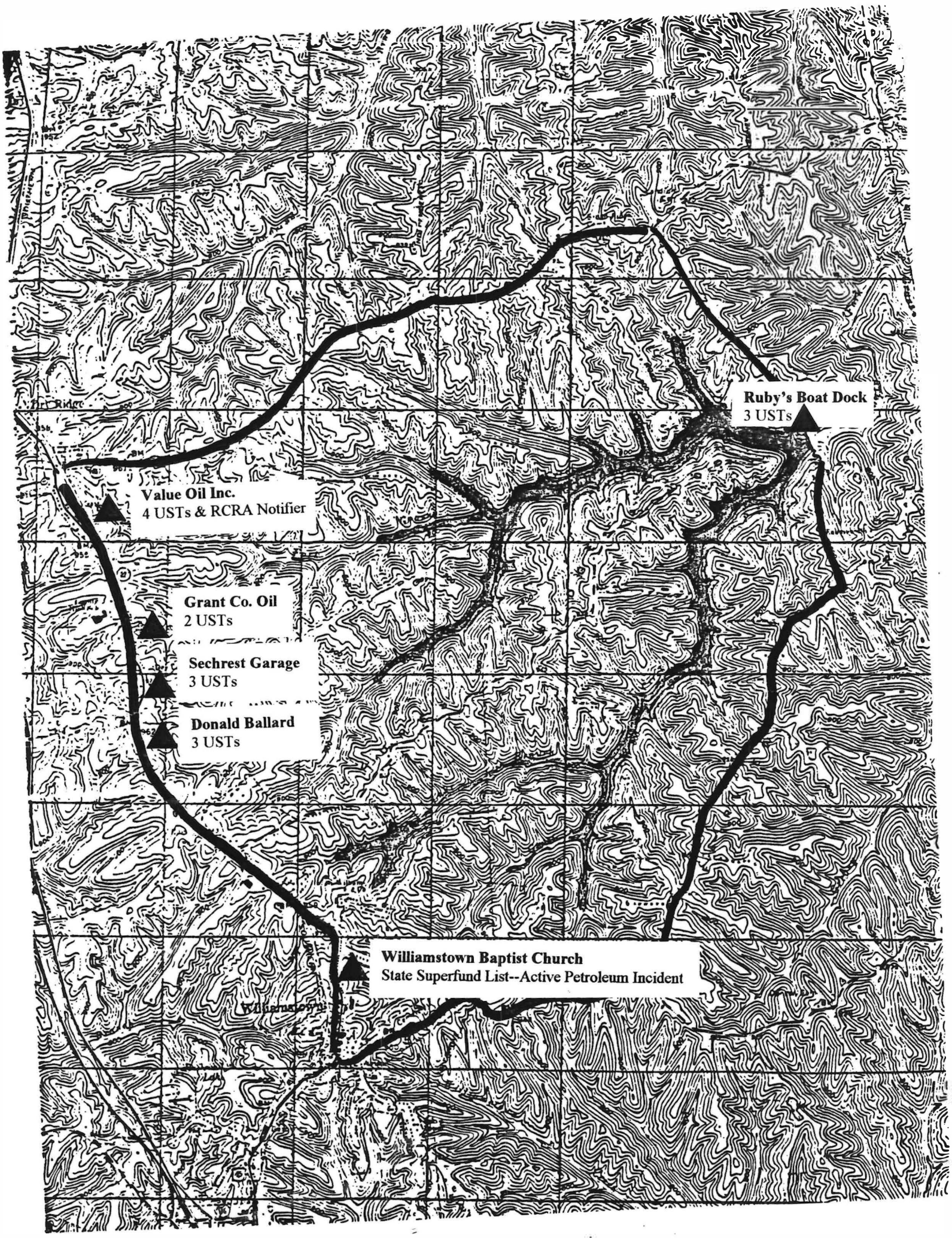
I-75 CAMPERS VILLAGE

As mentioned previously, the City of Dry Ridge plans to provide public water to this supplier which would end the reliance on groundwater. Potential sources of pollution are not mapped because the recommended protection area is so small.

Point Sources
None were identified.

Non-Point Sources
Table 8.1 describes non-point sources which could include visitors at the campground who might improperly dispose of or spill common household chemicals, however the risk would be fairly small.

Soils
Primary soils in found in the recommended protection area (refer to Map 2C, p. 6-6) are EfE3 and LoD. Both have very low permeability with EfE3 rated at .06 to .6 inches per hour and LoD



MAP 5

WILLIAMSTOWN LAKE: POTENTIAL POLLUTANTS

1 inch = 2600 ft

N

rated at .2 to .6 inches per hour. This low permeability would help protect the ground water in a potential contaminant release.

Security of Access
The campground is private and visitors are asked to check-in at the office, so access is somewhat limited. No further limitations are anticipated.

II. PROTECTION MEASURES

The primary focus of this section is on local, rather than state and federal, regulatory and non-regulatory protection measures to protect Grant 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 County's Comprehensive Plan, Zoning Ordinance, and Sub-Division Regulations do contain some applicable provisions.

The 1996 Grant County Comprehensive Plan makes recommendations regarding future land use patterns. While the Comprehensive Plan is not a regulatory document, all future land use decisions related to the zoning ordinance are supposed to be based on the Comprehensive Plan, and therefore, the plan does have a legal basis. The future land use maps in the Comprehensive Plan (See Appendix F) primarily recommend agricultural and rural residential or low density residential uses in the protection areas of Bullock Pen and Williamstown Lake. In the protection radius of I-75 Camper's Village Campground, recommended uses are agriculture or rural residential.

In addition, the County's Zoning Ordinance and Sub-Division Regulations do require erosion control plans as a part of development plans (an excerpt can be found in Appendix F).

Supply Protection Recommendations

A public hearing on supply protection recommendations was held on September 9, 1997 (See Appendix B). The following supply protection recommendations were adopted at the September 9, 1997 Planning Council meeting.

1. Continue to encourage land use controls, including zoning and sub-division regulations, that protect existing water sources.

2. Promote the expansion of sewer service to areas located in the watersheds of Williamstown, Bullock Pen, Boltz, and Corinth Lakes.

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

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

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. While no supply inadequacies were identified, the Planning Council has elected to investigate potential alternative water sources because growth in the County has been so rapid.

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
There are no federal or significant rain or streamflow gages in the County.

Wetlands
There are no wetlands located in the County.

Hydric Soils
Hydric soils were discussed in Chapter 6. Copies of maps showing areas of Robertsville silt loam can be found in Appendix G.

Outstanding Resource Waters and Coldwater Aquatic Habitat
Eagle Creek is the only Outstanding Resource Water in the County (refer to Planning Unit Map on p. 1-3).

Generalized Land Use
Existing land use maps are located in Appendix G. A highway map, also in Appendix G, shows the location of the Curtis Gates Lloyd Wildlife Management Area. The Curtis Gates Lloyd Wildlife Management Area, maintained by the Department of Fish & Wildlife, has 1,179 acres and offers hunting and fishing.

Geology
There are no unique geological conditions that impact water quantity or quality. According to the Groundwater Sensitivity Map for Kentucky, most of Grant County has a low hydrogeologic sensitivity of 2 (See Appendix G). There are several areas with a sensitivity of 3. These low sensitivity ratings indicate higher percentages of shale layers and a lack of karstic features.

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 exists for the County. Very 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
Appendix G contains brief descriptions and maps showing the location of recreational facilities on the four lakes in the County.

Historical Stream-Flow Data
No data exists since there are no gages in the County.

Average Monthly Precipitation
The climatological station of record for Grant County is the Northern Kentucky/Greater Cincinnati Airport. Annual precipitation averages 41.33 inches (30-year record). Mean annual snowfall (46-year record) is 23.20 inches. The mean number of days with precipitation of .01 inches or more is 130.20 (46-year record). The mean number of days with thunderstorms is 42.60 (46-year record).

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

January - 2.59 inches
February - 2.69 inches
March - 4.24 inches
April - 3.75 inches
May - 4.28 inches
June - 3.84 inches
July - 4.24 inches
August - 3.35 inches
September - 2.88 inches
October - 2.86 inches
November - 3.46 inches
December - 3.15 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 G.

Well Data
There are no wells that are used at an average rate of more than 10,000 gallons per day.

Generalized Quality of Water
There are no known water quality problems with either Bullock Pen or Williamstown Lake. However, the I-75 Camper's Village Campground has had problems with iron content.

Dams
The dam on Williamstown Lake is owned by the City of Williamstown. The dam on Bullock Pen Lake is owned by the Department of Fish & Wildlife.

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

CHAPTER 10
WATER SUPPLY ALTERNATIVES

As discussed previously in Chapter 7, Water Supply Adequacy, there are no identified inadequacies for any of the County's suppliers. However, with the burgeoning growth in the County (fourth fastest-growing in the state), the Water Supply Planning Council has decided to pursue additional sources of water, realizing that implementation of such a project is a long-term endeavor.

The following alternatives were compiled by the Planning Council. An evaluation form was developed to rate each alternative on a number of factors (a copy of the form can be found in Appendix H). Each alternative was rated on its own merits, not in comparison to other alternatives. Appendix H also contains a ranking of the alternatives and spreadsheets showing the points each alternative received. Evaluation forms were distributed to the Water Supply Planning Councils, the Utility Boards, City Council members, and interested citizens. The Public Hearing Notice also stated that citizens could pick up a copy of the form at the Judge/Executive's office (See Appendix B for a copy of the notice).

I. EVALUATION OF ALTERNATIVES

The following is a summary of each of the alternatives evaluated by the Planning Council.

Dam Below the Dam on Williamstown Lake

A dam would be placed below the existing dam at either Fairview Road or Hogg Ridge Road. Both potential dam locations are in Pendleton County. The watershed area would be approximately 17 square miles and an extremely rough cost estimate for dam construction is between $5,000,000 to $10,000,000. This does not include land acquisition. Water could be pumped from the new reservoir to the existing Williamstown treatment plant. Depending upon the height of the dam, the reservoir could be physically isolated from Williamstown Lake. Physical isolation would be beneficial if there were a contamination event. There is very little development in the proposed watershed area and few residents would be displaced. There are no significant contaminant sources.

New Reservoir in Lemon-Northcutt Road Area

The proposed reservoir is located in the Grassy Creek watershed in the northern portion of the County. The reservoir would be situated in the Bullock Pen service area, where considerable growth is occurring. Several property owners have volunteered to donate their property because they see this as important for the future of the County. Unlike lakes that have been proposed in the region in the past, such as Eagle or Callansville, this project would not take any prime agricultural land. At most, there are one to two acres of bottomland. The majority of the land is very steep. There are approximately eight package wastewater treatment plants in the watershed area. These would need to be upgraded or taken off-line with a centralized sewer system. A

treatment plant would also be needed.

New Reservoir in Either Rattlesnake Creek or Musselman Creek Basin

Both of these watersheds, located in the southwest portion of the County, are relatively undeveloped which would make it easier to control potential contaminant sources. There are no wastewater treatment plants in either watershed area. A water treatment plant would need to be constructed.

Interconnection Between the Bullock Pen Water District and the Northern Kentucky Water Service District

The Northern Kentucky Water Service District received a Community Development Block Grant to extend water lines in southern Kenton County. This extension would allow for interconnection; however, details on rates and the amount of water that could be delivered would have to be negotiated. This alternative could be accomplished in the short-term and would provide an additional water source in the rapidly growing northern part of the County. There is a concern on the part of some citizens with regard to drinking Ohio River water. There is a perception that the water is more contaminated and generally less healthy than other sources. However, Bullock Pen, through its water purchases from Walton, already utilizes Ohio River water.

Constructing a Pipeline Through Either Gallatin or Pendleton County and Pumping Water Directly from the Ohio River

The Ohio River is an almost limitless source that is not very drought-vulnerable. However, a new treatment plant would need to be constructed and the costs of pumping the water would be very high. In addition, as mentioned previously, there is a perception that this water source is unhealthy.

Eagle Lake Project in Owen & Scott Counties

A feasibility study for the Eagle Lake project was proposed in the early 1990s by the U.S. Army Corps of Engineers. The 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 was 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 the project was "dead" and that no more flood control projects would be built.

This alternative would have a long-term implementation. Also, a new treatment plant would have to be constructed. The reservoir would be fairly far removed from the growth areas in Grant County.

CHAPTER 11
PRIMARY WATER SUPPLY ALTERNATIVE

I. SELECTION PROCESS FOR PREFERRED ALTERNATIVE

As detailed in the previous chapter, alternative evaluation forms were made available to the public, Water Boards, City Councils, and the Fiscal Court. Approximately, 25 forms were returned (Refer to Appendix H for summary). The evaluation forms were analyzed and the compiled results were presented at a public hearing on March 10, 1998. Approximately 30 people were in attendance.

At the public hearing, a summary of each of the alternatives was presented, followed by an analysis of the evaluation forms. As a result of the evaluation forms, water supply alternatives were ranked as follows:

	Alternative	Score
1.	Dam below the dam on Williamstown Lake	539
2.	New reservoir in Lemon-Northcutt Road area	533
3.	Interconnection between Bullock Pen W.D. and the Northern Kentucky Water Service District	510
4.	Eagle Lake project	368
5.	New reservoir in either Rattlesnake Creek or Musselman Creek Basin	323
6.	Pipeline to Ohio River through either Gallatin or Pendleton County	284

The public was invited to comment on the alternatives and their ranking. A summary of the public hearing can be found in Appendix A.

II. PREFERRED ALTERNATIVES

A regular water supply planning council meeting followed immediately after the public hearing and all those in attendance chose to remain. It was obvious that there was some consensus on the top three alternatives. Alternatives 1 and 2 were extremely close in the ranking and alternative 3 was just a few points behind.

The Water Supply Planning Council concurred that there is interest in a new reservoir either below the existing Williamstown Lake or in the Lemon-Northcutt Road area; however, it is impossible to make a selection without a feasibility study conducted by an engineering firm. Therefore, the preferred alternative is to pursue a feasibility study as a part of plan implementation.

There was consensus that alternative 3, interconnection between Bullock Pen and Northern Kentucky, should be pursued as well. This is a short-term alternative that could be accomplished in the near future and would provide an additional water source for the rapidly growing Bullock Pen Service area. A new reservoir, while clearly desirable, based on evaluation forms and public input, is a much longer-term solution. It may take as long as twenty years to come to fruition.

CHAPTER 12
EMERGENCY PLANS

I. WATER SHORTAGE RESPONSE PLANS

Since no drought vulnerability was associated with any of the County's water sources, water shortage response plans were not prepared. However, as an outgrowth of the planning process, many of the County water suppliers and distributors are interested in preparing water shortage response plans and are currently reviewing some existing models. If any of the suppliers or distributors do adopt such plans, they will be amended into the water supply plan during the annual review process.

II. CONTAMINATION RESPONSE PLANS

A. Williamstown Municipal Water

Notification Procedures

The Utility Manager would be responsible for notifying the public, the other utilities, and state and federal agencies. Public notification would be accomplished through the newspaper and television and radio stations. In addition, the Manager would advise each utility as to what steps should be taken.

Emergency Water Sources

Williamstown has 1.45 mg of storage and generally, all towers and clear wells are kept full. If conservation were used, Williamstown could provide all city residents and wholesale customers (Bullock Pen, Dry Ridge, and Corinth) for 48 hours. Williamstown is currently in the process of connecting to the Pendleton County Water District which would be an additional source in the case of an emergency. Some of the wholesale customers do have alternative supply options. Bullock Pen could maximize its use of Bullock Pen Lake or purchase water from other suppliers. Dry Ridge also has an emergency interconnection with Bullock Pen. In a longer-term emergency, it may be possible to pump water temporarily from another lake, such as Boltz, to the treatment plant.

Distribution System Problems

No significant problems were identified.

Threat of Contamination

A threat of contamination would be handled in the same manner as a real event. The water supply would be isolated from the plant and distribution system until it could be determined that the water was safe. The Division of Water and County Emergency Response Team would also be contacted and consulted.

B. Bullock Pen Water District

Notification Procedures

The General Manager would be responsible for notifying the public and applicable state and federal agencies. Public notifications would be accomplished through the newspaper and local radio and television stations.

Emergency Water Sources

Bullock Pen has 925,000 gallons of storage, which would probably last 36 hours at normal usage levels. Since Bullock Pen uses water from a variety of sources (Bullock Pen Lake, purchases from Walton and Willliamstown), in a contamination event, it would be possible to rely more heavily on the unaffected sources. If Bullock Pen Lake experienced a long-term contamination event, the utility would have to rely solely on purchased water.

Distribution System Problems

No distribution system problems were identified that would affect the ability of the water district to cope with a contamination event.

Threat of Contamination

If there were a threat of contamination, the treatment plant would be shut-down until testing assured that the water is safe. Purchased water would be used exclusively during that period.

C. I-75 Camper's Village Campground

If the groundwater were contaminated, the Campground Manager would notify visitors. The Campground owner, Ms. Dorothy Jamieson, would notify applicable state and federal agencies. Campground visitors would have to rely on bottled water, possibly indefinitely, until the problem could be resolved. As previously mentioned, the City of Dry Ridge hopes to provide public water service to the campground.

CHAPTER 13
IMPLEMENTATION

I. MEETING SCHEDULE

The Grant County Water Supply Planning Council plans to continue meeting bi-monthly. This will ensure that implementation activities stay on schedule.

II. PLAN UPDATES AND AMENDMENTS

Once the Grant 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, a feasibility study to look at potential locations for a new water supply reservoir, will be the focus and the responsibility of the Council for the next several years. The Council has already held a joint meeting with the Pendleton County Water Supply Planning Council to determine their interest in a regional project such as a reservoir below the existing Williamstown Lake (see July 14, 1998 meeting summary in Appendix A).

The Bullock Pen Water District will be responsible for pursuing the other preferred alternative, interconnection with the Northern Kentucky Water Service District. Preliminary discussions are underway.

Timetable

Drafting a Request for Proposals for Feasibility Study - October/November 1998
Review of Proposals Received and Selection of Firm - December 1998/January 1999
Feasibility Study - February/July 1999

Cost and Methods of Financing

The City of Williamstown and the Grant County Fiscal Court have allocated a total of $20,000 for the study in their budgets.

Authority to Implement Plan

The Grant County Water Supply Planning Council will be charged with implementation of the plan at the present time. However, a more regional approach, such as including the Pendleton

County Water Supply Planning Council, is anticipated.

CHAPTER 14
PLAN APPROVALS

Council Members

Mayor Norman Ferguson
City of Dry Ridge
Planning Council Chair

Bobby Burgess
Bullock Pen Water District

Mayor Glenn Caldwell
City of Williamstown

Barbara Cammack
Grant County Health Department

June Hedrick
Telestar Mobile Home Park

Mayor Martha Hicks
City of Crittenden

William Hill
Corinth Water District

Judge/Executive Shirley Howard
Grant County Fiscal Court

Dorothy Jamieson
I-75 Camper's Village

Gordon Taylor
Williamstown Municipal Water

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

Other Signatures

A number of citizens and elected officials regularly attended and participated in Planning Council meetings. The following signatures indicate their participation in the process.

Pat Conrad

APPENDIX A: MINUTES

MINUTES

Grant County Water Supply Planning Council
October 30, 1995

In attendance: June Hedrick, Telestar Mobile Home Park
Dick Austin, Williamstown Magistrate
Norman Ferguson, Mayor of Dry Ridge
Shirley Howard, Judge/Exec. of Grant Co.
William Hill, Corinth Water District
Dorothy Jamieson, I-75 Camper Village
Gordon Taylor, Williamstown Water Dept.
William R. Catlett, Bullock Pen Water Dist.

The meeting began at 7:00 p.m.

Possible emergency sources of water such as Boltz Lake were discussed. Cooperative relationships among water districts were also discussed as a means to cope with water shortages.

William Hill suggested that a Directory of Water Districts with service areas and contact numbers would be useful. Possibly, it could be published annually in the Grant County News.

A brief discussion touched on existing long-range water supply plans. The only plan identified was the 1990 Licking River Study by the U.S. Army Corps of Engineers.

Possible new lakes were discussed as a future water supply source. Three had been proposed earlier, but all were turned down. There was interest in finding out more about the proposal to dam Eagle Creek several years ago. What was the proposed capacity of that source?

The feasibility of a county-wide water district was discussed. Consensus was that several legal hurdles stood in the way as some water suppliers and distributers were operated by municipalities and others were districts operated by boards.

Possible meeting dates were discussed with the next one scheduled for either November 13 or 14. The meeting will be advertised in the Grant County News.

The meeting adjourned at 8:20 p.m.

GRANT COUNTY WATER SUPPLY PLANNING COUNCIL

Public Hearing & Planning Council Meeting

November 14, 1995

In Attendance:

Gordon Taylor
Dick Austin
Paul Gustafson
Mayor Norman Ferguson, Chair
Judge/Executive Shirley Howard
Bobby Burgess
William Threlkeld

The public hearing preceded the meeting and several additions were made to the planning objectives after some discussion. The first was to include coordination among water suppliers and distributors. The second was a prioritization of water uses for planning purposes as follows: residential, industrial/commercial, and fire protection. Goals and objectives were adopted following a motion by Bobby Burgess and a second by Judge Howard.

Several other issues were discussed briefly. The feasibility of raising the water in Williamstown Lake by more than 1 foot was discussed and considered to be too detrimental to existing lakeside improvements. The possibility of dam beneath the existing dam was discussed.

Revised minutes of the previous meeting were distributed and the meeting adjourned at 8:00 p.m..

GRANT COUNTY WATER SUPPLY PLANNING COUNCIL

November 12, 1996 Meeting Summary

In Attendance:

Judge/Executive Shirley Howard - Grant County Fiscal Court
Mayor Robert Hall Jones - City of Williamstown
William Hill - Corinth Water District
Gordon Taylor - Williamstown Municipal Water
Magistrate Dick Austin - Grant County Fiscal Court
Bobby Burgess - Bullock Pen Water District
Heidi Van Keuren - Northern Kentucky Area Development District

The meeting began at 7:00 p.m.. Grant County Water Supply Plan binders were distributed and the contents to date were reviewed. Ms. Van Keuren explained that the format of the plan is dictated by the water supply planning regulations.

The council reviewed maps prepared by the Kentucky Geological Survey showing existing waterlines in Grant County, color-coded by utility. The possibility of contracting with the Kentucky Geological Survey or other agency to fulfill the mapping requirements of the plan was discussed. Currently, NKADD does not have in-house computerized mapping capabilities.

A previous comprehensive water supply plan, the 1990 Licking River Basin Study, prepared by the U.S. Army Corps of Engineers was discussed. In this plan, both Bullock Pen and Williamstown Lake were considered adequate sources to meet demand through 2020. However, since Grant County is one of the fastest-growing counties in Kentucky, this plan does not adequately assess future growth. Therefore, the council decided to continue with the water supply planning process.

The information obtained from the surveys distributed to the utilities was reviewed and information that was outdated or incorrect will be corrected. All the utilities anticipate growth. There are many new subdivisions planned in the county. Bullock Pen is going to begin a ten year plan soon to address its explosive growth. Bullock Pen is also asking for the Division of Fish and Wildlife for permission to increase its water withdrawal from 750,000 gpd to 1,000,000 gpd.

The results from the IWR-MAIN computer model for the Bullock Pen Water Service area were reviewed. Ms. Van Keuren cautioned that the model was designed for urban areas and results should be compared with local projections and knowledge. The model showed that Bullock Pen can meet its demand through 2020 with a combination of treated and purchased water; however, this assumes that the City of Williamstown will be able to provide 500,000 gallons per day or even more. With such rapid growth, this may not be possible. Therefore, the Council would like to identify and begin work on developing an alternative water source or sources.

A number of possible alternative sources were briefly discussed including: a dam below the existing dam on Williamstown Lake; the Eagle Creek project that was rejected several years ago; a potential water treatment plant in western Boone County; other potential reservoir projects; and the possibility of Kentucky American extending a line north along I-75.

The demand projections for the Williamstown Water Service area were not completed. Mr. Taylor will prepare some estimates based on local knowledge. It is estimated that the City alone will be using 1.5 mgd by 2015.

The next meeting was scheduled for Tuesday, January 14, 1997 at 7:00 p.m. in the Judge's office. The meeting adjourned at 8:20 p.m..

GRANT COUNTY WATER SUPPLY PLANNING COUNCIL

January 14, 1997 Meeting Summary

In Attendance:

Mayor Norman Ferguson
Judge/Executive Shirley Howard
William Hill
Gordon Taylor
Pat Conrad
Garry Conrad
Bobby Burgess
Mayor Robert Hall Jones
Heidi Van Keuren

The meeting began at 7:00 p.m. with a review of the November meeting summary. Judge Howard noted that the Bullock Pen Water District was asking for an increase in the Bullock Pen Lake permit withdrawal limit from the Department of Fish & Wildlife. The Judge asked if the planning council could offer any support for this effort. Mr. Burgess replied that the supporting documentation had already been submitted, but if any public hearings were held or any other assistance were needed, the planning council will be informed.

Ms. Van Keuren asked if the new plastics plant locating in Crittenden used a lot of water. Council members did not think so. Discussion then followed about the potential water supply problems that would arise if a plant using 200,000 gpd did locate in the county.

Ms. Van Keuren updated the council on a December 1996 meeting with DOW Water Quantity Section. DOW would like a draft of Phase I completed by June and emphasized that the deadline for the completed plans is July 15, 1998. No extensions will be granted. DOW staff did not have many recommendations or suggestions regarding the development of a new water supply source. Staff did suggest that a private firm may be cheaper than the U.S. Army Corps of Engineers or other public agencies.

Ms. Van Keuren also updated the council on the Kenton County Water District's plans. By June, KCWD hopes to make a decision between purchasing water from the City of Cincinnati or constructing a new treatment plant in western Boone County. KCWD has also applied unsuccessfully for grants to serve a portion of southern Kenton County and to hook-up with Bullock Pen Water District.

Mr. Burgess updated the council of BPWD's growth in the past year. Approximately 1,000

customers have been added in the past year and when Project IV is completed, there will approximately 5,000 total customers. BPWD will also have a telemeter system in this new project area. The District's engineer will provide an up-to-date map of the service area.

Mr. Taylor highlighted the importance of communication among the utilities regarding water leaks. It is important for Williamstown to be aware of any suspected leaks.

For the Infrastructure Assessment portion of the plan, the utilities need to provide an approximation of the miles of distribution lines in their system. Corinth Water District estimates that they have 38 miles and anticipate adding another 17. Bullock Pen has approximately 400 miles. Mayor Ferguson and Mr. Taylor need to check on this data. Mr. Hill suggested that we estimate the number of unserved miles in the county as well.

Ms. Van Keuren reviewed the demand projections for the Williamstown Water Service Area. These projections include water sales to Bullock Pen Water District, Corinth Water District, and the City of Dry Ridge. The projections, while overestimated for 1990 and 1995, are much closer for 1996 (+7%). By 2015, total demand is estimated at 3.2 mgd which is less than the total available water (5 mgd) from Williamstown Lake. The 5 mgd estimate of available water was taken from calculations performed by Howard K. Bell as a part of the 1992 water treatment plant expansion project. The projections did indicate, however, that demand would exceed treatment capacity by approximately 2006. Expansion of the treatment plant is a major expense and it may be more difficult to obtain grants, particularly as local household income rises.

Ms. Van Keuren reiterated that while the projections don't necessarily suggest the need for a new water supply source, the council would like to move in that direction for two reasons. First, the growth in the county is so rapid (over 12% population increase in the last year) that it is difficult to confidently predict future demand. Second, if Williamstown Lake were contaminated, there is no back-up source. Also, the development of a new source will undoubtedly take the entire planning period.

General discussion followed. Ms. Conrad emphasized the importance of being forward thinking in the development of a new source and if the county waited until it was really needed that it would be too late. She also wondered if a new lake could generate enough hydroelectric power to meet energy needs in the county. The council also briefly discussed the Eagle Creek project that was proposed several years ago. Another infrastructure issue was raised by Mr. Burgess. Some of the utilities have small diameter water lines that are 3" or 4". These need to be replaced.

The next meeting was scheduled for Tuesday, March 11, 1997 at 7:00 p.m. in the Judge's office. The meeting adjourned at 7:55 p.m..

GRANT COUNTY WATER SUPPLY PLANNING COUNCIL

March 11, 1997 Meeting Summary

In Attendance:

Judge/Executive Shirley Howard
Mayor Norman Ferguson
Logan Murphy
Paul Dills
Dick Austin
Pat Conrad
Marvin B. Lawrence
Dorothy Jamieson
Heidi Van Keuren

The meeting began with a review of the January meeting summary. There were no questions or comments. Mayor Ferguson distributed an article from the Owenton News-Herald regarding a renewed interest in the Eagle Creek dam project proposed in the 1980s. He also handed out two page summaries describing each of the lakes in the county.

Ms. Van Keuren reviewed the end of Chapter 5 and Chapters 6 and 7. There were a number of questions regarding infrastructure. It was mentioned that Bullock Pen still has some small diameter water lines and that Corinth needs some additional water storage. Since few of the utilities were represented at the meeting, follow-up is needed to ensure that the information is correct. Mayor Ferguson noted that Dry Ridge has approximately 25 miles of distribution lines.

Chapter 6 summarized the geology and soils in the county. Bullock Pen Lake and Williamstown Lake met the minimum adequacy standards established by DOW to meet future demand. However, committee members again expressed the need for an additional water source for the county. Chapter 7 reviewed other uses of the water sources such as recreation. Ms. Van Keuren stated that Phase I is complete with the exception of the maps. Hicks & Mann may be able to provide assistance in this area. The Planning Council will work on Phase II while the Division of Water reviews Phase I. Phase II will consist of two parts. The first is protection of the existing supply and second is an inventory of alternative sources of supply. A primary alternative will be selected for further study. Further study would be beyond the scope of the water supply plan.

A discussion ensued regarding possible locations for a new reservoir in the county. Mr. Murphy told the council that any potential sites north of Dry Ridge and east of I-75 were not feasible

package treatment plants in that area. Provisions would need to be made to take the package plant or plants (depending on the site) off-line by tying into a municipal wastewater treatment plant. The area southeast of Williamstown is not feasible because of the location of the landfill. Ms. Conrad mentioned a rumor that had been circulating about a new 800 acre lake in the Lemon-Northcutt Road area. Judge Howard clarified that this was just a rumor. Mr. Murphy again noted that this area would not be suitable for a drinking water reservoir because of all the wastewater treatment plants in this part of the county. Ms. Conrad commented on the importance of sewers county-wide. Mr. Murphy said that ideally the Division of Water would like to see a county-wide water and sewer district. Mr. Austin commented that the Planning and Zoning Commission was trying to encourage development only in areas served by infrastructure.

The possibility of expanding Boltz Lake as a water source was discussed. However, as it is owned by Fish & Wildlife, this is probably not possible. Mayor Ferguson noted that the City of Dry Ridge had the opportunity to utilize the lake as a water source many years ago; however, did not have funds available to build a treatment plant.

The Eagle Creek dam project was discussed. Those present thought it would be an excellent water source as well as a regional recreation area. However, Mr. Murphy noted that it would be a long-term project that would take twenty years or more to complete.

The feasibility of another dam below the existing Lake Williamstown dam was discussed. The greatest drawback was that another treatment plant would be needed according to Mr. Murphy. The quality of water was briefly discussed. Mr. Austin noted that the tests performed each year indicated that there were no bacterial problems. While many of the homes have septic systems, including some aging systems, most are seasonal dwellings. The importance of sewers for this area was also noted by several in attendance. Mr Austin said that if there were a severe drought, water quality may become a problem and all activity on the lake would need to be halted.

Mr. Austin also expressed concern about the water loss figures cited by the utilities in the Infrastructure Assessment. He also noted the loss of water at the water stations.

Mr. Lawrence commented on the importance of a regional lake, such as the Eagle Creek project, to the area in terms of economic development and recreation dollars.

The next meeting was scheduled for Tuesday, May 13, 1997 at 7:00 p.m. in the Judge's office. The meeting adjourned at 8:00 p.m..

GRANT COUNTY WATER SUPPLY PLANNING COUNCIL

May 13, 1997 Meeting Summary

In Attendance:

Pat Conrad
Dorothy Jamieson
Judge/Executive Shirley Howard
Mayor Norman Ferguson
William Hill
Bobby Burgess
Dorothy Altman
Heidi Van Keuren
Logan Murphy

The meeting began at 7:08 with a review of the March 11, 1997 meeting summary. Mr. Burgess noted that potential water supply sites north and east of Dry Ridge and I-75 were feasible if the package treatment plants in those areas were taken off-line into a municipal wastewater treatment plant. This change will be made to the meeting summary.

Mr. Burgess also informed the council of a study being performed by Bullock Pen's engineer, Kerry Odle, to locate a new storage facility. The study will help determine the best location based on existing growth patterns. He also noted that an average residential customer in their service area uses in excess of 5,000 gallons per month. Bullock Pen received an increase of 50,000 gallons per day in its permitted withdrawal limit from the lake. This is less than requested. Bullock Pen Water District plans on speaking to the Northern Kentucky Water Service District regarding additional supply.

Judge Howard asked about the boundaries of the water districts. Mr. Hill stated that they had specified latitudes and longitudes, but for the most part, there was a spirit of cooperation among the districts. Judge Howard asked about other water utilities serving the county. Tri-Village serves the Jonesville area and is expanding towards Four Corners. The Gallatin County Water District serves Ryle Road; however, they only have 3" and 4" lines, so they are really unable to expand into Grant County.

Judge Howard stressed the importance of mapping the county to show where water both "is" and "isn't". Ms. Van Keuren stated that one of the plan maps would show the current service areas of

water utilities as well as planned expansions.
Ms. Jamieson asked if there were any private companies in the area starting utilities. Mr. Murphy mentioned Lake County, Florida which put out bids for the development of a private water supply. The county would pay a specified amount per 1,000 gallons of water. Mr. Burgess noted, in response to another question, that it cost approximately $26,000 to $32,000 to install one mile of water line.

Ms. Van Keuren updated the group on the DOW training session and asked about the existence of drought coordinators or emergency response plans. Each of the water districts has a designated contact person. Gordon Taylor essentially serves as the county's drought coordinator because he will notify utilities if the lake is getting low or if they are other problems. Currently, there is no emergency response plan in place.

Mr. Burgess made a presentation to the group about a potential site for a new water supply reservoir. The area is approximately bounded by Lemon-Northcutt Road, U.S. 25, Knoxville Road, and Greenville Road. The area is very steep and there are only two to three acres of tillable land. With a dam of 120 feet, the lake would be 875 acres. With a dam of 100 feet, the lake would be 577 acres. There is a mobile home park in the headwaters with a package treatment plant that would need to be taken off-line. There are approximately 50 property owners in the area. The cost of treatment plant was discussed. A traditional plant would cost approximately $1,000,000 to $2,000,000. However, there are other options such as a package plant that could be expanded as demand grew. The group agreed that development around the lake would need to be strictly regulated and only fishing and low horsepower boats be allowed. A map of the proposed lake will be included in the Phase II plan.

The meeting adjourned at 8:15 p.m..

GRANT COUNTY WATER SUPPLY PLANNING COUNCIL

July 8, 1997 Meeting Summary

In Attendance:

Dick Austin
Dorothy Jamieson
Pat Conrad
Judge/Executive Shirley Howard
Mayor Norman Ferguson
Al Yelton
Bill Threlkeld
Logan Murphy
Heidi Van Keuren

The meeting began with a review of the May 13, 1997 meeting notice. There were no comments or changes.

The draft maps for the water supply plan were reviewed. They were prepared by Logan Murphy of Hicks & Mann. The maps included a planning unit map, a service area map, and a map of potential sources of contamination. The map of potential sources of contamination showed that there are eight package treatment plants in the northeastern portion of the county. There are several watersheds in the southwestern portion of the county that do not have any major potential sources of contamination including the Musselman and Rattlesnake Creek basins. The new county zoning ordinance was briefly discussed and it was noted that there will be bigger acreage requirements for septic systems which should help eliminate new sources of water pollution. Since draft maps were completed, Ms. Van Keuren planned on submitting Phase I of the water supply plan to the Division of Water as soon as possible.

Phase II water supply planning activities were discussed. Phase II focuses on supply protection and the identification and selection of alternative water sources for further study. Ms. Van Keuren briefed those in attendance on the meeting that had been held in June at the Bullock Pen Water District to discuss the new Community Development Block Grant planning funds. Grants may be available in the amount of $20,000 for planning studies. Funds could potentially be used for an engineering study that would evaluate alternative water sources and identify the best locations for new infrastructure investment and system interconnections. Ideally, if two cities applied together, $40,000 could be obtained.

Ms. Van Keuren updated those present on the Phase II activities that had been completed so far. She discussed the difference between point and non-point sources of pollution. Potential sources of contamination for Bullock Pen Lake were discussed. The greatest chance of contaminant release is probably posed by aging or improperly installed septic tanks. However, this is treatable and does not pose a major hazard. In addition, Interstate 75 is in the Bullock Pen Lake watershed, so there is a possibility of run-off or even a tanker truck spill. Mr. Murphy noted that the railroad poses a significant threat in that regard because they carry so many hazardous chemicals and material.

Emergency sources of water supply were discussed. Mr. Threlkeld brought up the idea of locating a portable treatment plant that could be used at Boltz Lake in the event of contamination of either of the main water sources in the county. Approximately 11/2 miles of waterline would need to be installed to connect with an existing water system. There was some general discussion about contacting the Department of Fish & Wildlife to discuss the possibility of authorization to use Boltz Lake as an emergency water source. Security of access to Bullock Pen Lake and Williamstown Lake was discussed. Neither is secure. Nor is there any feasible way to provide security, so the planning process will need to focus on emergency back-ups for the water supply sources.

The next meeting will be a public hearing to consider supply protection recommendations. It was scheduled for September 9, 1997 at 7:00 p.m. in the Judge's office. The meeting adjourned at 7:50 p.m..

GRANT COUNTY WATER SUPPLY PLANNING COUNCIL

September 9, 1997 Meeting Summary

In Attendance:

Bobby Burgess - Bullock Pen Water District
Mayor Glenn Caldwell - City of Williamstown
Judge/Executive Shirley Howard - Grant County Fiscal Court
Mayor Norman Ferguson - City of Dry Ridge
Tom Brewer
Dick Austin - Grant County Fiscal Court
Bill Threlkeld
June Hedrick - Telestar Mobile Home Park
Dorothy Jamieson - Camper's Village
Heidi Van Keuren - NKADD

Prior to the meeting, a public hearing was held to consider supply protection recommendations. Recommendation 2 was changed after some discussion to include Boltz and Corinth Lakes as well. Mr. Brewer asked about the Clean Water Act and provisions for protecting the water supply from cattle. In his case, this would mean fencing off access to Lake Williamstown which is the sole drinking water supply for the cattle. After the public hearing closed, the recommendations were adopted unanimously with the changes discussed above.

The meeting summary from July 8, 1997 was reviewed and approved. There was also some discussion of the CDBG planning grant to do an engineering study of water supply alternatives and interconnections. Ms. Van Keuren explained that the deadline was November 14, 1997. She also said that qualifying for CDBG grants has become difficult for the area because of rising area incomes.

Mr. Burgess emphasized the importance of planning for the future in terms of size of water lines and storage. He also thought it would be good to have a combined emergency plan for all the utilities.

Ms. Van Keuren reported that DOW was still reviewing Phase I of the plan. DOW staff commented that the maps were too colorful and that they needed a better legend.

Potential water supply alternatives were discussed. Several others were added as a result of the discussion including: an emergency connection between the Pendleton County Water District and Williamstown and a joint venture between Grant County and either Gallatin or Pendleton Counties to get water directly out of the Ohio River.

The next meeting was scheduled for Tuesday, November 11, 1997 at 7:00 p.m. in Judge Howard's office. The meeting adjourned at 8:10 p.m..

GRANT COUNTY WATER SUPPLY PLANNING COUNCIL

November 11, 1997 Meeting Summary

In Attendance:

Pat Conrad, City of Dry Ridge
Mayor Norman Ferguson, City of Dry Ridge
Judge/Executive Shirley Howard, Grant County Fiscal Court
Mayor Glenn Caldwell, City of Williamstown
Al Yelton
Bill Threlkeld, Watch Dogs
June Hedrick, Telestar Mobile Home Park
Dorothy Jamieson, Camper's Village
Heidi Van Keuren, NKADD staff

The meeting began with a review of the September 9, 1997 meeting summary. There were no corrections or additions.

Ms. Van Keuren updated the council on the status of the Phase I Grant County Water Supply Plan submission. She received written comments from DOW with required changes; however, most were very minor. The changes have been made, but official approval has not been received yet. Ms. Van Keuren passed out draft copies of the plan with all the changes. Those who already had plan binders received manila envelopes with replacement pages. Mayor Caldwell took an envelope for Gordon Taylor. Ms. Van Keuren will mail plans or replacement envelopes to those who were unable to attend.

Ms. Van Keuren updated the council on the status of the CDBG planning grant. The deadline has been extended to January 1, 1997. Ms. Van Keuren explained that to qualify for the planning grant funds, 51% or more of the planning grant beneficiaries had to fall into the low-to-moderate income (LMI) category. In Grant County, the only city that automatically qualified was Dry Ridge. Since the proposed planning grant would fund a feasibility study of alternative water sources and interconnections among utilities, it was clear that the project beneficiaries would not be limited to Dry Ridge. This means an income survey of all potential beneficiaries would need to be conducted. This potentially could mean surveying 85 % of all the households in the county door-to-door. In addition, an income survey was conducted for a potential CDBG grant for the Corinth Water District and residents did not meet the 51% LMI. In the northern portion of the county, where the demand for water is the greatest and the most development is occurring, it is unlikely that residents will meet income requirements. Ms. Hedrick asked what the income limits were and Ms.Van Keuren explained that it varied by family size, but for a family of four, the

income limit would be approximately $29,000. With two-income families, it is easy to exceed these limits. Also, the CDBG planning grant application required that a potential CDBG project be identified as a result of the planning study; however, it is unclear what, if any, CDBG projects would result from the study. Ms. Van Keuren also consulted with Will Linder who attended the initial meeting at the Bullock Pen Water District and he agreed that it would be very difficult to put together a competitive application. Ms. Van Keuren is also not aware of any potential funding sources for this kind of study.

At the previous meeting, a potential list of water supply alternatives was discussed. Ms. Van Keuren reviewed these and stated that a public hearing to consider the alternatives would need to be held. She was concerned that there really are no cost estimates associated with any of the alternatives. Undoubtedly, the public would like to have some ballpark idea of costs to factor into the selection process. Ms. Van Keuren stated that she had no expertise in putting together such cost estimates. All present agreed that it was important to have some data prior to a public hearing.

Each of the possible alternatives was discussed. Interconnection between Bullock Pen Water District and the Northern Kentucky Water Service District was discussed. This would seem to the quickest solution for providing more water to Bullock Pen and it may be possible to obtain some cost data regarding this alternative. Ms. Van Keuren will contact Bobby Burgess regarding this.

Mayor Caldwell discussed the alternative of a dam below the existing Williamstown dam. He thought this might be cost effective because the existing treatment plant could be used. Ms. Van Keuren asked that the Mayor contact the city's engineering firm regarding this alternative and its potential cost.

The possibility of piping raw water from the Ohio River from Gallatin or Pendleton County was briefly discussed. Those present thought a new treatment plant or additional treatment processes might be needed to treat the river water. Ms. Hedrick asked about types of resources available for compiling cost estimates like this. Mr. Threlkeld thought that the PSC may have some "rules of thumb" regarding costs of different types of water supply sources. Mayor Ferguson asked Ms. Van Keuren about other county water supply plans that may have addressed these issues, particularly in regard to funding new supply sources. Ms. Van Keuren will check with DOW on that.

Ms. Van Keuren asked about if there had been any water supply problems during the recent dry months. Bullock Pen did shut down loading stations for a short period of time.

Mr. Threlkeld brought up the issue of fire protection and its importance. Mayor Ferguson thought that the PSC regulated the placement of fire hydrants and that the flow was required to to be 250 gpm for 2 ½ hours.

The next meeting was scheduled for Tuesday, January 13, 1998 at 7:00 p.m. in Judge Howard's office. The meeting adjourned at 7:50 p.m..

GRANT COUNTY WATER SUPPLY PLANNING COUNCIL

January 13, 1998 Meeting Summary

In Attendance:

Mayor Glenn Caldwell
Judge/Executive Shirley Howard
Dick Austin
Al Yelton
Mayor Norman Ferguson
William Hill
Tony Brewer
Gordon Taylor
Pat Conrad
W.F. Threlkeld
Dorothy Jamieson
Heidi Van Keuren

The meeting began with a review of the November 11, 1997 meeting summary. There were no comments or changes. Ms. Van Keuren handed out updates to the plan binders and informed the council that DOW is still reviewing and commenting on the Phase I plan. The review process at DOW now includes not only Water Quantity Management, but also the Groundwater and Drinking Water branches.

Ms. Van Keuren handed out evaluation forms to rate the alternatives that have been discussed in previous meetings. The forms were reviewed and evaluation factors were briefly discussed. It was decided that each alternative would be judged on its own merit, not compared to other alternatives. Therefore, it is possible that several alternatives could have the same total score. The forms should be faxed or mailed to Ms. Van Keuren by February 15, 1998. All responses will be confidential. Responses will totaled and analyzed for the public hearing. Forms will be made available for citizens to complete if they are interested.

Contamination response plans were discussed. Each water supplier needs to have a written plan that states specifically what steps would be taken in the case of water supply contamination. The plans will be included in the water supply plan. Gordon Taylor said that they had a manual prepared by DOW regarding this issue, so he will put together an outline.

Mr. Brewer brought up the potential threat posed by the rail traffic in the county. Parts of the rail track are in the watersheds of both Bullock Pen and Williamstown Lake watersheds. Ms. Van

Keuren will include discussion of this threat in the plan.

Mayor Caldwell updated the Council on the Dam below the Dam on Williamstown Lake. The city's engineering firm put together some preliminary data regarding two different dam locations, Fairview Road and Hogg Ridge Road. The project would create a regional water resource for both Grant and Pendleton Counties. It may be possible to provide an additional water source for Tri-Village Water District as well. The project would definitely require regional cooperation and support. Engineering "guesstimates" of cost are 5 to 10 million dollars, not including land acquisition.

The next meeting, which will begin with a public hearing, was scheduled for Tuesday, March 10, 1998 at 7:00 p.m.. The meeting adjourned at 8:05 p.m..

GRANT COUNTY WATER SUPPLY PLANNING COUNCIL

March 10, 1998 Public Hearing & Meeting Summary

In Attendance:

Mayor Norman Ferguson, City of Dry Ridge
Heidi Van Keuren, NKADD
Judge/Executive Shirley Howard, Grant County Fiscal Court
Gordon Taylor, City of Williamstown
Bobby Burgess, Bullock Pen Water District
William Hill, Corinth Water District
Joe Gruen, Dry Ridge
Carl L. King, Dry Ridge
Jack Scroggins, Dry Ridge
Robert Scroggins, Lemon Northcutt Rd., Dry Ridge
Ricky Hopperton, Dry Ridge
Linden Smith, Grant County Planning Commission
William F. Threlkeld, Grant County Watch Dogs
Tony Brewer, Dry Ridge
Al Yelton, Grant County Watch Dogs
Les Taylor, Mason
Jack Caldwell, Dry Ridge
Wayne Browning, Dry Ridge
Dan Bates, Dry Ridge
Darrell Link, Crittenden
Dick Austin, Williamstown
Logan Murphy, Heekin
Greg Kennedy, Williamstown
Dorothy Jamieson, Dry Ridge
John Draper, Williamstown
Norma Jean Draper, Williamstown
James I. Williams, Corinth
Lafe Williams

The public hearing began at 7:00 p.m. and Mayor Ferguson, Chairman, gave an overview of the planning process. Ms. Van Keuren began the meeting with a brief description of the alternatives.

Citizens had a number of questions regarding the top-ranked alternative, the dam below the dam on Williamstown Lake. The primary concern was about separating the water bodies so that any potential contaminants would remain isolated. Mayor Caldwell elaborated on this alternative and

explained that depending on the height of the new dam, it would be possible to separate the two lakes.

Mr. Burgess described the new reservoir in the Lemon-Northcutt Road area. He explained that this reservoir, unlike Eagle Lake or Callansville Lake, would not take prime agricultural land. Most of the land in the area is steep and there is only an acre or two of bottom land. In addition, several residents in the area are agreeable to donating their land for this project. Mr. Burgess also expressed his concern about keeping water prices affordable for senior citizens and young couples and ensuring that there is an adequate supply of water.

There was some discussion regarding a January meeting in Carrollton about the Eagle Lake project. At that meeting a government representative stated that there was absolutely no chance for this project to succeed and that there was no money for flood control. Mr. Threlkeld commented that it was important "not to take no for an answer" and that if this is the best option, the planning council and citizens should lobby their representatives in support of the project.

Mr. Kennedy emphasized the importance of getting cost estimates and putting together a business plan for the preferred alternative. This data would make it easier to get support from funding sources.

Mayor Caldwell stressed the importance of regionalization. Funding sources would look more favorably on projects that had regional support and cooperation.

A new reservoir in the southwest part of the county in either the Rattlesnake, Musselman, or Grassy Creek basins was discussed. There is a lot less development in that area and fewer potential sources of contamination, such as wastewater package treatment plants. Several citizens stressed the value of a new source that could be controlled and isolated from potential contamination sources. One participant mentioned that developing a new source could entail relocating roads which would be expensive.

Several present emphasized the importance of extending water lines to residents particularly in the unserved southwestern part of the county.

There were several questions regarding the dam below the dam alternative and the existing infrastructure in Williamstown. Mr. Taylor responded that the design capacity of the plant is 2.25 mgd, but some upgrades, particularly pumps, may be necessary.

One citizen asked about funding for the project and whether it would come from federal government or local taxpayers. Ms. Van Keuren explained that until a feasibility study is conducted, it was unclear what project costs would be or what possible funding sources might exist. He also asked about the methodology for distributing the evaluation factors survey and why all the citizens in the county had not received it. Ms. Van Keuren explained that the survey was given to all the members of the Water Supply Planning Council as well as some citizens that regularly attend the meetings. Surveys were also distributed to all City Councils and water utility boards. The Public Hearing Notice also stated that surveys were available at the County

Judge/Executive's office for several weeks before the meeting. However, no mass mailing was conducted.

Mr. Brewer asked if the Water Supply Planning Council had made a trip to Frankfort to try to ascertain the priorities of the Governor regarding small water districts. Mayor Ferguson stated that one of the Governor's priorities is getting public water to all rural residents. Mr. Draper stated that he worked in Frankfort and if the Council needed any assistance with delivering materials or obtaining information, he would be available to help.

The public hearing adjourned at 8:15 p.m. and the regularly scheduled meeting began with a review of the January 13, 1998 meeting summary. There were no comments or changes.

Mr. Burgess posed a hypothetical question regarding a new lake created by the dam below the dam alternative. Could any utility put a treatment plant on the lake and start pumping water from it? Mayor Caldwell responded that the project would be regional and the lake would probably be governed by a new regional water board. Others present thought it was unlikely that funding could be obtained for more than one treatment plant.

There was some discussion of what the total demand for water county-wide might be including residents who purchase water from water haulers for cisterns.

Mr. Hill suggested that each of the utilities and cities approach their engineers regarding a rough cost estimate for a feasibility study that would look at the top two alternatives, at a minimum. Once a ballpark dollar estimate is available, the Council can start to work on an implementation plan to fund a study.

The next meeting was scheduled for May 12, 1998 at 7:00 p.m. at the Courthouse. All present were invited to attend. The meeting adjourned at 8:45 p.m..

GRANT COUNTY WATER SUPPLY PLANNING COUNCIL

May 12, 1998 Meeting Summary

In Attendance:

Heidi Van Keuren, NKADD
Dorothy Altman, Grant County Schools
Gordon Taylor, Williamstown Water
William Hill, Corinth Water District
Mayor Norman Ferguson, City of Dry Ridge
Judge/Executive Shirley Howard, Grant Co. Fiscal Court
Al Yelton, Dry Ridge
June Hedrick, Dry Ridge
Charlie Phillips, Dry Ridge
Mayor Glen Caldwell, City of Williamstown

The meeting began with a review of the March 10, 1998 public hearing and meeting summary. Some of the names of those in attendance were clarified and the summary will be amended.

Ms. Van Keuren informed the Council that the deadline for the water supply plans has been extended by one year to July 15, 1999. The Grant County plan should be completed in the next three weeks and submitted to DOW for review.

The Council discussed implementation of the water supply plan. Those present agreed that the Council would have the responsibility of implementing the plan. The primary implementation activity will be a feasibility study. Mr. Hill emphasized the importance of being very clear and concise about what the Council wants the feasibility study to contain. To keep costs down, the study will have to be fairly basic. Since one of the alternatives to be studied would actually be in Pendleton County, the Council decided to invite the Pendleton County Water Supply Planning Council to the next meeting to get their input. At the next meeting, the feasibility study will be discussed and the Council will try to define exactly what is needed and/or wanted.

Drought plans were briefly discussed. Both the Corinth Water District and Williamstown Water use the basic plan provided by the Division of Water. Copies of drought ordinances used by Owenton and Tri-Village will be distributed to interested utilities.

Chapter 14 of the plan was discussed. Chapter 14 consists of signature pages for those who participated in the planning process as either council members or interested citizens. Those present signed at the meeting and Ms. Van Keuren will contact those who did not attend. The signature pages will be at Judge Howard's office for several weeks.

The next meeting was scheduled for Tuesday, July 14, 1998 at 7:00 p.m. and the primary purpose is to discuss the feasibility plan and to obtain input from Pendleton County water suppliers and distributors. The meeting adjourned at 8:00 p.m..

GRANT & PENDLETON COUNTY WATER SUPPLY PLANNING COUNCILS
July 14, 1998 Joint Meeting

In Attendance:

Heidi Van Keuren, NKADD
Jeff Carson, Falmouth City Council
Henry W. Bertram
Judge/Executive Shirley Howard, Grant County Fiscal Court
Wm. Todd Ramsey, City of Falmouth
Jack Wright, Pendleton County Economic Development
June Hedrick, Telestar Mobile Home Park
Judge/Executive Donald R. Mays, Pendleton County Fiscal Court
Gordon Taylor, Williamstown Water
William Hill, Corinth Water District
Mayor Glenn V. Caldwell, City of Williamstown
Pat Conrad, Dry Ridge City Council
Bobby Burgess, Bullock Pen Water District
William F. Threlkeld, Citizen, Williamstown
Al Yelton, Grant County Watch Dogs
Tony Brewer, Grant County Watch Dogs
Philip Crawford, Pendleton County Water District
Alan Schafer, Pendleton County Water District

The meeting began with introductions. Ms. Van Keuren explained that the implementation strategy of the Grant County Water Supply Plan included a feasibility study to look at several potential sites for a new reservoir. One of the potential sites is a "sister" lake to Lake Williamstown with a new dam at either Fairvue or Hogg Ridge Road. Because the majority of this reservoir would be in Pendleton County, this meeting was called to assess the interest in a regional water supply project. The Grant County Fiscal Court and the City of Williamstown have budgeted money for a feasibility study.

Judge Mays explained that he was interested in regional projects, but a new reservoir would be a long-term solution and Pendleton County is currently in the process of seeking a short-term solution to water supply issues. EDA has provided a grant for $1 million and another $1 million is being sought from the CDBG program. This project would create an interconnection between the Pendleton County Water District and the Northern Kentucky Water Service District at the Pendleton/Kenton County line. The project currently calls for a 12" line, but the County is exploring the possibility of a 16" line. This project would also take the Butler water treatment plant off-line.

Mr. Burgess explained that Bullock Pen is also in the process of exploring interconnection and possible rate structures with the Northern Kentucky Water Service District in either the Piner or Bracht areas of Kenton County. Bullock Pen is interested in buying water wherever it can to meet its rapidly growing need.

Mayor Caldwell was questioned regarding the amount of water a "sister" lake could provide. He explained that he had data regarding the watershed area; however, since the engineer had done this work for free, he did not supply more detailed data.

Mr. Carson updated those present about some of the issues associated with the Callansville Lake project that would apply to any new reservoir, such as lake ownership and dam maintenance.

Judge Howard reported on the meeting Judge Cain and the proposal to run distribution lines to each county. A committee is being formed to study this further; however, no meeting date has been set.

Mr. Burgess discussed the Lemon-Northcutt Road reservoir proposal. He has been exploring this location for approximately nine years. This reservoir would have a 120-foot dam at Greenville Road which creates a 900-acre lake with 34 miles of shoreline.

Mr. Wright reported on research done by former Pendleton County Judge/Executive David Pribble on a lake on the south fork of Grassy Creek. This 1,200 acre lake would be an excellent resource for recreation and economic development as well as a water supply. He asked Mayor Caldwell to contact Ronnie Mann who had done some preliminary engineering work on this project to see what data he might have.

Mr. Threlkeld raised the issue of Cincinnati offering to sell water to Boone County at a cheaper price than the new treatment plant proposal. This would probably impact the five county distribution plan proposed by Judge Cain.

Mr. Carson raised concerns about relying too heavily on one source, the Ohio River. If there were a spill and five counties were relying on this source, it would be a serious problem. He felt there was merit in relying on a variety of sources.

Mr. Burgess reported on planned improvements in the Bullock Pen system. One to two new water towers are planned and lines are being updated. Currently, two new subdivisions are proposed in their service area. One will have 288 homes and the other 300 homes.

Mr. Wright discussed the five-county plan and the likelihood that it would also be a long-term alternative because of all the jurisdictions and entities that would be involved. A new lake would help Pendleton County. Judge Mays stressed that a regional approach to projects was very important and that counties had to realize that they can't do everything by themselves.

Mr. Carson, speaking from the perspective of Falmouth, stated that the City's engineer is concerned about the drought-vulnerability of the Licking River and was in favor of seeking

additional sources. Mr. Carson felt that the one thing the area is really lacking is a big body of water.

Mr. Brewer raised concerns about the 1952 drought (which was the 100-year drought of record) and the difficulty in keeping the cattle watered. He also asked the Councils to consider the impact of the Clean Water Act. He asked Ms. Van Keuren to research how that would affect agricultural, particularly dairy farmers, water users.

Ms. Van Keuren asked the Grant County Water Supply Planning Council if they wanted to go ahead and proceed with the feasibility study, in light of other existing proposals. Those present said they did and it was agreed that the south fork of Grassy Creek should be considered as well.

The meeting adjourned at 8:15 p.m..

APPENDIX B: NOTIFICATIONS AND INFORMATION REVIEW

APPENDIX B
NOTIFICATIONS

Notification 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 Ken Lucas, Boone County
Mayor Evelyn Kalb, City of Florence
Mayor Warren Moore, City of Union
Mayor Phillip Trzop, City of Walton
Judge/Executive Tom Olds, Owen County
Mayor Billy Stamper, City of Gratz
Mayor Rebecca Albaugh, City of Monterey
Mayor K.F. Ballard, City of Owenton
Judge/Executive Clarence Davis, Gallatin County
Mayor Michael Murphy, City of Glencoe
Mayor Dale Davis, City of Sparta
Judge/Executive of Scott County
Mayor of Georgetown
Mayor of Stamping Ground
Mayor of Sadieville
Judge/Executive Charles Swinford, Harrison County
Mayor Berry, City of Cynthiana
Judge/Executive Donald Mays, Pendleton County
Mayor Delbert Reid, City of Butler
Mayor Max Goldberg, City of Falmouth
Judge/Executive Clyde Middleton, Kenton County
Mayor James Miller, City of Bromley
Mayor Denny Bowman, City of Covington
Mayor Maston Ward, City of Crescent Park
Mayor George Stewart, City of Crescent Springs
Mayor Harold Ries, City of Crestview Hills
Mayor John Link, City of Edgewood
Mayor Al Wermeling, City of Elsmere
Mayor Marc Otto, City of Erlanger
Mayor Harold Parks, City of Fairview
Mayor Thomas Holocher, City of Ft. Mitchell
Mayor Cindy Pinto, City of Ft. Wright
Mayor Isaac Gabbard, City of Independence
Mayor Michael Pendery, City of Kenton Vale
Mayor Frank Smith, City of Lakeside Park

Mayor Clifford Coyle, City of Latonia Lakes
Mayor Gerald Holloway, City of Ludlow
Mayor Melissa Worstell, City of Park Hills
Mayor Bob Miller, City of Ryland Heights
Mayor Mark Kreimborg, City of Taylor Mill
Mayor Dennis Stein, Mayor of Villa Hills
Dennis Willaman, Kenton County Water District No. 1
Eric Moore, Warsaw Water Works
Barry Alexander, Alexander Water Hauling
Joe Cain, Craigs Creek Campground
Keith Hendricks, Butler Water Works
Todd Ramsey, Falmouth Water Department
Alan Schafer, Pendleton Co. W.D. No 1/North and South
James Poynter, Cynthiana Municipal Water Works
Bob Riddle, Georgetown Municipal Water & Sewer
Marvin Hedges, Stamping Ground Water Works
Vernon Minch, Elk Lake Water Co.
Marshall Gibson, Owenton Water Works
Carol Cox, Tri-Village Water District
Bill Allen, Glenwood Hall Resort

Notification to Local Governments and Water Suppliers

A letter was also sent to local units of government in Grant County, water suppliers that provide water for use in Grant County, and all local governments that share the same water sources (Williamstown and Bullock Pen Lake).

This letter notified recipients of Grant 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 Shirley Howard, Grant County Fiscal Court
Mayor Martha Hicks, City of Crittenden
Mayor Norman Ferguson, City of Dry Ridge
Mayor Bob Hall Jones, City of Williamstown
Mayor Winford Colson, City of Corinth
William Catlett, Bullock Pen Water District
Gordon Taylor, Williamstown Municipal Water
June Hedrick, Telstar Mobile Home Park
Dorothy Jamieson, Campers Village Campground

Public Notifications

A Notice of Intent to plan was placed in the legal section of the October 19, 1995 Grant County News. The public hearing to adopt planning objectives was advertised in the November 9, 1995 Grant County News. A Notice of Intent to Plan was also sent to the Northern Kentucky Sierra

Club and the Conservation District.

Information Review

No information was received in response to the notification letters; however, there were several important sources including: the 1990 Licking River Study and the 1996 Grant County Comprehensive Plan Update. These sources are summarized in the text of the plan.

October 30, 1995

Ken Lucas
Boone Co. Judge/Executive
Boone Co. Courthouse
P.O. Box 900
Burlington, KY 41005

Dear Judge Lucas:

Grant 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 Water Supply Planning council for Grant County consists of:

Judge/Executive Shirley Howard - Grant Co. Fiscal Court
Bobby Burgess - Bullock Pen Water District
Barbara Cammack - Grant Co. Health Department
Mayor Norman Ferguson - City of Dry Ridge
William Hill - Corinth Water District
Gordon Taylor - Williamstown Water

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 contact: Heidi Van Keuren, NKADD, 16 Spiral Dr., P O Box 668, Florence, KY 41022-0668, (606) 283-1885.

Sincerely,

Norman Ferguson

Norman Ferguson
Mayor

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

John Mays, Executive Director

October 30, 1995

William Catlett
Bullock Pen Water District
Farrell Drive
Crittenden, KY 41030

Dear Mr. Catlett:

Grant 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 Grant County Water Supply Planning Council consists of:

Judge/Executive Shirley Howard - Grant County Fiscal Court
Bobby Burgess - Bullock Pen Water District
Barbara Cammack- Grant County Health Department
Mayor Norman Ferguson, Council Chair - City of Dry Ridge
Mayor Martha Hicks - City of Crittenden
William Hill - Corinth Water District
Mayor Robert Hall Jones - City of Williamstown
Gordon Taylor - Williamstown Water

In compliance with the planning requirements and in the interests of cooperation, please provide the following information to the below address by November 30, 1995:

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 feel free to contact me at (606)283-1885, 16 Spiral Drive, PO Box 668, Florence, KY 41022-0668.

Sincerely,

Heidi Van Keuren
Development Planner

Week for Oct. 16-20 is Faith Purcell. She is the daughter of Jim and Becky Purcell and lives in Crittenden. She participates in the youth group at her church, and her hobbies include visiting friends and playing games on the computer.

Her favorite food is Italian. She likes being on the Cherokee team because of the teachers and because she is in the same class with her friends.

The Grant County Middle School Cherokee student of the week for Oct. 9-13 is Shelley Blaker.

She is the daughter of Karen Blaker and lives in Crittenden. Her school activities are volleyball and cheerleading. She also participates in gymnastics and softball.

She likes to listen to music, sing, dance, watch movies and also collects porcelain dolls. Her favorite food is homemade vegetable soup.

clothes buyer.

Williamstown

Cindy Martin is Williamstown Elementary's Primary Student of the Week. She is eight years old and is in the third grade.

Cindy lives with her parents, Edward and Tina Martin.

Cindy was selected as student of the week by her teacher, Rosie Gabbert. According to Mrs. Gabbert, Cindy always shows good effort and a fine attitude. She does excellent academic work and is a good citizen.

Cindy likes wildlife and is especially interested in the protection of wildlife. She collects rocks and unicorns.

Tonya Fields is Williamstown Elementary's Intermediate Student of the Week. She is ten years old and is in the fifth grade. She is the daughter of Larry Fields and Tonya Coomer.

Band earns trip

The Williamstown Band of Spirit
Blue and Gold Festival over th
Danville to participate in regional

PUBLIC NOTICE OF INTENT TO CREATE
A WATER SUPPLY PLAN

Grant County announces its intent to participate in the water supply planning process as mandated by KRS Chapter 151. The purpose of the plan is to assess the water resources available to the county. The planning process consists of two phases, the first of which will include planning initiation and data collection. Phase two includes planning for emergencies, supply protection, and, if necessary, selecting an alternative water source. The process will be accomplished through a series of planning council meetings. The proposed planning unit is Grant County.

The planning process will be guided by a planning council consisting of the following members:

Judge/Executive Shirley Howard - Grant Co. Fiscal Court
Bobby Burgess - Bullock Pen Water District
Barbara Cammack - Grant Co. Health Department
Mayor Norman Ferguson - City of Dry Ridge
William Hill - Corinth Water District
Gordon Taylor - Williamstown Water

The public is invited to attend and comment at all meetings of the planning council. Additionally, two meetings will be held specifically to solicit public input concerning objectives for the planning process.

The next planning council meeting will be held Monday, October 30, 1995 at 7:00 p.m. at the Grant County Courthouse.

For more information contact: Heidi Van Keuren
NKADD
16 Spiral Dr.
P.O. Box 668
Florence, KY 41022-0668
(606) 283-1885

N1019IC

cemetery, which dates back to the mid 1800's, is on property presently owned by Hazel Franks and designated as parcel no. 5 on the official plans.

Said cemetery is approximately 25x25 and contains at least three (3) unknown graves, all of which will be affected by the project.

The following names have been identified by markers: Joseph, son of I & E.A. Gregg; Eliza Ann, wife of Imos Gregg; Martha M., daughter of I & E.A. Gregg.

Anyone having knowledge of the cemetery, such as names of persons buried there and their next of kin, is requested to contact Ms. Peggy McKiernan, Right of Way Agent, Department of Highways, P.O. Box 17130, Covington, Kentucky 41017, (606) 341-2700 ext. 226.

X1030N1128C E12-22

Kendall Road (MP 5.179) extending easterly then northerly to the Gallatin County Line (MP 11.704), a distance of 6.525 miles. Bituminous Surface. Bid proposals for all projects will be available until 9:00 A.M., EASTERN STANDARD TIME, FRIDAY, NOVEMBER 17, 1995, at the Division of Contract Procurement. Bid proposals for all projects will be available at a cost of $10 each and remittance payable to the State Treasurer of Kentucky must accompany request for proposals (NON-REFUNDABLE). BID PROPOSALS ARE ISSUED ONLY TO PREQUALIFIED CONTRACTORS. Specimen proposals for all projects will be available to all interested parties at a cost of $10 each (NON-REFUNDABLE). Specimen proposals cannot be used for bidding.

N1191C

The Kentucky State Poli
has submitted documents
Closure Assessment Repor
completed. Petroleum hy
allowable levels for a Clas
the Underground Storage T
401 KAR 42:080E. The
levels that remain in the gro
a thorough review of site co

Copies of reports and rel
of Waste Management's Fr
contact the UST Records
6716, ext. 647. Hearing-ar
agency by using the
telecommunication devise fo
800-648-6057. For TDD to
the documents can be provid
disabilities.

Anyone wishing to comm
do so by December 9, 1995
period. Comments should
Management, Underground
Frankfort, Kentucky 40601.

N1191C

PUBLIC MEETING NOTICE

To all interested citizens. The Grant County Water Supply Planning Council will hold a public meeting to solicit input concerning goals and objectives for the Grant County Water Supply Plan as mandated by KRS Chapter 151. The purpose of the plan is to assess the water resources available to the county including planning for emergencies, supply protection, and if necessary, selecting an alternate water sources.

The meeting will be held Tuesday, November 14, 1995 at 7:00 p.m. at the Grant County Courthouse.

For more information contact: Heidi Van Keuren
16 Spiral Drive
P.O. Box 668
Florence, KY 41022-0668
(606) 283-1885

N1191C

NOTICE O

Notice is hereby given that
Planning and Zoning Commi
111 Stewartsville Road, Wi
applicant requesting a recom
the City of Williamstown for
Ordinance of the City of Will
shall be read as follows:

Section 14.6, "Classification of
J. Class 10: The following
shall constitute Class 10 and
herein:

1. STRUCTURAL TYPE - C
and single or double stacked.

2. MAXIMUM SIZE OF SI
square feet.

3. MAXIMUM HEIGHT AI
hundred (100) feet.

4. LIMITATION OF NUMBE

(a) A conditional use pe
sign.

(b) The sign must be a n
(750) feet from the point of ingr

(c) Signs must be on the
identifies or advertises.

(d) Only one (1) pole for a

(e) Advertising signs sha
area is visible at a minimum vi
(250) feet, as measured along t
sign is facing.

Section 14.7, "Permitted Use an
include a Class 10 sign in the Hig
The public hearing will be held
Grant County Courthouse, Willia
All interested persons are invited

The Telestar Trailer Park hereby gives notice that during the time period of **JANUARY 1, 1994 THROUGH JUNE 30, 1995,** the water supply failed to comply with certain monitoring requirements as required by the Kentucky public and Semipublic Drinking Water Regulations, 401 KAR 8:010 through 8:700 inclusive.

The specific violations for the time period are:

May 1994 Failure to submit any bacteriological samples.

July 1994 Failure to submit any bacteriological samples.

Any potential adverse health effects to any segment of the populations could not be determined due to failure to comply with the monitoring requirements.

In most cases, monitoring violations do not require the public to seek alternative water supplies or take preventive measures. If alternative water supplies or preventive measures are needed, the public shall be notified immediately.

The Telestar Trailer Park will take the necessary action to reduce or eliminate monitoring violations. For more information, contact June Hedrick, 606-371-1500 about the Telestar Trailer Park Water Supply.

N1191P

New septic systems installed. State inspected. Low cost repairs to existing systems. Tri-County Environmental. 800-210-4354

SERVICE & REPAIRS

Drywall, all phases, painting. Free Estimates. Experienced, dependable and references. Call Dwayne Shepherd. 428-0365.

HANDYMAN: I will do painting, repair plumbing, brick cleaning, cistern cleaning, etc. **CALL HAROLD, 428-1894.**

Trailer Roofs covered, aluminum, $150. 428-0089.

Will do moving and also haul away old junk. Any type of work. Call Mike at 824-7848.

PUBLIC HEARING NOTICE

To all interested citizens. The Grant County Water Supply Planning Council will hold a public hearing to solicit input concerning Chapter VIII of the Final Plan Document for the Grant County Water Supply Plan. There are two components to 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 Tuesday, September 9, 1997 at 7:00 p.m. in the office of Judge/Executive Shirley Howard at the Grant County Courthouse, Williamstown, KY.

For more information or to submit written comments contact:

Heidi Van Keuren
NKADD
P.O. Box 668, 16 Spiral Drive
Florence, KY 41022-0668
(606) 283-1885

8/28

N8281C

TOBACCO

4000 Tobacco Sticks, $.20 each. 606-485-7346.

WANTED TO BUY: Tobacco Base. $1.00/pound **CASH.** 606-291-5255.

Continued

TOPSOIL

Topsoil for Sale. Sand and Gravel Hauled. Jimmy Williams. 502-857-2205.

WANTED

FOR HIRE: Country Music Band with a little old rock and roll. Call 428-1070 or 606-572-9342, leave message.

WEIGHT LOSS

LOSE WEIGHT!! FEEL GREAT!! Do you need to: Lose Weight? Have More Energy? Have Better Health? Our programs are 100% Natural, Dr. Recommended, 100% Money Back Guarantee! 1-800-472-1869.

Rentals

Town & Country Est.
Brand New Duplexes
Dry Ridge, Ky.

Be one of the first to move into Town & Country Est. duplexes located just 1.5 miles off the Dry Ridge Exit. 2 bdrm., 1.5 ba. with fully equipped kitchens. Monthly rent ranges from $475-$525. No pets. Available now. Call 428-2517 after 5:00 p.m.

NXC E9/22/97

NORWOOD I & II APARTMENTS

Convenient Spacious Affordable!

Crittenden Area 2 Bedroom Apartments, utility room w/ washer-dryer hook-up, stove, refrigerator furnished, NO PETS, 428-1871 leave message.

FOR RENT: Duplex, 2 bedroom, full basement, close to I-75. 824-4587. If no answer, leave message.

FOR RENT: 5 Room House, 2 bedroom, yard, some furniture, washer/dryer, etc. $450/month + deposit. 606-356-7126.

Now taking applications for one bedroom apartment, $350 per month plus a $350 deposit, or 2 bedroom available in Sept., $450 per month plus a $450 deposit. No pets. Lease required. Please call 606-824-6014, 8 a.m. to 4 p.m. Mon.-Fri., Sat. 9-6.

RETAIL SPACE: 600 sq. ft. office/storage area. Midtown Square, Dry Ridge. 606-824-6014.

PINEWOOD INN
18 North Main, Dry Ridge
823-8201
- Weekly Rentals -

1BR APARTMENT; Light Leaf Apartments, Crittenden, EHO. 823-4421.

2 Bedroom Apartment, equipped kitchen, washer/dryer hook-up, close to I-75. $450 + utilities. 606-384-4222.

3 Bedroom Apartment, 1 1/2 bath, laundry room with washer/dryer hook-up, close to I-75. $550 + utilities. 606-384-4222.

3 ROOM APARTMENT: furnished or unfurnished, kitchen equipped, all utilities furnished, including heat and AC. 428-2696

FOR RENT

2 bedroom apartments with fully equipped kitchen, 1 1/2 or 2 baths, utility room, washer/dryer hookup. Quiet

ltary Update —

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'I've also learned to take pride in myself and all I do.'
-Paul Baker, crewmember of the USS Philadelphia

and launch missiles at enemy ships or land targets.

Since joining the Navy, Baker says he's learned a lot, and experienced a lot.

"I learned to take pride in my work," he said. "I've also learned to take pride in myself and all I do."

Baker is married to the former Cathy Roy and has two children, Brittany, 3, and Jacob, a newborn.

NOTICE

This is to express a sincere thanks to the many individuals who rendered assistance during the recent record-breaking snowfall in Grant County. These individuals willingly assisted in snow removal, making deliveries to persons who were unable to travel and countless other acts of helpfulness. Thanks also to the employees of each of the cities and the state highway employees. A special thanks to the employees of the Grant County Road Department for their dedicated service. The magnitude of this storm taxed all resources to the limit and the cooperation and understanding of all is appreciated.

/s/ Shirley Howard
GRANT COUNTY
JUDGE/EXECUTIVE
N2191C

SURPLUS PROPERTY SALE
The following property will be offered for sale by sealed said bid by

PUBLIC HEARING NOTICE

To all interested citizens. The Grant 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 Tuesday, March 10, 1998 at 7:00 p.m. at the Grant County Courthouse. Copies of the water supply alternatives evaluation form may be obtained from the office of Judge/Executive Shirley Howard during regular business hours.

For more information or to submit written comments, contact:
Heidi Van Keuren
Northern Kentucky Area Development District
P.O. Box 668, 16 Spiral Drive
Florence, KY 41022-0668
(606) 283-1885

N2191C

APPENDIX C: WORKPLAN

GRANT COUNTY WATER SUPPLY PLANNING COUNCIL
GRANT APPLICATION AND WORKPLAN
JUNE 14, 1995

COST PROPOSAL AND WORKPLAN

I. TASKS TO BE PERFORMED

The Northern Kentucky Area Development District (NKADD) can serve as the planning representative and complete all duties as per 401 KAR 4:220, Section 6, as outlined below:

PHASE I

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.

4. Identify potential sources of water to use in case of contamination or some similar emergency.

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

Data Collection

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

2. Assess water use for the base year by determining the amounts of water used by water suppliers, by water distributors, by withdrawal by permittees other than water suppliers or distributors, by agricultural use or by other permit-exempt water withdrawals. Assessment will be completely documented.

3. Summarize soils and geologic characteristics for the county.

4. Identify and contact any single user that purchases twenty percent or more of the water produced by water suppliers and review any plans such users have that may affect future water use.

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.

Engineering

1. Calculate the amount of available water at the site of any water supplier intake or a stream.

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. Coordinate with other contractors to supply safe yield, specific capacity, zone of contribution, and zone of influence for each water supplier well.

4. Determine existing treatment and total distribution capacity of the water suppliers.

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.

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 regulations.

5. Prepare a service area map for the county showing the existing jurisdictional and service area boundaries of water suppliers and distributors.

6. Prepare an expansion map showing existing expansion plans of water suppliers 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 I work would begin in July 1994 and would be completed in June 1995. Phase II work would begin in July 1995 and would be completed in June 1996. A timetable with quarterly goals is outlined below.

Timetable

July 1995 - September 1995

- Formulation of Goals and Objectives
- Public meetings
- Information review
- Begin mapping requirements (Phase I)
- Data collection (Phase I)

October 1995 - December 1995

- Complete data collection (Phase I)
- Data Analysis
- Computer forecasting using IWR-MAIN

January 1996 - March 1996

- Complete mapping requirements (Phase I)
- Prepare Plan Formulation Document (Phase I)

March 1996 - May 1996

- Prepare Final Plan Document (Phase I)

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 of Phase I and Phase II planning activities is $22,000.00
Costs per phase are broken down below.

Phase I

Planning	$ 1,500
Data Collection	$ 2,000
Engineering	$ 2,000
Computer Modeling and Data Analysis.....	$ 4,000
Graphics	$ 1,500
Subtotal	$11,000

Phase II

Planning	$ 6,000
Data Collection	$ 3,500
Graphics	$ 1,500
Subtotal	$10,000
TOTAL	**$22,000**

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

NORTHERN KENTUCKY AREA DEVELOPMENT DISTRICT
GRANT 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	_____%
1994	_____	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
1994	_____ GPD	_____ GPD

CUSTOMERS (TOTAL BY CATEGORY)

	1980	1985	1990	1994
RESIDENTIAL	_____	_____	_____	_____
COMMERCIAL	_____	_____	_____	_____
INDUSTRIAL	_____	_____	_____	_____
INSTITUTIONAL	_____	_____	_____	_____

AVERAGE USAGE BY CATEGORY

	1980	1985	1990	1994
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?

_____

_____

_____

IF YOU HAVE ANY QUESTIONS ABOUT THIS FORM, PLEASE CONTACT HEIDI VAN KEUREN AT (606) 283-1885.

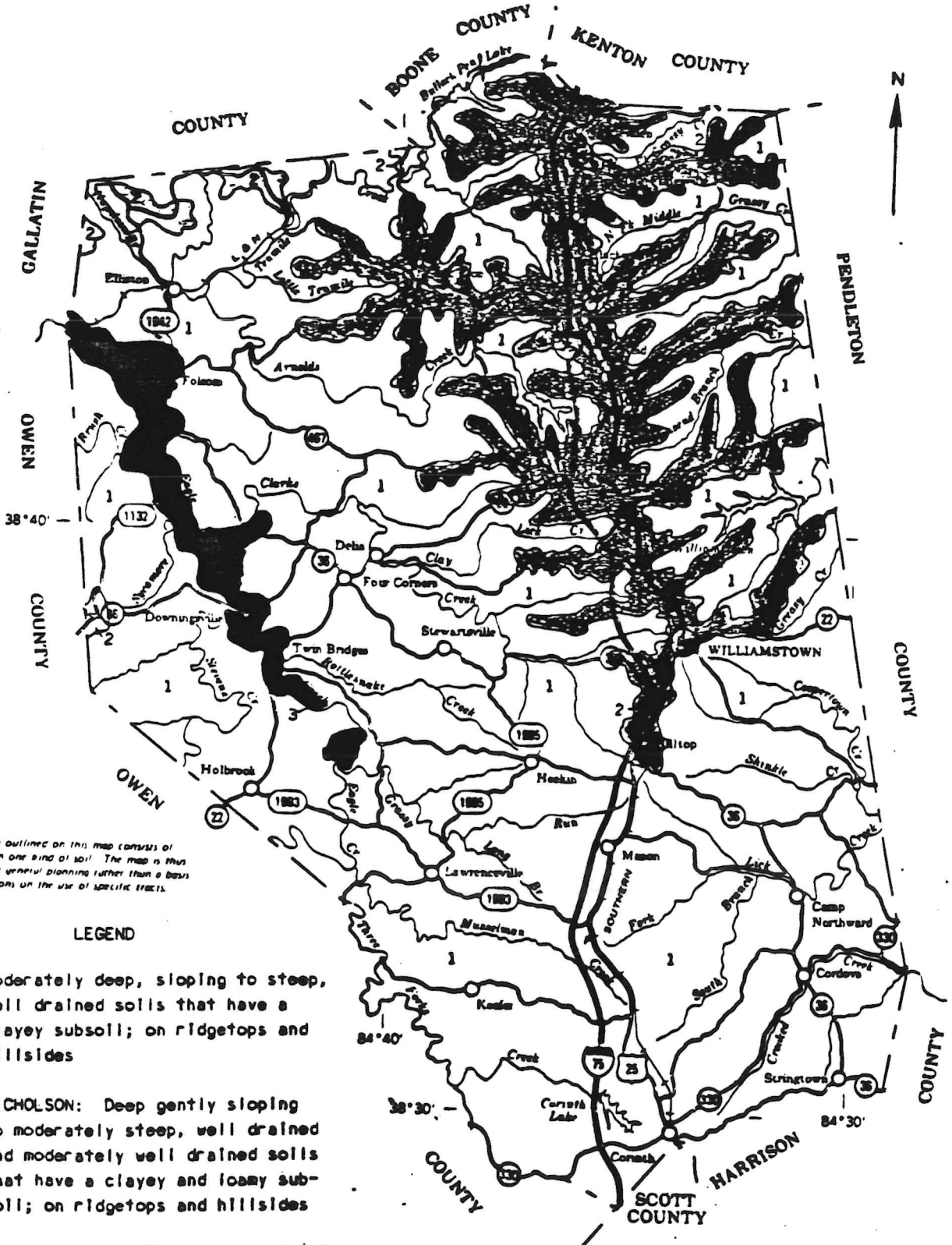
PLEASE MAIL OR FAX THE COMPLETED SURVEY TO THE NORTHERN KENTUCKY AREA DEVELOPMENT DISTRICT (NKADD).

NKADD
P.O. BOX 668
FLORENCE, KY 41022-0668
ATTN: HEIDI VAN KEUREN

FAX #: (606) 283-8178

APPENDIX E: SOILS MAP

GENERAL SOIL MAP
GRANT COUNTY, KENTUCKY



LEGEND

1 — EDEN: Moderately deep, sloping to steep, well drained soils that have a clayey subsoil; on ridgetops and hillsides

LOWELL-NICHOLSON: Deep gently sloping to moderately steep, well drained and moderately well drained soils that have a clayey and loamy subsoil; on ridgetops and hillsides

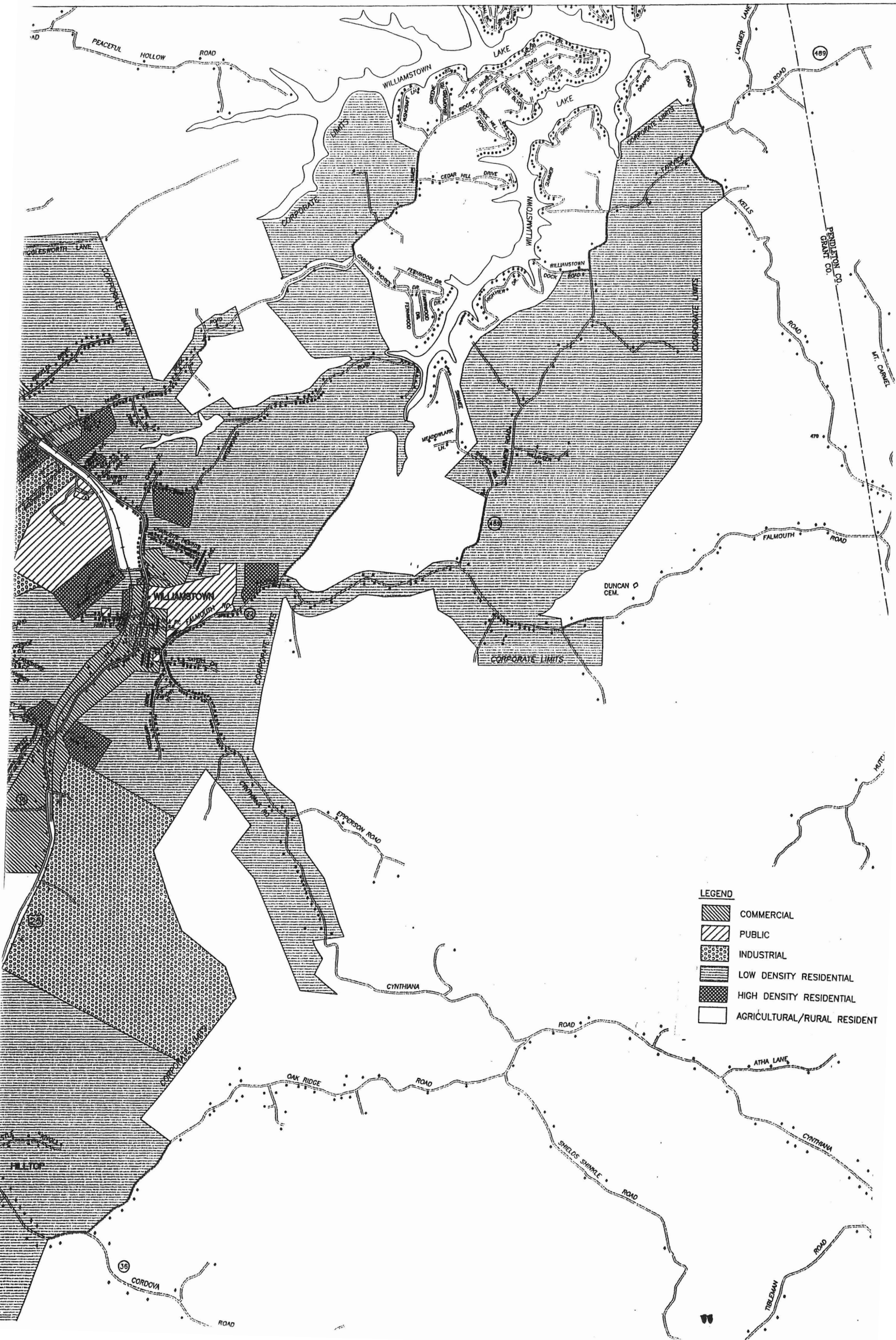
NOLIN-LICKING-OTWELL: Deep, nearly level to moderately steep, well drained and moderately well drained soils that have a loamy or clayey subsoil; on flood plains and stream terraces

SCALE

1" = 190080 feet

1 0 1 2 3 Miles

APPENDIX F: ZONING ORDINANCE & SUBDIVISION REGULATION EXCERPTS


PEACEFUL HOLLOW ROAD
WILLIAMSTOWN LAKE
LATIMER LANE
ROAD
489
DRAPER ROAD
CORPORATE LIMITS
CEDAR HILL DRIVE
WILLIAMSTOWN DOCK ROAD
KELLS ROAD
PENDLETON CO.
GRANT CO.
MT. CARMEL
CABANNA SHORES
FERNWOOD DR.
HIGHVIEW DR.
MEADOWLARK LN.
FALMOUTH ROAD
DUNCAN CEM.
WILLIAMSTOWN
PT. FALMOUTH RD.
CABANNA RD.
EPPERSON ROAD
CYNTHIANA ROAD
OAK RIDGE ROAD
SHIELDS SHINKLE ROAD
ATHA LANE
TIBLEMAN ROAD
CORDOVA ROAD
HILLTOP
LEGEND
COMMERCIAL
PUBLIC
INDUSTRIAL
LOW DENSITY RESIDENTIAL
HIGH DENSITY RESIDENTIAL
AGRICULTURAL/RURAL RESIDENT

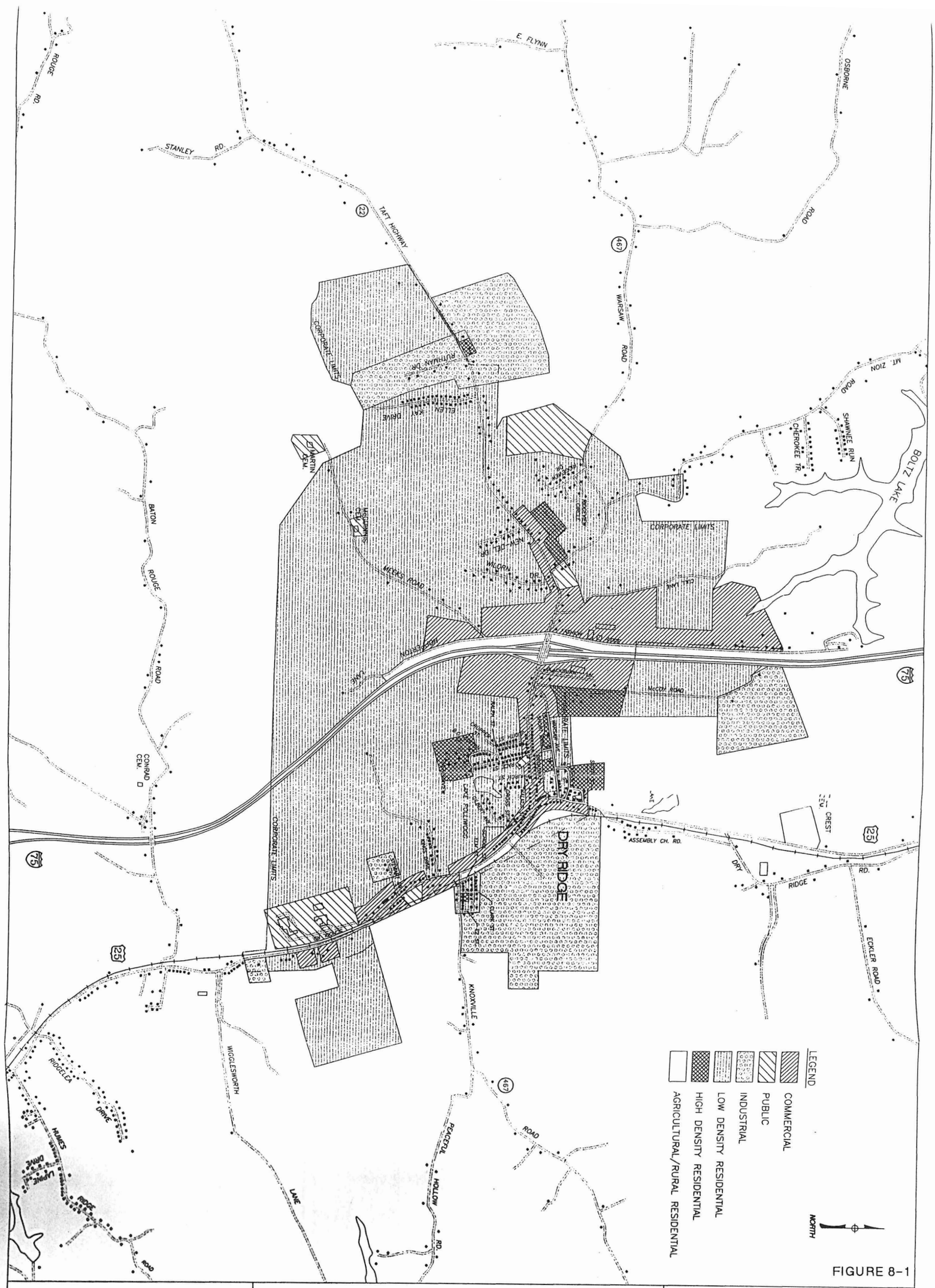


FIGURE 8-1

KL&A

GRANT COUNTY COMPREHENSIVE PLAN

CITY OF DRY RIDGE FUTURE LAND USE

0 1000 2000 4000

GRAPHIC SCALE (FT.)

FIGURE 8-2

KL&A

GRANT COUNTY COMPREHENSIVE PLAN

CITY OF CRITTENDEN FUTURE LAND USE

0 1000 2000 4000

GRAPHIC SCALE (FT.)

2. If the Planning Commission, or its duly authorized representative, find that the extensions across undeveloped areas would not be warranted as a special assessment to the intervening properties or as a governmental expense until some future time, the developer shall be required, if he wishes to proceed with the development, to obtain necessary easements or rights-of-way and construct and pay for such extensions. Such improvements shall be available for connections by subdividers of adjoining land and the subdivider may contract with adjacent property owners and/or subdividers of adjacent land for reimbursement of the oversize and/or off-site improvements constructed.

SECTION 7.13 PLANS REQUIRED FOR THE CONTROL OF EROSION AND SEDIMENTATION: In the event that any developer shall intend to make changes in the contour of any land proposed to be subdivided, developed, or changed in use by grading, excavating or the removal or destruction of the natural topsoil, trees, or other vegetative covering thereon the same shall only be accomplished after the owner of said land or his agent has submitted to the Planning Commission, or its duly authorized representative, for approval, a plan for erosion and sedimentation controls, unless there has been a prior determination by the Planning Commission, or its duly authorized representative, that such plans are not necessary.

Such plans shall contain adequate measures for control of erosion and siltation, where necessary, using the guidelines and policies contained herein.

The Planning Commission, or its duly authorized representative, shall review these plans as submitted, and shall take necessary steps to insure compliance by the developer with these plans as finally approved.

A. REQUIREMENTS:

1. Three (3) sets of plans for the control of erosion and sedimentation shall be submitted to the Planning Commission, or its duly authorized representative, at the time the final plat drawings are submitted.

2. Measures to be taken to control erosion and sedimentation shall be described and provided for in the construction agreement and the estimated cost of accomplishing such measures shall be covered in the performance bond (as per section 7.20 B (1) of these regulations). In addition the subdivider shall be required to provide a cash escrow guarantee (to be held by a company which is in the practice of handling escrows, approved by the fiscal court) in an amount determined by the Planning Commission, or its duly authorized representative, which would insure the city or county that emergency measures could be taken by the city at the subdivider's expense, if he did not initiate corrective action determined to be needed by the Planning Commission, or its duly authorized representative. In this regard, the subdivider shall. at the time of Final Plat submission, deliver to the fiscal court , written instructions addressed to the escrow holder which shall authorize and instruct the escrow holder to (1) convey to the subdivider, after completion of the entire subdivision, (as per the construction agreement) upon approval,

by resolution of the fiscal court the cash guarantee or (2) to convey to the city or county, when the fiscal court has approved such action, by resolution, such amounts of the cash guarantee, as the resolution requires.

3. At the building permit application stage, a review will be conducted to insure conformance with the plan as approved.

4. During the construction phase, further consultive technical assistance will be furnished, if necessary, by the Planning Commission, or its duly authorized representative, or by the local representative of the Soil Conservation Service. The Planning Commission, or its duly authorized representative, shall enforce compliance with the approved plans.

5. The Planning Commission, or its duly authorized representative, shall make a continuing review and evaluation of the methods used and the overall effectiveness of the erosion and sedimentation control program.

B. SUGGESTED CONTROL MEASURES: The following control measures should be used for an effective erosion and sediment control plan:

1. The smallest practical area of land should be exposed at any one time during development.

2. When land is exposed during development, the exposure should be kept to the shortest practical period of time.

3. Where necessary, temporary vegetation and/or mulching should be used to protect areas exposed during development.

4. Sediment basins (debris basins, desilting basins, or silt traps) should be installed and maintained to remove sediment from run-off waters from land undergoing development.

5. Provisions should be made to effectively accommodate the increased run-off caused by changed soil and surface conditions during and after development.

6. The permanent final vegetation and structures should be installed as soon as practical in the development.

7. The development plan should be fitted to the topography and soils so as to create the least erosion potential.

8. Wherever feasible, natural vegetation should be retained and protected.

SECTION 7.14 CONSTRUCTION INSPECTIONS:

A. RESPONSIBLE OFFICIAL: The Planning Commission, or its duly authorized representative, shall be responsible for the inspection of all improvements.

B. AUTHORITY AND DUTIES OF INSPECTORS: Inspectors employed by the city or county shall be authorized to inspect all work done and all materials furnished. Such inspection may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. The inspector shall not be authorized to revoke, alter, or waive any requirements of the specifications or plans. He shall be authorized to call the attention of the contractor to any failure of the work or materials to conform to the specifications and contract. He shall have the authority to reject materials which do not meet specification requirements or suspend the portion of the work involved until any question at issue can be referred to and decided by the Planning Commission, or its duly authorized representative.

C. FINAL INSPECTION: Upon completion of all the improvements, the subdivider shall request, in writing, a final inspection by the Planning Commission, or its duly authorized representative. The Planning Commission, or its duly authorized representative, shall make a final inspection of streets, sidewalks, curbs and gutters, sanitary and storm sewers, water mains and other improvements required in these regulations.

SECTION 7.15 CONSTRUCTION RESPONSIBILITIES:

A. COOPERATION OF SUBDIVIDER AND/OR CONTRACTOR: The subdivider and/or contractor shall have available on the project, at all times, two (2) copies of all required plans and specifications. He shall cooperate with the inspector and with other contractors in every way possible. The subdivider and/or contractor shall at all times have a competent superintendent acting as his agent on the project. The superintendent shall be capable of reading and thoroughly understanding the plans and specifications and he shall receive instructions from the inspector. The superintendent shall have full authority to execute the orders or directions of the inspector and to promptly supply such materials, tools, plant equipment, and labor as may be required. The inspector's orders should be executed without delay. A superintendent shall be furnished irrespective of the amount of work sublet.

SECTION 7.16 STATIONINGS: Pavement and utility grade stakes shall be set at intervals of twenty-five (25), fifty (50) or one hundred (100) feet, depending on the regularity of the ground surface and the accuracy required, and to determine the elevation of the ground surface at each of these points. The Planning Commission, or its duly authorized representative, may ask for additional grace stakes if it is deemed necessary.

SECTION 7.17 REPAIR OF DAMAGE: Any damage done to the improvements by construction traffic, local traffic or by any other means shall be repaired or the damaged materials replaced before the next item of construction is begun.

SECTION 7.18 FINAL CLEANING UP: Upon completion of the work and before acceptance, the subdivider and/or contractor shall clean up all ground occupied or affected by him in connection with the work. The entire area shall be kept in a neat and presentable condition during the entire duration of the project and left in a neat and presentable condition satisfactory to the inspector.

APPENDIX G: WATER RESOURCES INFORMATION

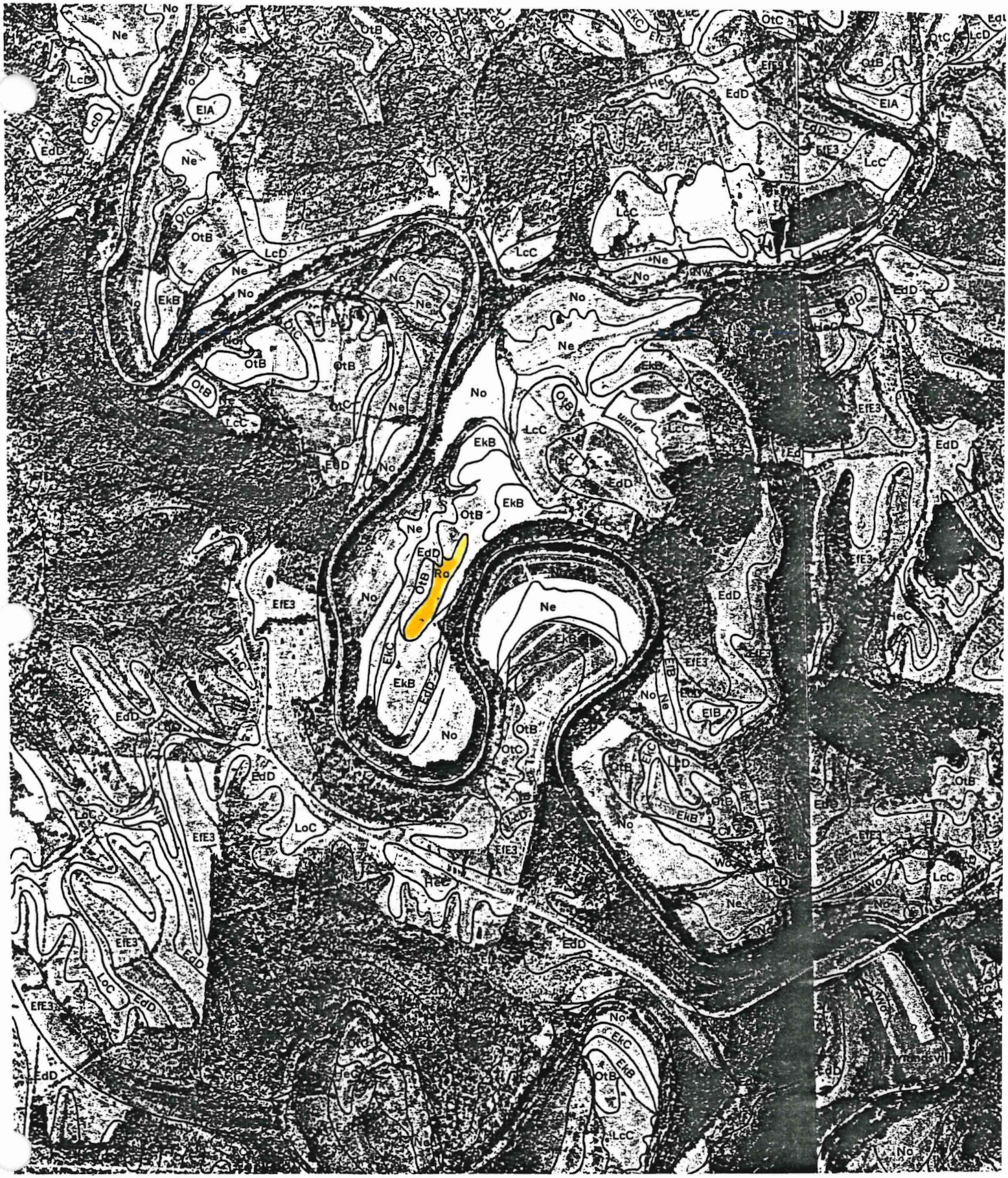
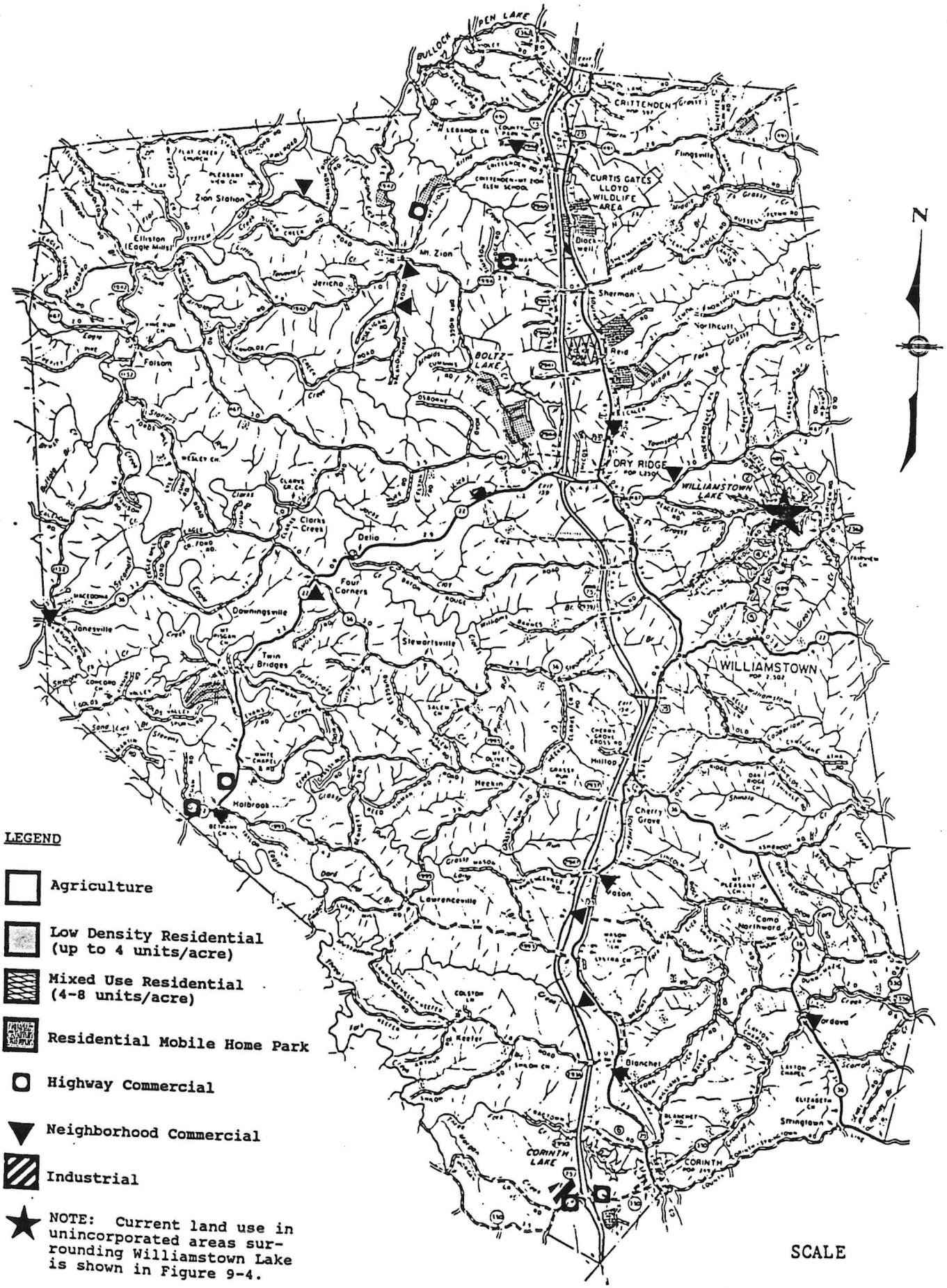

No
Ne
OtB
LcD
EkC
OtC
EfE3
HeC
EdD
EIA
LcC
EkB
Ro
water
EIB
LoC

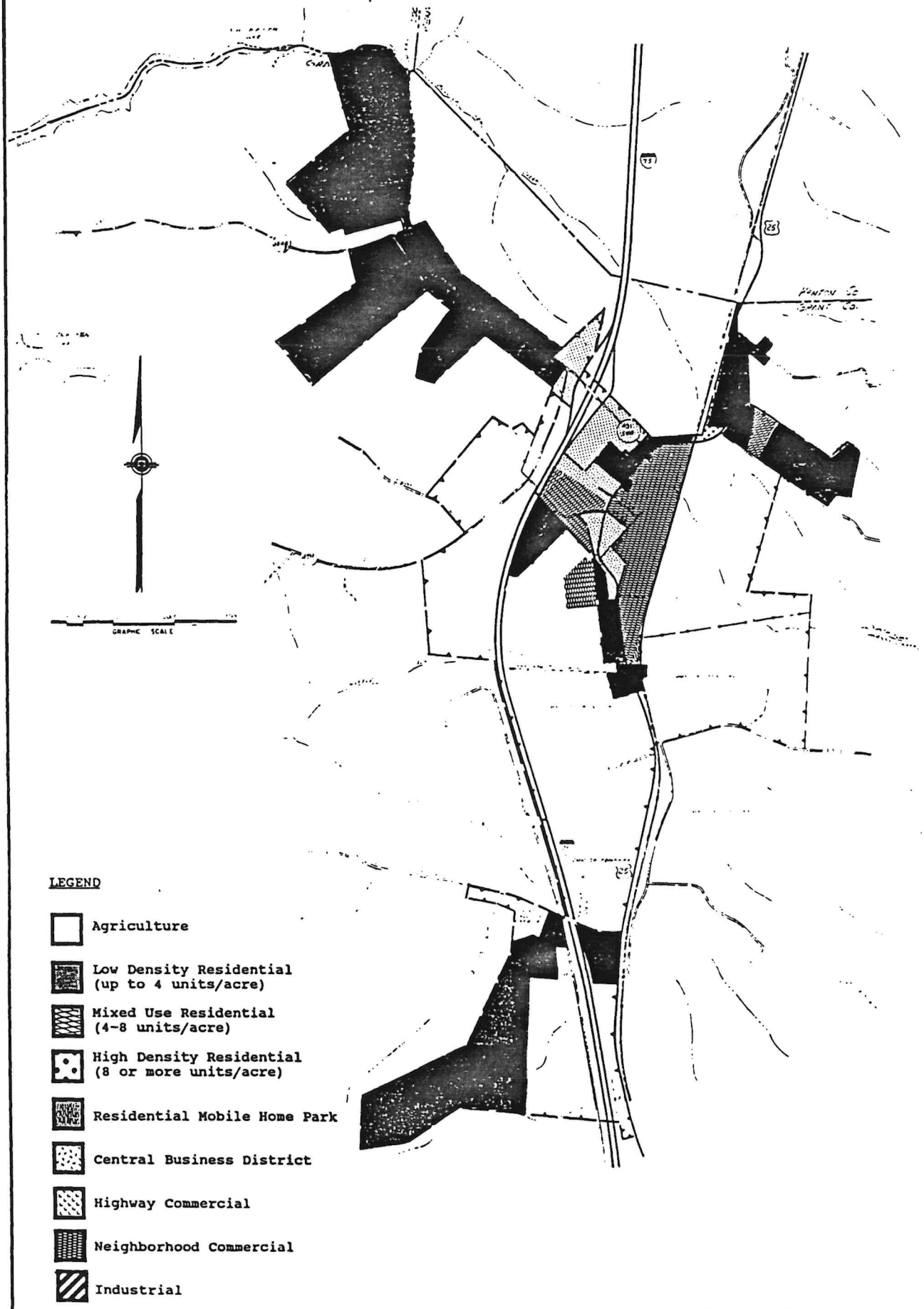
FIGURE 9-1
GRANT COUNTY: EXISTING LAND USE



LEGEND

- Agriculture
- Low Density Residential (up to 4 units/acre)
- Mixed Use Residential (4-8 units/acre)
- Residential Mobile Home Park
- Highway Commercial
- Neighborhood Commercial
- Industrial
- ★ NOTE: Current land use in unincorporated areas surrounding Williamstown Lake is shown in Figure 9-4.

FIGURE 9-2
CRITTENDEN, KENTUCKY: EXISTING LAND USE



Base Map Prepared By:
Hicks & Mann, Inc.
Williamstown, Kentucky

FIGURE 9-3
DRY RIDGE, KENTUCKY: EXISTING LAND USE

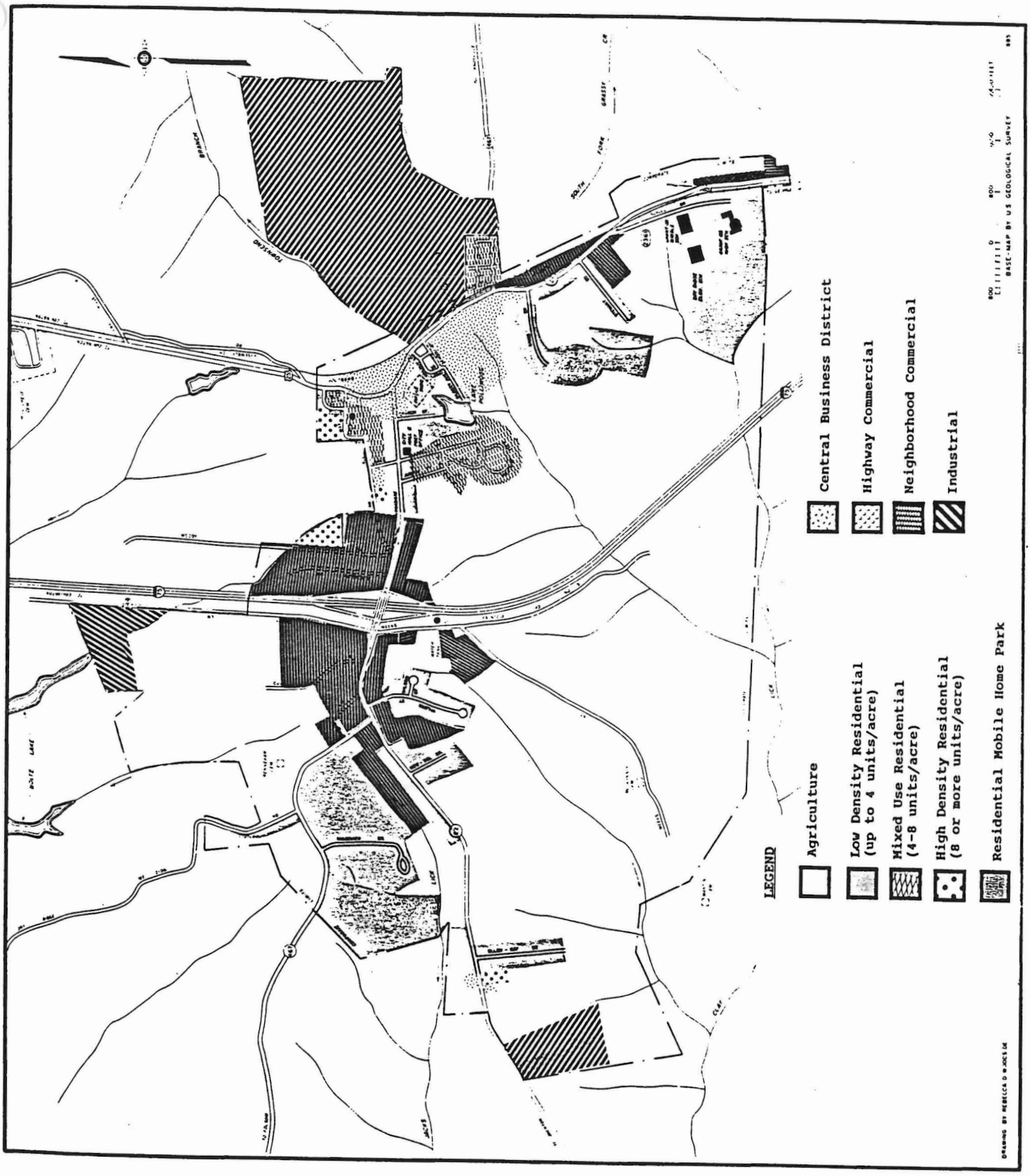


FIGURE 9-4
WILLIAMSTOWN, KENTUCKY: EXISTING LAND USE

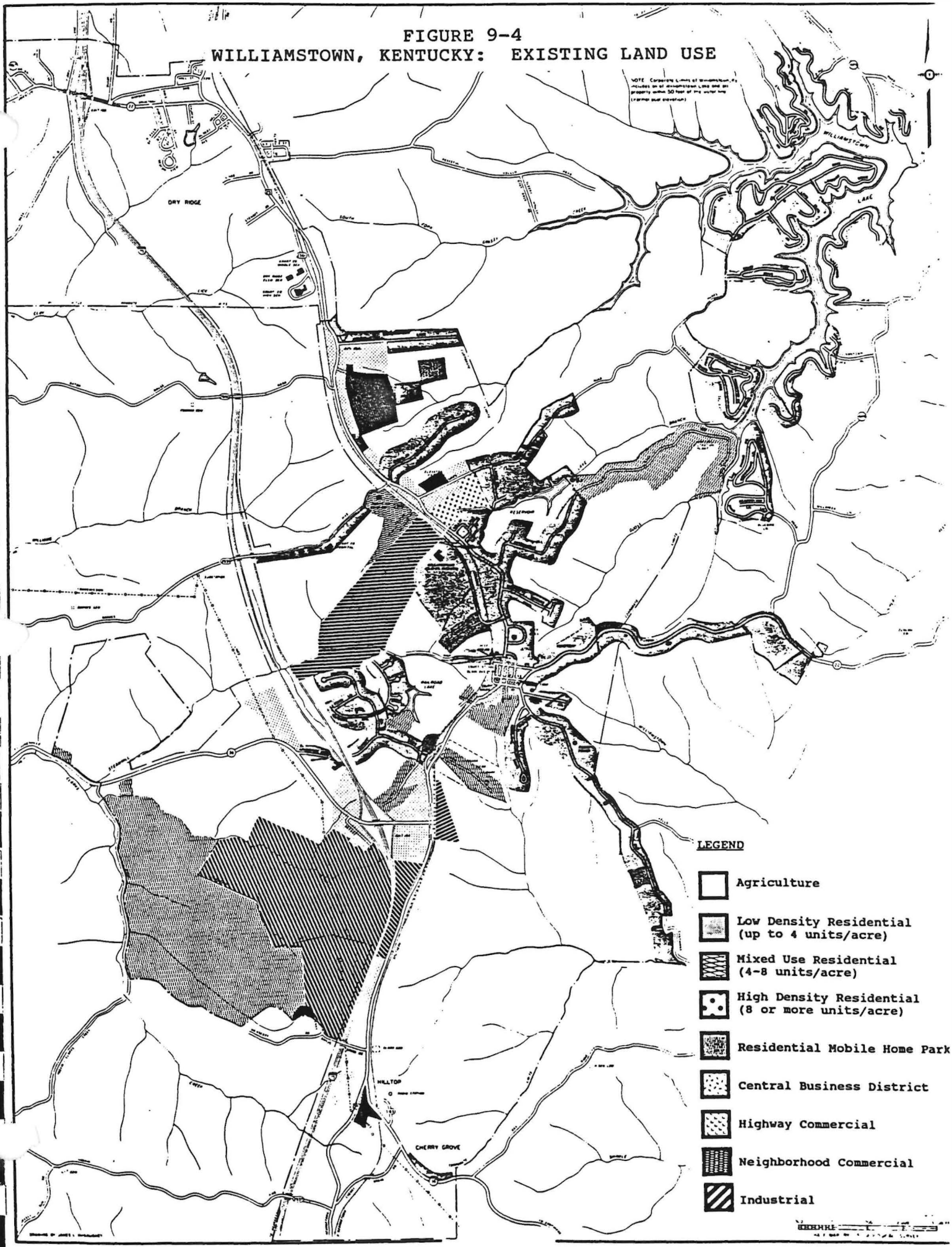
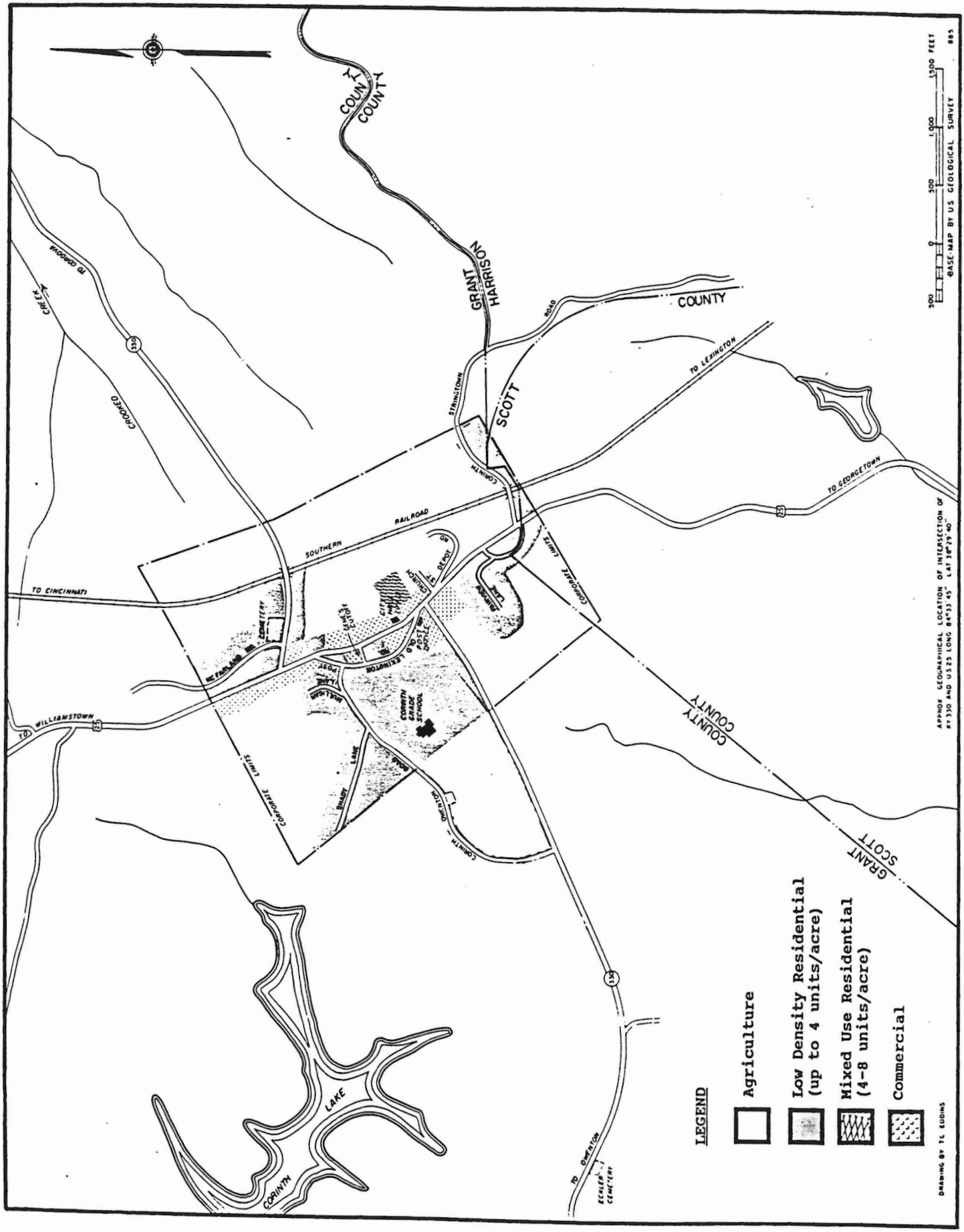


FIGURE 9-5
CORINTH, KENTUCKY: EXISTING LAND USE



GENERAL HIGHWAY MAP

GRANT COUNTY

KENTUCKY

PREPARED BY THE

KENTUCKY TRANSPORTATION CABINET

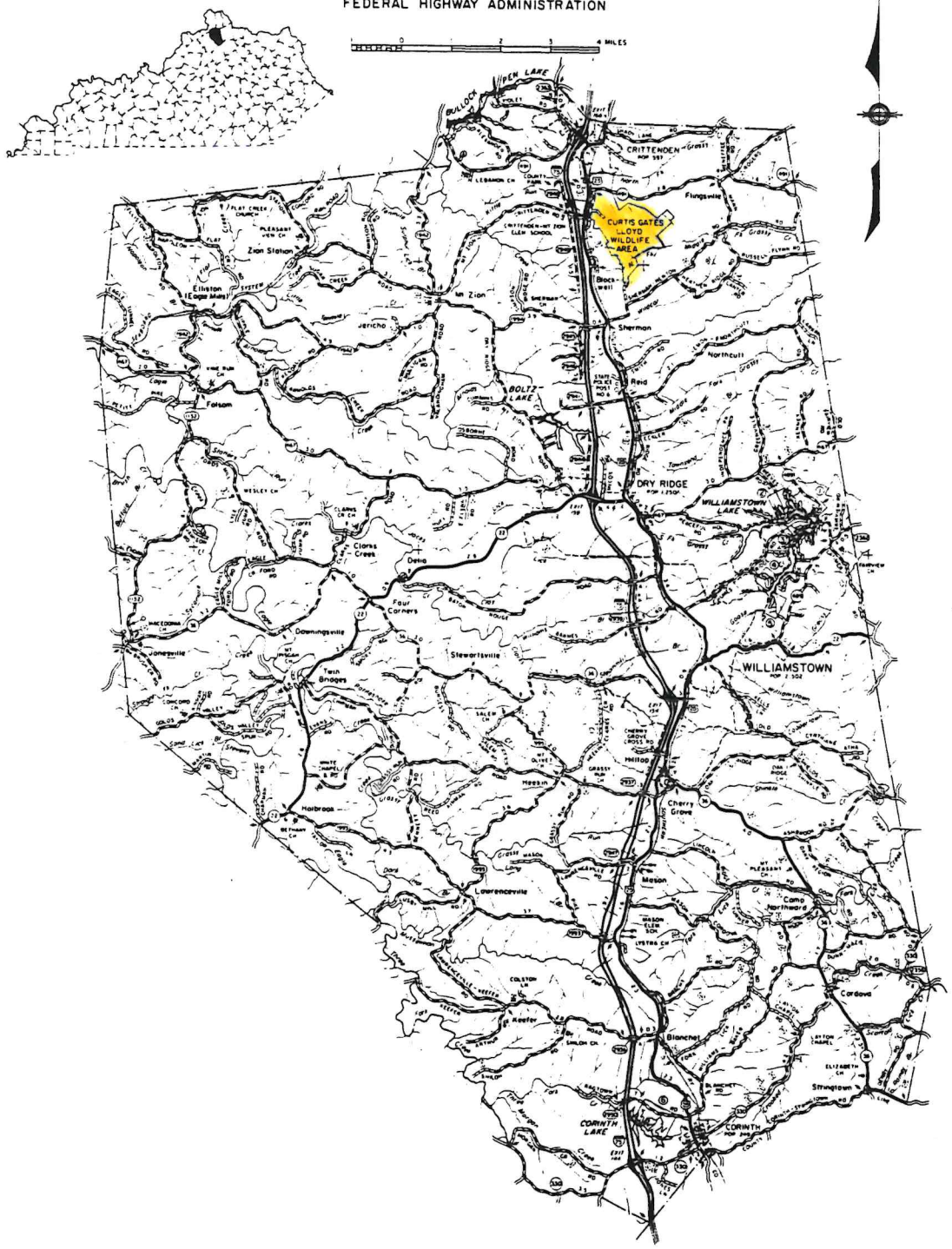
DEPARTMENT OF HIGHWAYS

DIVISION OF PLANNING

IN COOPERATION WITH THE

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION



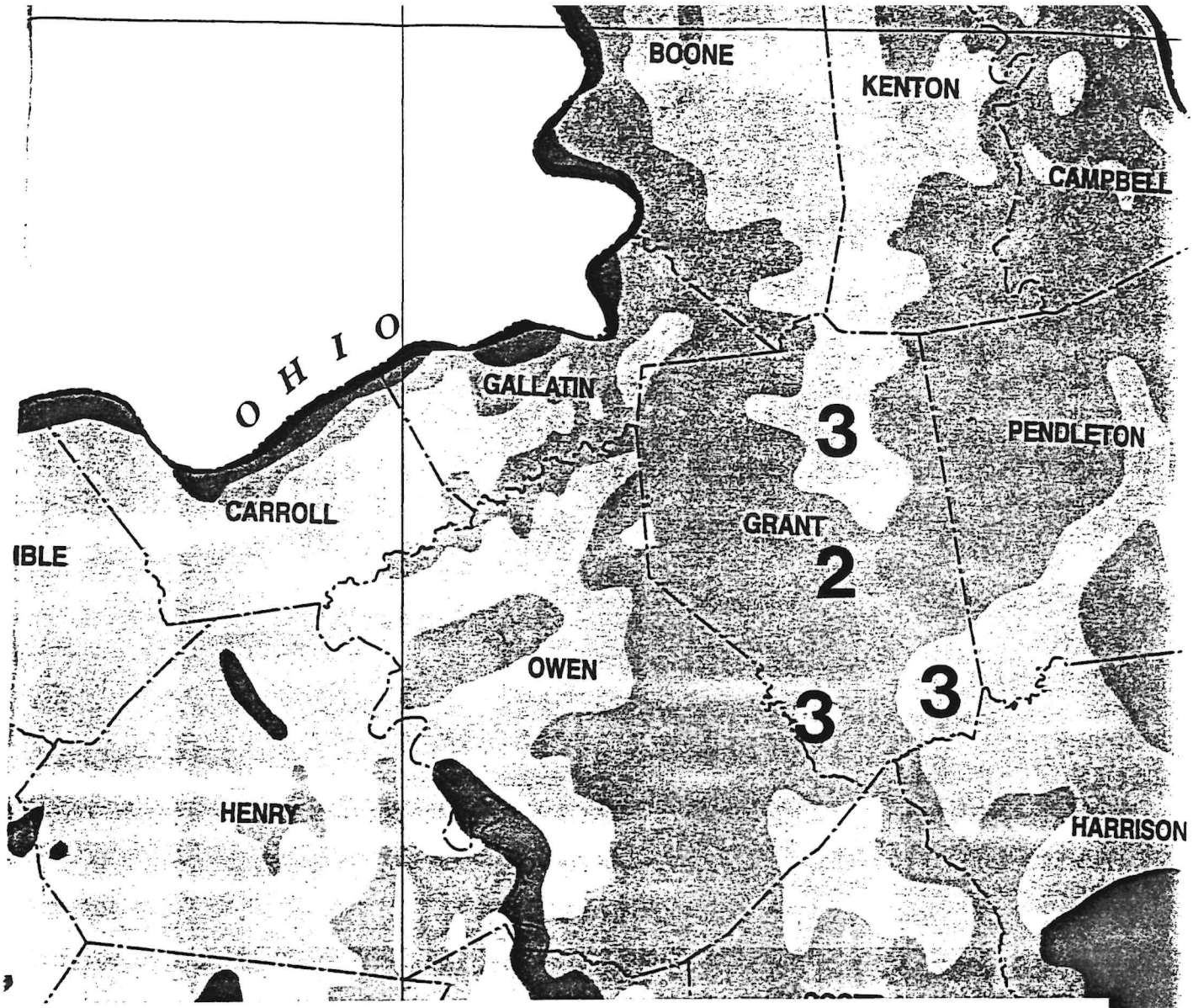
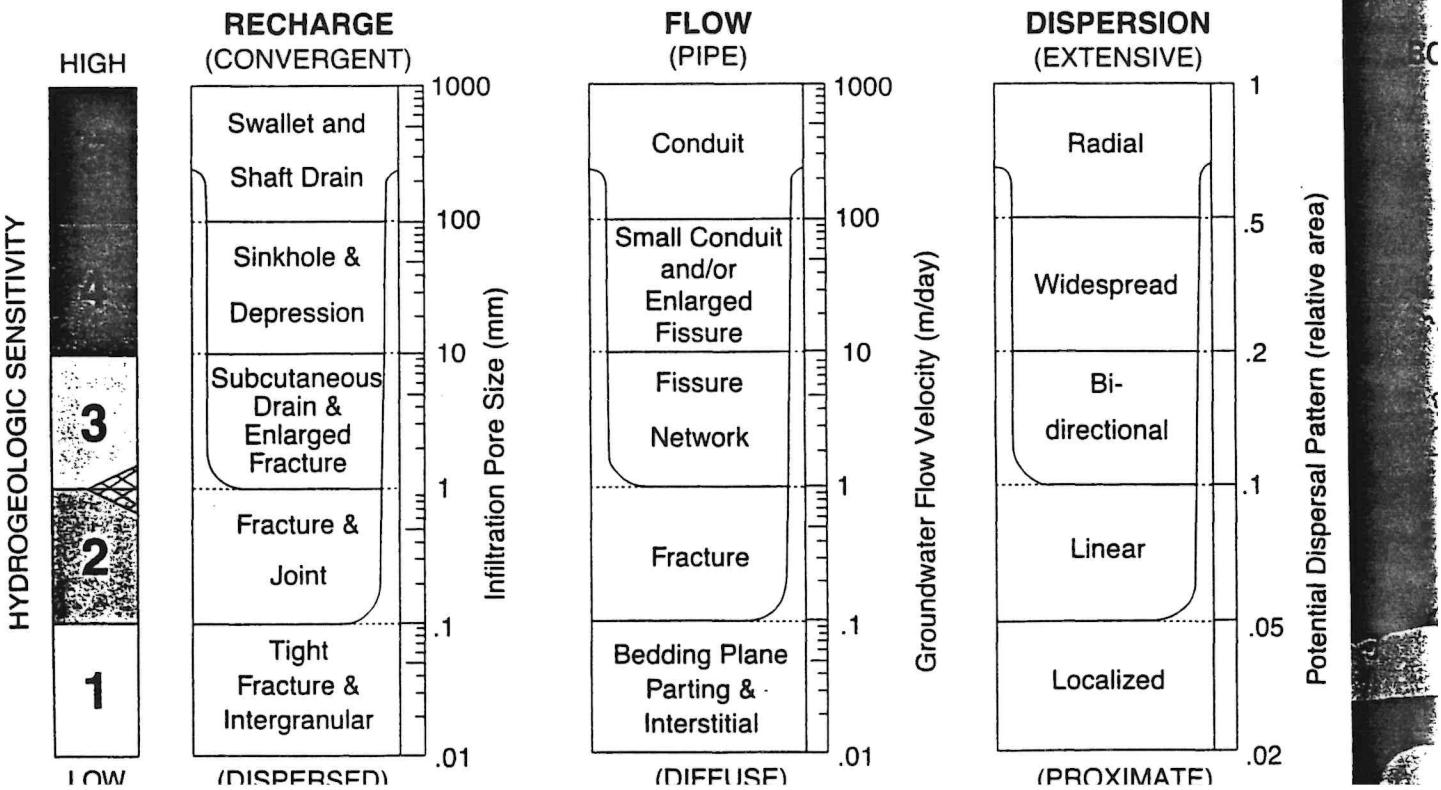
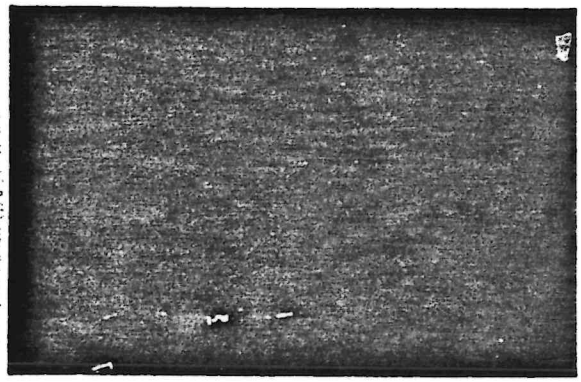


Figure 1: Hydrogeologic Sensitivity Rating Graph



BULLOCK PEN LAKE



LOCATION AND FACILITIES

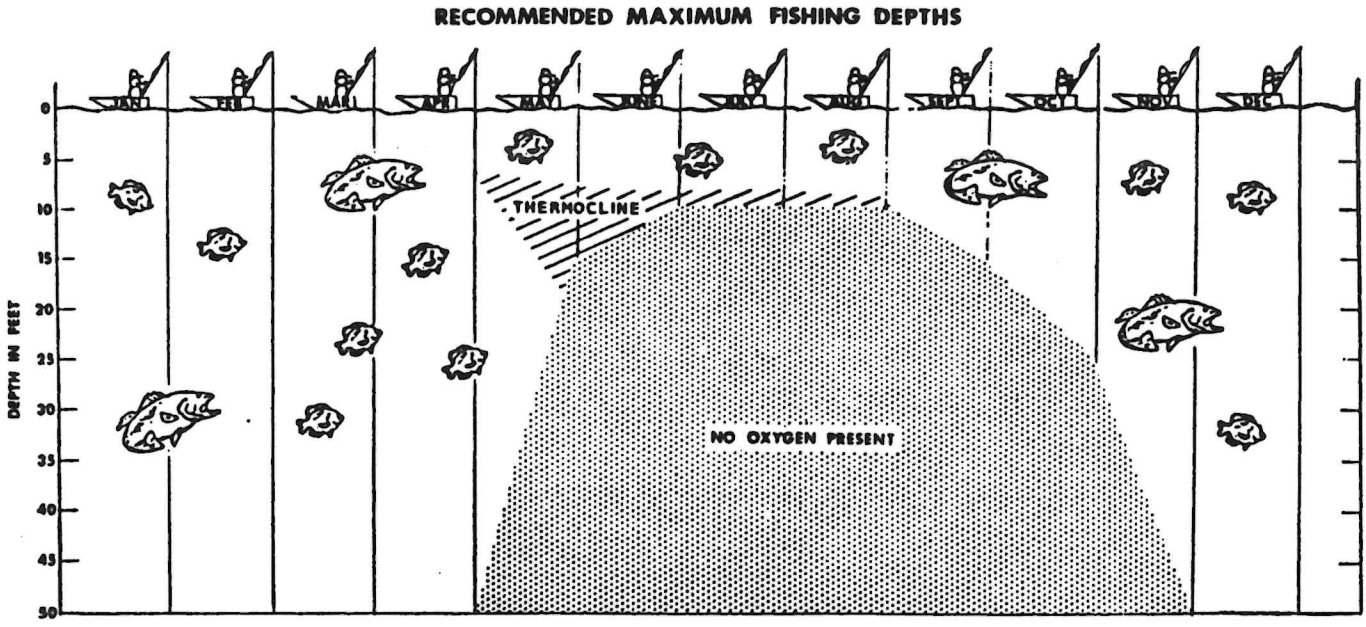
Bullock Pen is located in Grant County approximately 2 miles west of Crittenden off Highway 491. This lake, owned by the Kentucky Department of Fish and Wildlife Resources, was built in 1953 and opened to fishing in 1955. Docks at the lake provide boats, motors, and tackle. A launching ramp is also available for those who want to use their own boats.

THE FISHERY

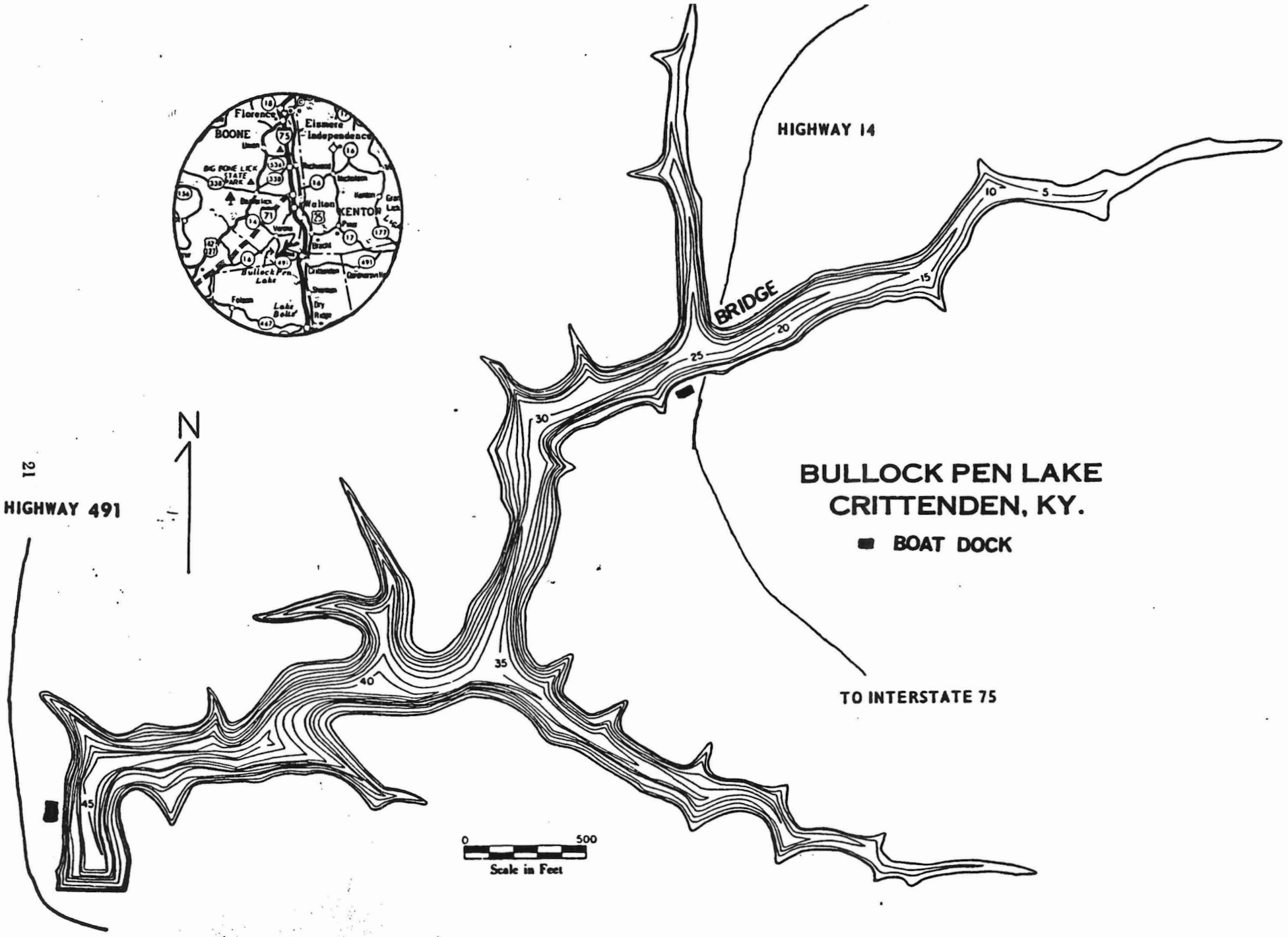
Species that may be taken include largemouth bass, bluegill, redear sunfish, green sunfish, white crappie, channel catfish, and yellow bullhead.

PHYSICAL DATA

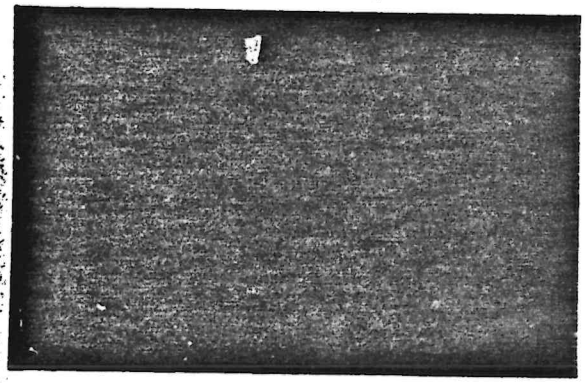
Surface elevation (ft msl)	761.5
Surface acres	134
Miles of shoreline	11.4
Maximum depth (ft)	48
Mean depth (ft)	18



BULLOCK PEN LAKE


HIGHWAY 14
BRIDGE
HIGHWAY 491
N
BULLOCK PEN LAKE
CRITTENDEN, KY.
BOAT DOCK
TO INTERSTATE 75
5
10
15
20
25
30
35
40
45
0
500
Scale in Feet
Florence
Elsmere
Independence
BOONE
Walton
CENTOR
Verona
Bullock Pen Lake
Lake Bolin
Dry Ridge
Folsom

BOLTZ LAKE



LOCATION AND FACILITIES

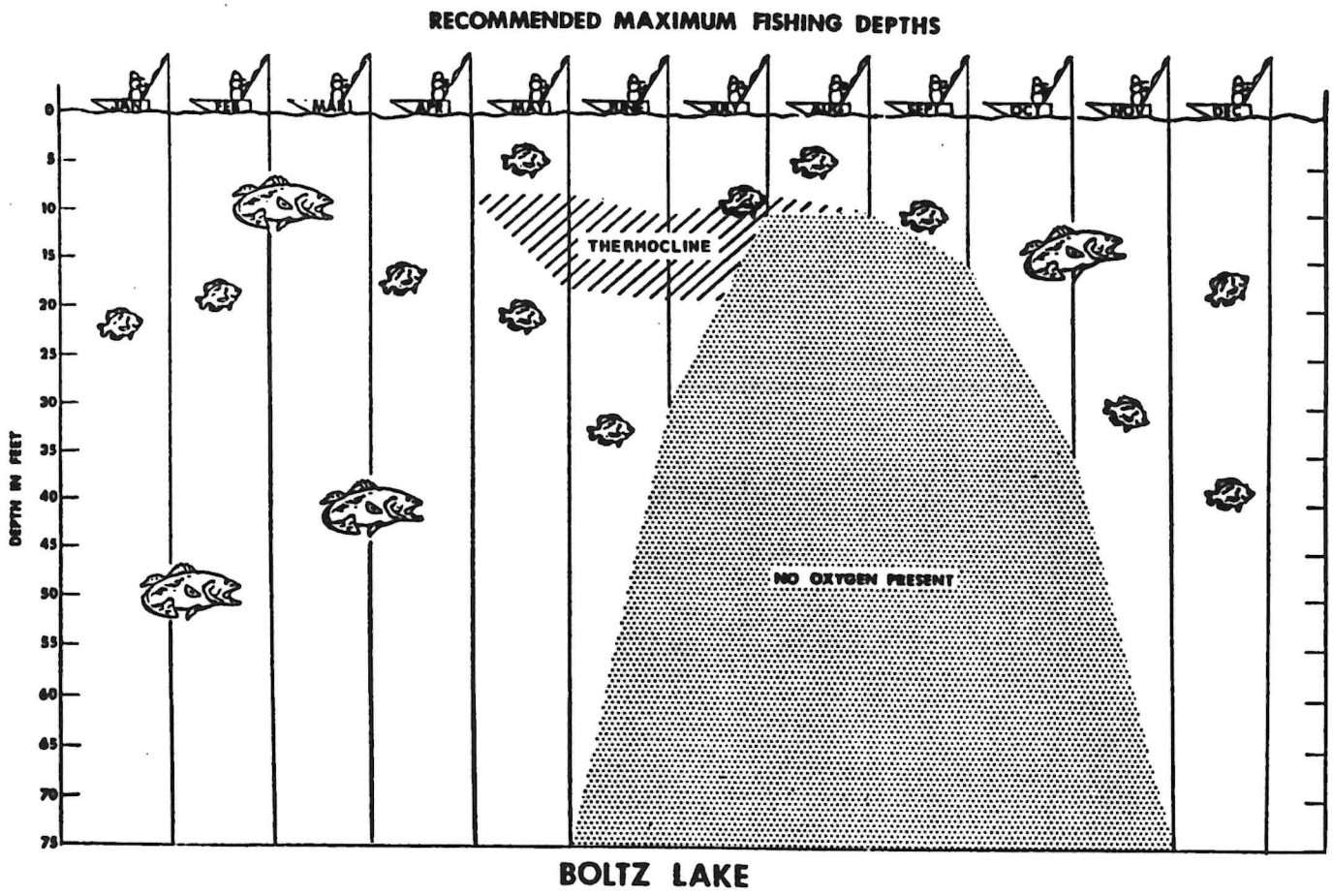
Boltz Lake is located in Grant County approximately 4 miles from Dry Ridge off State Highway 467. This lake, owned by the Kentucky Department of Fish and Wildlife Resources, was built in 1956 and opened to fishing in 1958. Facilities at the lake include a boat dock and launching ramp. Boats, motors, and bait may be acquired at the dock.

THE FISHERY

Species present in the lake include largemouth bass, white crappie, bluegill, green sunfish, redear sunfish, channel catfish, flathead catfish, black bullhead, white sucker, bluntnose minnow, and fathead minnow.

PHYSICAL DATA

Surface elevation (ft msl)	827.0
Surface acres	92
Miles of shoreline	6.6
Maximum depth (ft)	72
Mean depth (ft)	24



BOLTZ LAKE

DRY RIDGE, KY.

70
60
50
40
30
20
10

17

BOAT DOCK

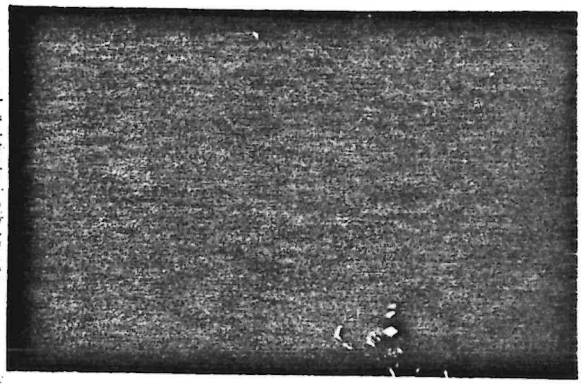
N

0 500
SCALE IN FEET

HIGHWAY 467

TO HIGHWAY 22

CORINTH LAKE



LOCATION AND FACILITIES

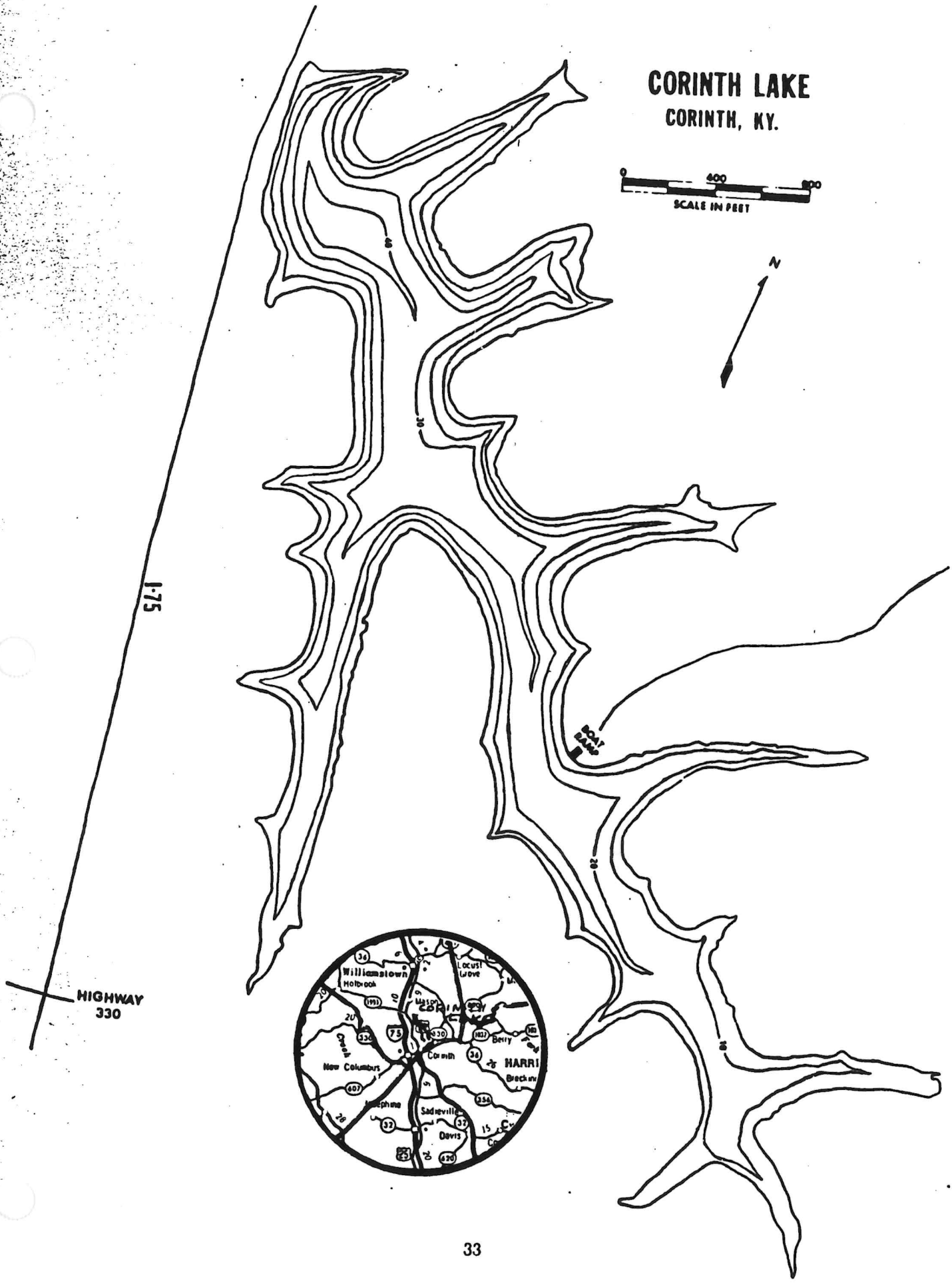
Corinth Lake is located in Grant County approximately 3 miles west of Corinth. This lake, owned by the Kentucky Department of Fish and Wildlife Resources, was built in 1963 and opened to fishing the same year. A launching ramp is the only facility available.

THE FISHERY

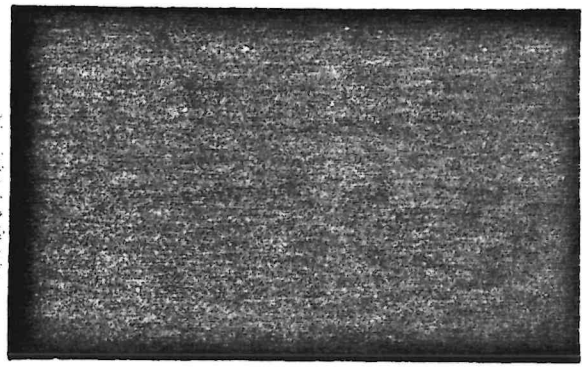
Species present that may be harvested are largemouth bass, bluegill, green sunfish, and channel catfish.

PHYSICAL DATA

Surface elevation (ft msl)	840.0
Surface acres	96
Miles of shoreline	5.4
Maximum depth (ft)	42
Mean depth (ft)	17


CORINTH LAKE
CORINTH, KY.
0
400
800
SCALE IN FEET
N
I-75
HIGHWAY
330
BOAT RAMP
20
Williamstown
Locust Grove
Corinth
Berry
New Columbus
Sadieville
Davis

WILLIAMSTOWN LAKE



LOCATION AND FACILITIES

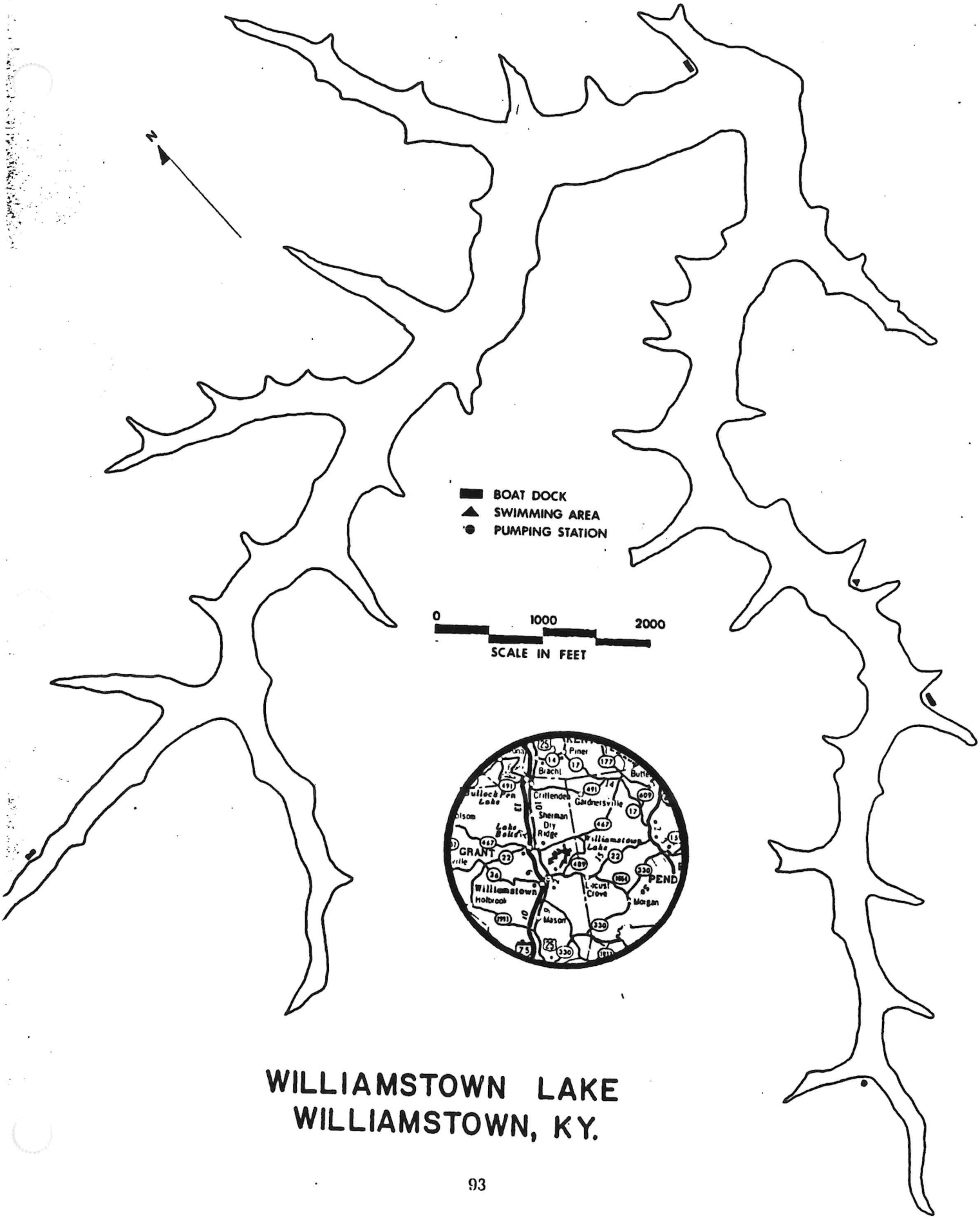
Williamstown Lake is located in Grant County on Grassy Creek 2 miles east of Williamstown. Facilities include boat launching ramps, boat docks, and swimming areas. Boats and motors may be rented, and bait or tackle may be purchased at the docks. The lake was built in 1955 and opened to fishing in 1957.

THE FISHERY

Species present in Williamstown Lake include largemouth bass, bluegill, white crappie, black crappie, redear sunfish, green sunfish, longear sunfish, channel catfish, black bullhead, yellow bullhead, and redhorse sucker.

PHYSICAL DATA

Surface elevation (ft msl)	784.4
Surface acres	300
Miles of shoreline	17.3
Maximum depth (ft)	70
Mean depth (ft)	21



WILLIAMSTOWN LAKE
WILLIAMSTOWN, KY.

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. C was entitled to withdraw water from artificial lake created by da even if flowage easements obtained before dam was built and lake v created had not expressly granted city permission to take water; c obtained permit from Kentucky to withdraw water and sought wa for beneficial purpose of public consumption.

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

Penalty: 151.990(1)(2)

NOTES OF DECISIONS AND OPINIONS

848 FSupp 102 (ED Ky 1994), Green v City of Williamstown. C was entitled to withdraw water from artificial lake created by da even if flowage easements obtained before dam was built and lake v created had not expressly granted city permission to take water; c obtained permit from Kentucky to withdraw water and sought wa 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 a regulation promulgated pursuant thereto has occurr it may issue and serve upon the person complair against a written notice of the provision of this chap or the regulation alleged to have been violated and facts alleged to constitute the violation thereof. Furth this notice shall require the person so complair against to answer the charges set out in the notice a hearing before the cabinet at a time not less than thi (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 notice 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 sl 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 date 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 referred 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 the Control Advisory Commission serving on the effective date of t shall be eligible to complete the terms that they are serving time, but upon completion of those terms, their successors sl appointed in accordance with Section 1 of this Act. The term commissioner of the Department of Local Government shall upon the effective date of this Act.

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

NOTES OF DECISIONS AND OPINIONS

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

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

KENTUCKY RIVER AUTHORITY

151.710 Kentucky River Authority

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

(2) The Governor shall appoint the secretary of the Nat 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 cou judge/executive shall be officers from counties wh 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 ac 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) sh 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 t Governor designates. At the expiration of the origi terms and for all succeeding terms, the Governor sh appoint a successor to the authority for a term of fo

(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 ef tive for at least one (1) year.

(3) The authority shall define by administrative regula those uses of the Kentucky River or the waters of Kentucky River basin subject to a water use fee. W use fees shall not apply to facilities using water 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 fund use by the authority.

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

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

(1) The authority shall bring an action for the recovery penalties provided for in KRS 151.990, the payment fees provided for in KRS 151.720, or for a restrain order, or a temporary or permanent injunction for prevention or correction of a condition constituting threatening to constitute a violation of the administ 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 vio tions of the administrative regulations promulgated the authority, the long-range water resource plan, c 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 pa of the cost of any one (1) or more projects undertak pursuant to KRS 151.720. The principal of and t interest on such bonds shall in each instance be payab solely from a special fund provided for the paymen with revenues derived from water use fees collecte from all facilities using water from the Kentucky Riv basin, except those facilities using water primarily f agricultural purposes, pledged to be set aside an 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 statu with respect to the pledge of funds from which they a payable, shall be dated, shall bear interest, shall matur 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 befor

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 sha 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 occupationa labor market, and educational training opportunities information t 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, an the presidents of Kentucky's public universities and direct them t 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 th 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
CHAPTER 5 WATER QUALITY
CHAPTER 6 SANITARY ENGINEERING
CHAPTER 8 PUBLIC WATER SUPPLY

NOTE: The following chapters are found in Volume 3 of the 1996 Kentucky Administrative Regulations

(DIVISION OF WASTE MANAGEMENT)
CHAPTER 30 GENERAL ADMINISTRATIVE PROCEDURES
CHAPTER 31 IDENTIFICATION AND LISTING OF HAZARDOUS WASTE
CHAPTER 32 STANDARDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTE
CHAPTER 33 STANDARDS APPLICABLE TO TRANSPORTERS OF HAZARDOUS WASTE
CHAPTER 34 STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE STORAGE, TREATMENT AND DISPOSAL FACILITIES
CHAPTER 35 INTERIM STATUS STANDARDS FOR OWNERS AND OPERATORS OF HAZARDOUS WASTE TREATMENT, STORAGE AND DISPOSAL FACILITIES
CHAPTER 36 STANDARDS FOR THE MANAGEMENT OF SPECIFIC HAZARDOUS WASTES AND SPECIFIC TYPES OF HAZARDOUS WASTE MANAGEMENT FACILITIES
CHAPTER 37 LAND DISPOSAL RESTRICTIONS
CHAPTER 38 HAZARDOUS WASTE PERMITTING PROCESS
CHAPTER 39 HAZARDOUS WASTE FEES
CHAPTER 40 ENFORCEMENT AND COMPLIANCE MONITORING FOR HAZARDOUS WASTES
CHAPTER 42 UNDERGROUND STORAGE TANKS
CHAPTER 45 SPECIAL WASTE
CHAPTER 47 SOLID WASTE FACILITIES
CHAPTER 48 STANDARDS FOR SOLID WASTE FACILITIES
CHAPTER 49 SOLID WASTE PLANNING

(DIVISION FOR AIR QUALITY)
CHAPTER 50 GENERAL ADMINISTRATIVE PROCEDURES
CHAPTER 51 NEW SOURCE REQUIREMENTS; NONATTAINMENT AREAS
CHAPTER 53 AMBIENT AIR QUALITY
CHAPTER 55 EMERGENCY EPISODES
CHAPTER 57 HAZARDOUS POLLUTANTS
CHAPTER 58 ASBESTOS

NOTE: The following chapters are found in Volume 4 of the 1996 Kentucky Administrative Regulations

CHAPTER 59 NEW SOURCE STANDARDS
CHAPTER 60 NEW SOURCE PERFORMANCE STANDARDS
CHAPTER 61 EXISTING SOURCE STANDARDS
CHAPTER 63 GENERAL STANDARDS OF PERFORMANCE
CHAPTER 65 MOBILE SOURCE-RELATED EMISSIONS
CHAPTER 100 ENVIRONMENTAL PROTECTION

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 stream-bank 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 H: EVALUATION OF ALTERNATIVES FORM AND RESULTS

EVALUATION FACTORS

OPTION 1 - DAM BELOW DAM ON WILLIAMSTOWN LAKE

Comments: Could use existing treatment plant. If the main reservoir were contaminated, this would be as well.

1. Degree to Which Alternative Contributes to Planning Objectives (See Attached)

1	2	3	4	5
Least				Most

2. Environmental Impacts (Including Cultural and Historical Sites)

1	2	3	4	5
Most Impacts				Least Impacts

3. Potential Sources of Contamination for Water Supply Alternative

1	2	3	4	5
Most Sources				Least Sources

4. Dependability of Water Supply Alternative (i.e. drought-vulnerability)

1	2	3	4	5
Least Dependable				Most Dependable

5. Social, Political, and Economic Impacts

1	2	3	4	5
Most Impacts				Fewest Impacts

6. Changes to Existing Water Quality Treatment Techniques or Capabilities that Would Be Required for the Alternative Source

1	2	3	4	5
Most Changes				Least Changes

OPTION 1 - DAM BELOW DAM ON WILLIAMSTOWN LAKE (CONTINUED)

7. Degree of Supply Protection Availability for Alternative Source

1	2	3	4	5
Least Protection				Most Protection

8. Changes in Wastewater Treatment and Disposal Systems that Would Be Necessitated by the Alternative Water Source

1	2	3	4	5
Most Changes				Fewest Changes

9. Costs Associated With Developing the Alternative Water Source

1	2	3	4	5
Most Expensive				Least Expensive

Other Comments:

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OPTION 2 - NEW RESERVOIR IN LEMON-NORTHCUTT ROAD AREA

Comments: Existing package treatment plants would need to be taken off-line. Good location to serve growth in the Bullock Pen service area.

1. Degree to Which Alternative Contributes to Planning Objectives (See Attached)

1	2	3	4	5
Least				Most

2. Environmental Impacts (Including Cultural and Historical Sites)

1	2	3	4	5
Most Impacts				Least Impacts

3. Potential Sources of Contamination for Water Supply Alternative

1	2	3	4	5
Most Sources				Least Sources

4. Dependability of Water Supply Alternative (i.e. drought-vulnerability)

1	2	3	4	5
Least Dependable				Most Dependable

5. Social, Political, and Economic Impacts

1	2	3	4	5
Most Impacts				Fewest Impacts

6. Changes to Existing Water Quality Treatment Techniques or Capabilities that Would Be Required for the Alternative Source

1	2	3	4	5
Most Changes				Least Changes

OPTION 2 - **NEW RESERVOIR IN LEMON-NORTHCUTT ROAD AREA (CONTINUED)**

7. Degree of Supply Protection Availability for Alternative Source

1	2	3	4	5
Least Protection				Most Protection

8. Changes in Wastewater Treatment and Disposal Systems that Would Be Necessitated by the Alternative Water Source

1	2	3	4	5
Most Changes				Fewest Changes

9. Costs Associated With Developing the Alternative Water Source

1	2	3	4	5
Most Expensive				Least Expensive

Other Comments:

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OPTION 3 - NEW RESERVOIR IN EITHER RATTLESNAKE CREEK OR MUSSELMAN CREEK BASIN

Comments: Limited development in either basin would make it easier to control potential contaminants and less displacement would be required.

1. Degree to Which Alternative Contributes to Planning Objectives (See Attached)

1	2	3	4	5
Least				Most

2. Environmental Impacts (Including Cultural and Historical Sites)

1	2	3	4	5
Most Impacts				Least Impacts

3. Potential Sources of Contamination for Water Supply Alternative

1	2	3	4	5
Most Sources				Least Sources

4. Dependability of Water Supply Alternative (i.e. drought-vulnerability)

1	2	3	4	5
Least Dependable				Most Dependable

5. Social, Political, and Economic Impacts

1	2	3	4	5
Most Impacts				Fewest Impacts

6. Changes to Existing Water Quality Treatment Techniques or Capabilities that Would Be Required for the Alternative Source

1	2	3	4	5
Most Changes				Least Changes

OPTION 3 - NEW RESERVOIR IN EITHER RATTLESNAKE CREEK OR MUSSELMAN CREEK BASIN (CONTINUED)

7. Degree of Supply Protection Availability for Alternative Source

1	2	3	4	5
Least Protection				Most Protection

8. Changes in Wastewater Treatment and Disposal Systems that Would Be Necessitated by the Alternative Water Source

1	2	3	4	5
Most Changes				Fewest Changes

9. Costs Associated With Developing the Alternative Water Source

1	2	3	4	5
Most Expensive				Least Expensive

Other Comments:

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OPTION 4 - INTERCONNECTION BETWEEN BULLOCK PEN WATER DISTRICT AND THE NORTHERN KENTUCKY WATER SERVICE DISTRICT IN PINER

Comments: The Northern Kentucky Water Service District just received a Community Development Block Grant to extend water lines in southern Kenton County. This will allow for interconnection; however, details on rates and the amount of water that could be delivered would have to be negotiated. This project would provide an additional water source for the rapidly growing northern portion of the county.

1. Degree to Which Alternative Contributes to Planning Objectives (See Attached)

1	2	3	4	5
Least				Most

2. Environmental Impacts (Including Cultural and Historical Sites)

1	2	3	4	5
Most Impacts				Least Impacts

3. Potential Sources of Contamination for Water Supply Alternative

1	2	3	4	5
Most Sources				Least Sources

4. Dependability of Water Supply Alternative (i.e. drought-vulnerability)

1	2	3	4	5
Least Dependable				Most Dependable

5. Social, Political, and Economic Impacts

1	2	3	4	5
Most Impacts				Fewest Impacts

6. Changes to Existing Water Quality Treatment Techniques or Capabilities that Would Be Required for the Alternative Source

1	2	3	4	5
Most Changes				Least Changes

OPTION 4 - INTERCONNECTION BETWEEN BULLOCK PEN WATER DISTRICT AND THE NORTHERN KENTUCKY WATER SERVICE DISTRICT IN PINER (CONTINUED)

7. Degree of Supply Protection Availability for Alternative Source

1	2	3	4	5
Least Protection				Most Protection

8. Changes in Wastewater Treatment and Disposal Systems that Would Be Necessitated by the Alternative Water Source

1	2	3	4	5
Most Changes				Fewest Changes

9. Costs Associated With Developing the Alternative Water Source

1	2	3	4	5
Most Expensive				Least Expensive

Other Comments:

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OPTION 5 - CONSTRUCTING A PIPELINE THROUGH EITHER GALLATIN OR PENDLETON COUNTY AND PUMPING WATER DIRECTLY FROM OHIO RIVER

Comments: A new treatment plant, capable of treating Ohio River water, would need to be constructed. On-going energy costs to pump water would probably be quite high.

1. Degree to Which Alternative Contributes to Planning Objectives (See Attached)

1	2	3	4	5
Least				Most

2. Environmental Impacts (Including Cultural and Historical Sites)

1	2	3	4	5
Most Impacts				Least Impacts

3. Potential Sources of Contamination for Water Supply Alternative

1	2	3	4	5
Most Sources				Least Sources

4. Dependability of Water Supply Alternative (i.e. drought-vulnerability)

1	2	3	4	5
Least Dependable				Most Dependable

5. Social, Political, and Economic Impacts

1	2	3	4	5
Most Impacts				Fewest Impacts

6. Changes to Existing Water Quality Treatment Techniques or Capabilities that Would Be Required for the Alternative Source

1	2	3	4	5
Most Changes				Least Changes

OPTION 5 - CONSTRUCTING A PIPELINE THROUGH EITHER GALLATIN OR PENDLETON COUNTY AND PUMPING WATER DIRECTLY FROM OHIO RIVER (CONTINUED)

7. Degree of Supply Protection Availability for Alternative Source

1	2	3	4	5
Least Protection				Most Protection

8. Changes in Wastewater Treatment and Disposal Systems that Would Be Necessitated by the Alternative Water Source

1	2	3	4	5
Most Changes				Fewest Changes

9. Costs Associated With Developing the Alternative Water Source

1	2	3	4	5
Most Expensive				Least Expensive

Other Comments:

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OPTION 6 - EAGLE LAKE PROJECT IN OWEN & SCOTT COUNTIES

Comments: Would create a very large water supply resource and recreational area. There are a number of factors that impact the feasibility of the project today including: availability of federal funds for a water resource project, possible citizen opposition, and the need for regional cooperation. This project, if feasible, would have a very long implementation period, probably extending beyond the planning period. A new treatment plant would probably be necessary.

1. Degree to Which Alternative Contributes to Planning Objectives (See Attached)

1	2	3	4	5
Least				Most

2. Environmental Impacts (Including Cultural and Historical Sites)

1	2	3	4	5
Most Impacts				Least Impacts

3. Potential Sources of Contamination for Water Supply Alternative

1	2	3	4	5
Most Sources				Least Sources

4. Dependability of Water Supply Alternative (i.e. drought-vulnerability)

1	2	3	4	5
Least Dependable				Most Dependable

5. Social, Political, and Economic Impacts

1	2	3	4	5
Most Impacts				Fewest Impacts

6. Changes to Existing Water Quality Treatment Techniques or Capabilities that Would Be Required for the Alternative Source

1	2	3	4	5
Most Changes				Least Changes

OPTION 6 - EAGLE LAKE PROJECT IN OWEN & SCOTT COUNTIES (CONTINUED)

7. Degree of Supply Protection Availability for Alternative Source

1	2	3	4	5
Least Protection				Most Protection

8. Changes in Wastewater Treatment and Disposal Systems that Would Be Necessitated by the Alternative Water Source

1	2	3	4	5
Most Changes				Fewest Changes

9. Costs Associated With Developing the Alternative Water Source

1	2	3	4	5
Most Expensive				Least Expensive

Other Comments:

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PLANNING OBJECTIVES

1. Use of conservation to the maximum extent practical;

2. Provide a continuous level of supply under all conditions;

3. Compatibility with existing plans or to offer recommendations to alter those plans;

4. Preservation and use of natural storage and retention systems, whenever cost and data constraints permit;

5. Protection and enhancement of the overall quality of the environment;

6. Cost effectiveness;

7. Social and political acceptability, and community cohesion;

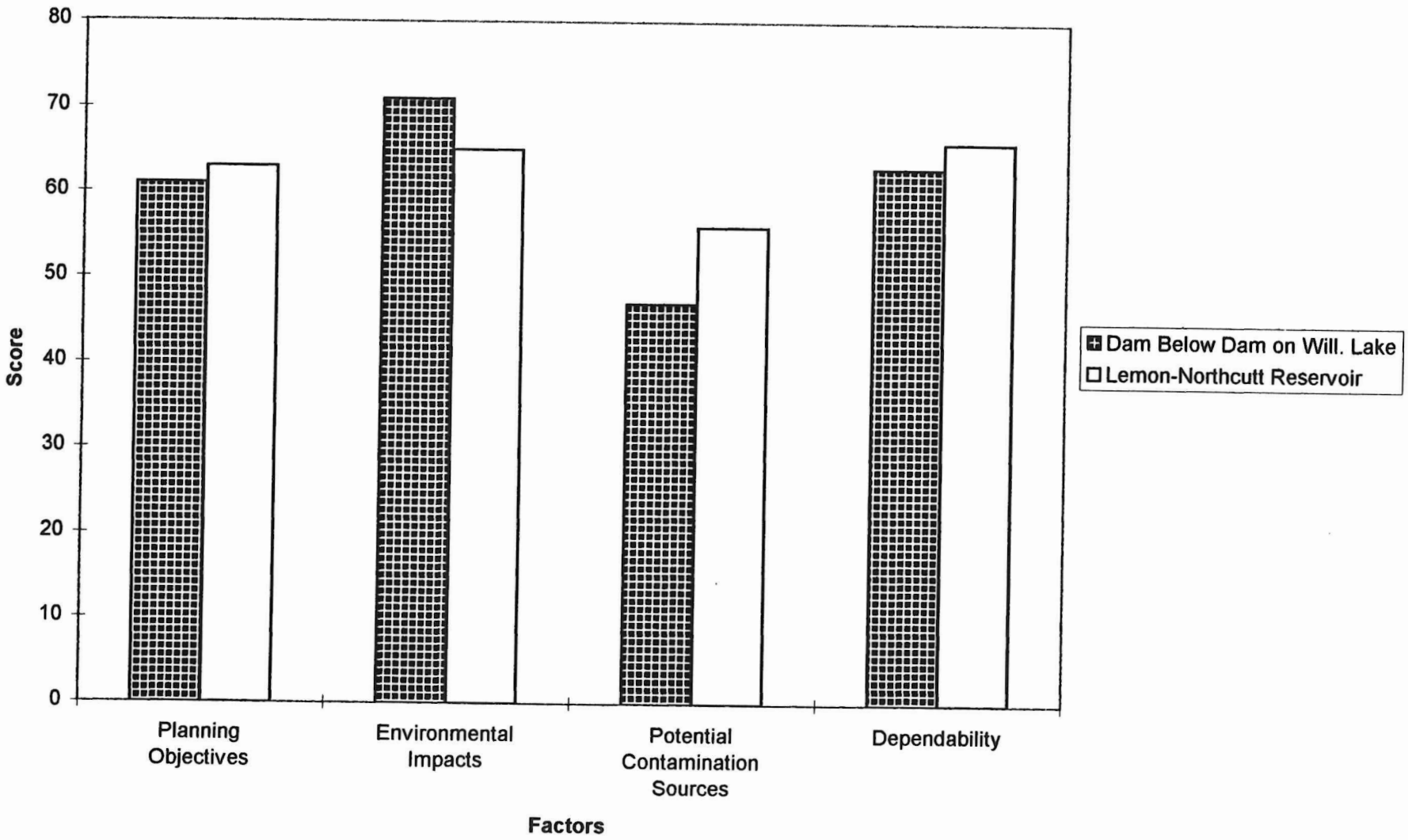
8. Coordination among water suppliers and distributors; and

9. Plan for, in order of priority, residential water use, industrial/commercial water use and fire protection.

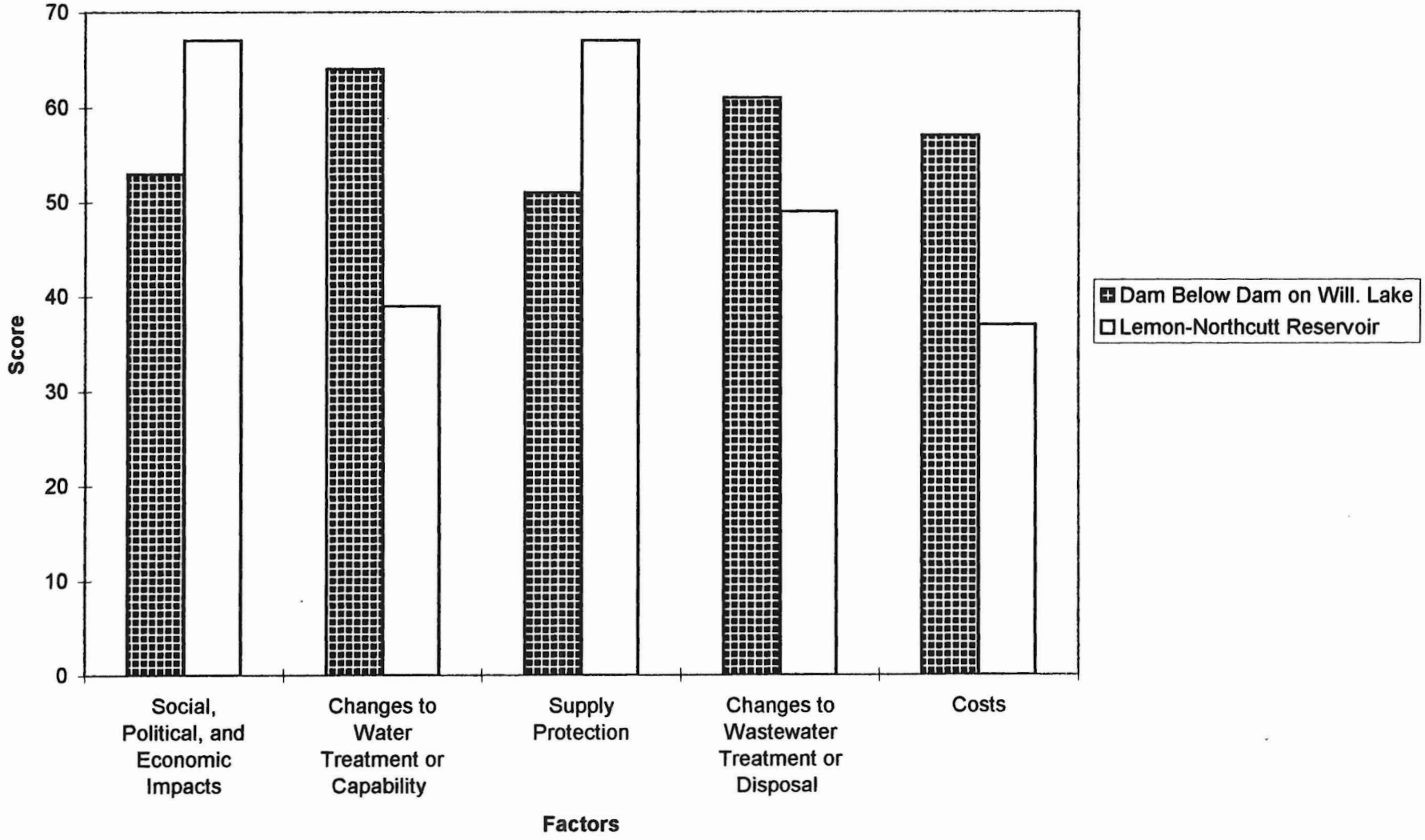
RANKING OF WATER SUPPLY ALTERNATIVES
(Based on survey responses received through March 10, 1998)

		Score
1.	Dam below dam on Williamstown Lake	539
2.	New reservoir in Lemon-Northcutt Road area	533
3.	Interconnection between Bullock Pen W.D. and the NO. KY. Water Service District	510
4.	Eagle Lake project	368
5.	New reservoir in either Rattlesnake Creek or Musselman Creek basin	323
6.	Pipeline to Ohio River through either Gallatin or Pendleton County	284

Comparison of Top Alternatives



Comparison of Top Alternatives



DAM BELOW DAM ON WILLIAMSTOWN LAKE																			TOTAL	AVERAGE
Planning Objectives																				
	3	1	1	1	1	5	3	5	5	5	5	5	5	1	3	4	4	4	61	3.39
Environmental Impacts																				
	4	1	3	3	1	5	3	4	5	5	5	5	5	5	4	4	5	4	71	3.94
Potential Contamination Sources																				
	4	1	1	1	1	4	1	3	2	4	3	5	5	3	4	2	1	2	47	2.61
Dependability																				
	4		1	1	1	4	3	5	5	5	5	5	5	2	4	5	5	3	63	3.71
Social, Political, and Economic Impacts																				
	3				1	5	3	5	5	4	3	5	3	3	3	4	3	3	53	3.53
Changes to Water Treatment or Capability Required																				
	2	3	3	3	1	5	3	5	5	5	3	5	4	4	4	5	1	3	64	3.56
Supply Protection																				
		1	1	1	1	3	2	4	3	5	5	5	4	2	3	4	5	2	51	3.00
Changes to Wastewater Treatment or Disposal Systems Required																				
		1	1	2		5	4	5	5	5	4	5	5	4	4	4	2	5	61	3.81
Costs																				
		1	1	1		5	4	5	3	4	5	5	5	4	3	3	3	5	57	3.56
																			528	

NEW RESERVOIR IN LEMON-NORTHCUTT ROAD AREA																			TOTAL	AVERAGE
Planning Objectives																				
		5	5	5	4	5	4	4	2	2	2	3	4	4	3	5	3	3	63	3.71
Environmental Impacts																				
		5	5	5	3	2	4	4	3	4	4	4	2	4	4	5	4	3	65	3.82
Potential Contamination Sources																				
		4	4	4	5	3	4	4	2	3	3	2	3	2	4	5	1	3	56	3.29
Dependability																				
		5	5	5	4	5	4	4	2	3	3	3	3	4	3	5	5	3	66	3.88
Social, Political, and Economic Impacts																				
		5	5	5	4	3	4	4	3	4	4	3	3	3	4	5	5	3	67	3.94
Changes to Water Treatment or Capability Required																				
		3	3	3	4	1	4	2	1	1	1	1	1	2	4	4	2	2	39	2.29
Supply Protection																				
	7	5	5	5	4	3	4	2	3	3	2	2	3	3	4	4	5	3	67	3.72
Changes to Wastewater Treatment or Disposal Systems Required																				
	4	4	4	4	4	2	3	2	2	2	2	3	1	2	3	4	1	2	49	2.72
Costs																				
	2				4	1	3	3	2	2	2	1	1	3	3	4	3	3	37	2.47
																			509	

INTERCONNECTION BETWEEN BPWD AND NO KY WATER SERVICE DIST.																	TOTAL	AVERAGE
Planning Objectives																		
	5	5	5	4	3	2	4	4	4	2	3	2	4	3	5	2	57	3.56
Environmental Impacts																		
	4	5	5	2	3	4	4	4	5	2	5	4	4	3	4	3	61	3.81
Potential Contamination Sources																		
	4	5	5	1	3	4	5	3	5	4	2	4	4	3	1	3	56	3.50
Dependability																		
	2			1	3	4	4	2	2	4	4	2	4	3	5	3	43	3.07
Social, Political, and Economic Impacts																		
	3	5	5	5	3	4	3	3	5	4	3	4	3	3	4	3	60	3.75
Changes to Water Treatment or Capability Required																		
	2	5	5	5	3	3	5	3	4	4	3	4	4	3	2	2	57	3.56
Supply Protection																		
	2	3	3	4	3	3	4	3	1	4	4	2	3	3	5	3	50	3.13
Changes to Wastewater Treatment or Disposal Systems Required																		
	2	5	5	5	3	4	3	2	5	4	3	4	4	3	3	2	57	3.56
Costs																		
	1	5	5	5	3	2	2	3	2	4	3	3	3	3	4	3	51	3.19
																	492	

EAGLE LAKE PROJECT																	TOTAL	AVERAGE
Planning Objectives																		
	4	3	3	2	3	5	5	3	5	4	3	4		4	5	3	56	3.73
Environmental Impacts																		
	4			1	3	3	1	1	1	2	1	1	3	4	5	3	33	2.36
Potential Contamination Sources																		
	3			3	3	3	3	2	1	2	2	3	3	4	1	3	36	2.57
Dependability																		
	4	4	4	5	3	4	4	5	5	4	3	4	5	4	5	3	66	4.13
Social, Political, and Economic Impacts																		
	4	1	1	1	3	4	1	2	1	2	1	1	3	4	2	2	33	2.06
Changes to Water Treatment or Capability Required																		
	1	1	1	1	3	3	2	1	1	4	1	2	2	4	2	3	32	2.00
Supply Protection																		
	2		5	3	4	3	5	4	2	1	2	2	4	4	5	3	49	3.27
Changes to Wastewater Treatment or Disposal Systems Required																		
	1			1	1	3	2	2	1	1	2	2	2	4	2	3	27	1.93
Costs																		
	1	1	1	1	1	2	1	2	1	1	1	2	2	4	3	2	26	1.63
																	358	

NEW RESERVOIR IN EITHER RATTLESNAKE OR MUSSELMAN CREEK BASIN													TOTAL	AVERAGE
Planning Objectives														
	5	3	2	3	2	3	2	4	4	3	4	3	38	3.17
Environmental Impacts														
	2	4	2	3	3	5	4	3	3	3	2	4	38	3.17
Potential Contamination Sources														
	4	4	3	3	4	4	4	3	4	3	1	3	40	3.33
Dependability														
	3	3	2	4	1	4	4	2	4	3	5	3	38	3.17
Social, Political, and Economic Impacts														
	2	4	4	4	4	5	4	2	3	3	2	4	41	3.42
Changes to Water Treatment or Capability Required														
	2	1	2	2	1	1	1	2	4	3	2	3	24	2.00
Supply Protection														
	3	2	3	3	3	3	2	3	4	3	4	3	36	3.00
Changes to Wastewater Treatment or Disposal Systems Required														
	2	1		4	2	5	1	2	4	3	2	3	29	2.64
Costs														
	2	1		4	1	4	1	2	4	3	2	3	27	2.45
													311	

PIPELINE TO OHIO RIVER THROUGH GALLATIN OR PENDLETON COS.																TOTAL	AVERAGE
Planning Objectives																	
	2	1	1	3	3	3	4	3	1	1	3	1	1	5	2	34	2.27
Environmental Impacts																	
	2			1	3	4	1	1	3		1	3	1	5	2	27	2.25
Potential Contamination Sources																	
	3	2	2	1	4	4	2	2	1		1	1	1	1	1	26	1.86
Dependability																	
	2	4	4	5	3	4	5	4	5		4	4	1	5	3	53	3.79
Social, Political, and Economic Impacts																	
	2	1	1	3	3	3	2	2	4		1	3	1	5	4	35	2.50
Changes to Water Treatment or Capability Required																	
	2	1	1	2	4	2	1	1	1	3	1	1	1	2	1	24	1.60
Supply Protection																	
	2			3	3	3	3	3	5	2	2	2	1	4	1	34	2.62
Changes to Wastewater Treatment or Disposal Systems Required																	
	1	1		2	1	4	4	1	1	2	1	3	1	2	3	27	1.93
Costs																	
	1		1	1	1	2	1	1	1	3	1	1	1	3	2	20	1.43
																280	

SUMMARY OF COMMENTS REGARDING ALTERNATIVES

DAM BELOW THE DAM ON WILLIAMSTOWN LAKE

- Improves Williamstown's system, but does not provide a new source of water.
- With treatment plant and water lines already in place, this alternative would be extremely cost-effective.
- The existing dam would separate the new lake from the old lake in terms of potential contamination.
- Infrastructure in place for treatment and expansion. Main reservoir could be contaminated depending upon location of contamination. Contamination could be a problem with any of the alternatives.
- May be the best solution?
- Concerned about Williamstown having control of new water source since they want to make the water supply a profit-making operation. It might be more economical for BPWD to purchase water from the Northern Kentucky Water Service District.

NEW RESERVOIR IN LEMON-NORTHCUTT ROAD AREA

- Since costs are not known, building this reservoir may not be any more expensive than building an additional dam at Williamstown and it would create a new water supply source.
- Good idea but where would money come from?
- There is no infrastructure in place.
- Could water be pumped to existing treatment plants?
- Geographic location would make it easy to serve BPWD. Existing wastewater package treatment plants could be upgraded to release higher quality water.

NEW RESERVOIR IN EITHER RATTLESNAKE OR MUSSELMAN CREEK BASIN

- No infrastructure in place.
- Seems to have the least environmental impact and with limited access and good

APPENDIX I: OBSTACLES TO THE PLANNING PROCESS

APPENDIX I
OBSTACLES TO THE PLANNING PROCESS

There were no significant obstacles to the planning process. The Planning Council was dedicated to the process and continues to move forward with plan implementation.

APPENDIX J: PAYING FOR THE PLANNING PROCESS

APPENDIX J
PAYING FOR THE PLANNING PROCESS

The Grant County Water Supply Planning Council received a grant from the Division of Water in the amount of $5,100.00 for Phase I planning activities. NKADD contracted with the engineering firm of Hicks & Mann for mapping services at a cost of $1,000.00.

The Phase II plan was completed without any additional funding and it is estimated that NKADD donated $6,000.00 in in-kind services.